

APPENDIX C
FRA MAGNETIC TAPE FORMAT

APPENDIX C

National Highway-Rail Grade Crossing Inventory Data Field Specifications for Magnetic Tape Updates

Columns 1 - 25

The first 25 columns of each record are to contain the identification data for the crossing. The data in these columns is validated against the inventory record for the crossing before any of the update data is posted.

Columns 26 - 80

Columns 26 - 80 may contain one or more sets of information. Each set of information or data-unit identifies the data element and the data. It consists of four parts: the data element identifier, a comma, the data, and a slash. The slash signifies the end of the data-unit.

The first set of characters, followed by a comma, is the data element number. The remaining set of characters, from the comma to the slash, is the data itself. The data can again be divided into two parts, the first character(s) of data being a number and the remaining characters being the description. This applies only to the following elements:

- | | | | |
|----|---------|-------|-----------------------------------|
| a. | Part I | 16C | Private crossing signs or signals |
| b. | Part II | 3 | Non-main tracks |
| c. | Part II | 4 | Other RR separate track |
| d. | Part II | 5 | Other RR same track |
| e. | Part II | 6A-05 | Other signs |
| f. | Part II | 6A-07 | Other signs |
| g. | Part II | 6B-14 | Other flashing lights |

A slash is entered when the description is complete. For descriptive data the length is equal to or less than the number of spaces indicated on the form. For numeric information the data length is the exact number, zero filled to the left.

When one data element is completed, another may be started by entering the data element number, a comma, the data, then a slash. This can be continued up to and including column 80. If the ending slash was not entered in column 80, then duplicate the first 25 columns and continue in column 26 on the next line. A slash must end a data unit even if the information has to be entered with only the identification information and a slash in column 26.

Since there are no easily keyed Roman equivalents of sections I, II, III, and IV, the numerics 1, 2, 3, and 4 are to be used.

The following tables present a concise guide to entering the data accurately and in the proper format. Table C-1 begins with the guidelines for completing the identification data into columns 1 through 25. Tables C-2 through C-5 continue with the rules for entering the data into columns 26 - 80, as necessary, for the data elements within each of the sections of the four-part form. Information for the same set of identification data can be continued from column 80 to column 26 of the following line, with no spaces, as long as a data unit ends with a slash. The identification data must be repeated in columns 1 - 25 for each line in which its data is entered.

Field Name	Length/Type	Position	Valid Values
Init(iating) Agency (A)	(1N)	1	"1" or "2"
Crossing No. (B)	(6N, + 1A)	2-8	First 6 = Num, 7th = Alpha, leading zeros must be entered, valid check character
Reason (C)	(1N)	9	"1" = Change "3" = Closed crossing
E(ffective) Date (D)	(6N)	10-15	"MMDDYY" - Month/Day/Year
State	(2A)	16-17	Valid 2-digit State code
County	(3N)	18-20	Valid county code
RR Code	(4A)	21-24	Valid DOT-AAR code
Control	(1A)	25	Leave blank
<p>Sample Updates: (seven closed and two changes)</p> <p>1631267H305059337071DTNC 1631269W305059337071DTNC 1631270R305059337071DTNC 1631271X305059337071DTNC 1631272E305059337071DTNC 1631273L305059337071DTNC 1631274T305059337071DTNC 1163548A104279317031CSX 110,51ST COURT(1-WAY)/114,0001.28/221,010/222,000/223,0 1163548A104279317031CSX 10/ 1346514N104299317189CSX 114,0434.26/221,030/222,000/223,030/232,01INDUSTRY /26 1346514N104299317189CSX 01,0/2613,4/2618,2/32,3/38,6/</p> <p>This is an example of two types of updates. The first seven lines represent updates to close seven grade crossings. Note that for each closing, only the identification data is required in the 80-character record. The last four lines are changes to two grade crossings.</p>			

Table C-1. Identification Data

Data Element Number	Field Name	Length/Type	Valid Values
11,	RR Operating Company (1)	(4A)	Valid DOT-AAR railroad code
12,	RR Division (2)	(14 A/N)	Any 1-14 alphanumeric
13,	RR Subdivision (3)	(14 A/N)	Any 1-14 alphanumeric
14,	State (4)	(2A)	Valid 2-digit State code
15,	County (5)	(3 A/N)	Valid 3-digit county code
16,	County Map Ref (6)	(10 A/N)	Any 1-10 alphanumeric
17,	City (7)	(4N)	Valid 4-digit city code
18,	Near (EST) City	(1 A/N)	"0" if in-city, "1" if near city
19,	Hwy Type	(7 A/N)	Any 1-7 alphanumeric
110,	Street/Road (10)	(17 A/N)	Any 1-17 alphanumeric
111,	RRID No. (11)	(10 A/N)	Any 1-10 alphanumeric
112,	TT Station (12)	(6 N)	Valid 6-digit SPLC code
113,	Branch (13)	(15 A/N)	Any 1-15 alphanumeric
114,	Milepost (14)	(7 A/N)	Any alphanumeric (must have 2-digits to right of decimal)
115,	Ped Xing (15)	(1 A/N)	"1", "2", or "3"
116A,	Priv X-use (16A)	(1 A/N)	"1" to "4"
116B,	Priv X-type (16B)	(1 A/N)	"5", "6", or "7"
116C,	Priv X-WD (16C)	(1 A/N; 15A)	"8", "9", or "0" (+ 1 to 15 character description if "8" or "9")
117,	Pub Xing (17)	(1 A/N)	"1", "2", or "3"
<p>Sample Updates: (Private to Public)</p> <p>1632918W112018745061CSX 12,FL /13,HARTSVILLE /16,31 /17,01 1632918W112018745061CSX 90/18,0/19,SC0154/112,445130/113,SJA /114,0 1632918W112018745061CSX 331.39/117,1/118,NINWX/211,00/212,00/213,00/214,00/215, 1632918W112018745061CSX 1/221,025/222,005/223,015/231,1/232,00 /24,2 1632918W112018745061CSX /25,2 /2601,2/2620,0/27,1/ 1632918W112018745061CSX 28,3/29,2/31,1/32,3/33,2/34,2/35,1/36,2/37,1/38,3/39,2/ 1632918W112018745061CSX 310,2/41,04/42,1/43,07/44,001050/45,08/</p> <p>This is an example of a crossing that was either Private or Pedestrian and is being changed to Public-at-Grade. For this type of change, all of Parts II through IV information must be provided. Only one type of crossing can be given.</p> <p>Sample updates: (RR Change - TT to CSX)</p> <p>1851573G109289239173TT 11,CSX /222,020/223,025/</p> <p>This update shows a change in the Railroad Operating Company from TT to CSX.</p>			

Table C-2. Part I Data

Table C-3. Part II Data

Data Element Number	Field Name	Length/Type	Valid Values
211,	Day Thru Trn (1A-1)	(2N)	00 to 99
212,	Day Switch Trn (1A-2)	(2N)	00 to 99
213,	Night Thru Trn (1A-3)	(2N)	00 to 99
214,	Night Switch Trn (1A-4)	(2N)	00 to 99
215,	Less 1/day (1A-5)	(1N)	"1" or "0"
221,	Max Timetable Speed (2A-1)	(3N)	001 to 130
222,	Typ Min Spd	(3N)	000 to 130
223,	Typ Max Spd (2B-3)	(3N)	001 to 130
231,	Main Track (3-1)	(1N)	0 to 9
232,	Other Track (3-2)	(12 A/N)	First 2 = Num (00-99) last 10 = any 1 to 10 alphanumeric
24,	RR Sep Trk (4-1 & 2)	(17 A/N)	"1" or "2" (+ valid DOT-AAR RR code(s) in groups of four characters each if "1")
25,	RR Same Trk (5-1 & 2)	(17 A/N)	"1" or "2" (+ valid DOT-AAR RR code(s) in groups of four characters each if "1")
2601,	Xbucks - Ref-01 (6A-01)	(1N)	0 to 9
2602,	Xbucks - Non-02 (6A-02)	(1N)	0 to 9
2603,	Stop - Stand-03 (6A-03)	(1N)	0 to 9
2604,	Stop - Other-04 (6A-04)	(1N)	0 to 9
2605,	Oth Sign-05 (6A-05 & 06)	(11 A/N)	First character = 0 to 9, next 10 = any 1 to 10 alphanumeric if first character is greater than 0
2607,	Oth Sign-07 (6A-07 & 08)	(11 A/N)	First character = 0 to 9, next 10 = any 1 to 10 alphanumeric if first character is greater than 0
2609,	Gates - 09 (6B-09)	(1N)	0 to 9
2610,	Gates - 10 (6B-10)	(1N)	0 to 9
2611,	Fl-Over-Tr-11 (6B-11)	(1N)	0 to 9
2612,	Fl-Not-Over-12 (6B-12)	(1N)	0 to 9
2613,	Fl-Mast-13 (6B-13)	(1N)	0 to 9
2614,	Fl-Oth-14 (6B-14 & 15)	(10 A/N)	First character = 0 to 9, next 9 = any 1 to 9 alphanumeric if first character is greater than 0
2616,	Tr-Sig-16 (16B16)	(1N)	0 to 9
2617,	Wigwags-17 (6B-17)	(1N)	0 to 9

Data Element Number	Field Name	Length/Type	Valid Values
2618,	Bells-18 (6B-18)	(1N)	0 to 9
2619,	Special W.D. (6C-19)	(20 A/N)	Any 1 to 20 alphanumeric
2620,	(6D) Nosigns-Sig-20 (6D-20)	(1N)	"0" or "1"
27,	Commercial Power (7)	(1N)	"1" or "2"
28,	Speed Selection (8)	(1N)	"1", "2", or "3"
29,	Signal Method (9)	(1N)	"1" or "2"
<p>Sample Updates:</p> <p>1623372N109189212121CSX 114,0717.29/221,045/222,045/223,045/ 1623373V109189212121CSX 114,0718.20/221,045/222,045/223,045/ 1623374C109189212121CSX 114,0718.89/221,045/222,045/223,045/</p> <p>1170029P112018917021CIM 15,179/110,MCLEAN /111,105A /114,0010.33 1170029P112018917021CIM /117,1/211,04/212,04/213,04/214,00/221,010/222,001/223, 1170029P112018917021CIM 010/231,1/232,00 /24,2 /25,2 1170029P112018917021CIM /2613,2/27,1/28,2/29,2/31,3/32,3/33,2/34,2 1170029P112018917021CIM /35,1/36,3/37,2/38,6/39,2/310,1/41,08/42,2/43,19/44,000 1170029P112018917021CIM 059/45,01/</p> <p>The following is a list of cross-field checks which should be performed to insure consistency in the Part II data:</p> <ol style="list-style-type: none"> If the sum of daily train movements is zero (211,00/212,00/213,00/214,00,the Less Than One Movement field must equal "1" (215,1/). Conversely, if the sum of daily train movements exceeds 1, field 215, cannot equal "1". Maximum speed over crossing (223,) must not exceed maximum timetable speed (221,). Minimum speed over crossing (222,) must not exceed maximum speed over crossing (223,). Main tracks (231,) and other tracks (232,) cannot both be 0. If the sum of all warning devices (2601, to 2619,) exceeds 0, Field 2620, cannot equal "1". Conversely, if the total of all warning devices equals 0, Field 2620, must equal "1". If the sum of Train Activated Devices (2601, to 2618,) equals 0, Field 28, cannot equal "1". 			

Table C-3. Part II Data (Continued)

Data Element Number	Field Name	Length/Type	Valid Values
31,	(1) Type Devel	(1N)	"1" to "5"
32,	(2) Xing Angle	(1N)	"1", "2", or "3"
33,	(3) No Tr Lanes	(1N)	0 to 9
34,	(4) Truck Pullout Lns	(1N)	"1" or "2"
35,	(5) Hwy Paved?	(1N)	"1" or "2"
36,	(6) Pavement Markings	(1N)	"1" or "2" or "3" or "4"
37,	(7) Advance Warning	(1N)	"1" or "2"
38,	(8) Crossing Surface	(1N)	"0" to "9"
39,	(9) Down Street	(1N)	"1" or "2"
310,	(10) Intersecting Hwy?	(1N)	"1" or "2"
<p>Sample Updates:</p> <p>2079899V106219355063BN 38,2/ 2079900M106219355063BN 38,2/ 2079944M106219355011BN 37,2/38,2/ 2079945U106219355011BN 38,2/ 2079951X106219355011BN 38,2/ 2079957N106219355011BN 36,1/</p> <p>Cross-Field Edit: In Part III, if the highway is not paved (35,2/) pavement markings can only be "None" (36,3/).</p>			

Table C-4. Part III Data

Data Element Number	Field Name	Length/Type	Valid Values
41,	(1) Highway System	(2N)	"01" to "04" or "08"
42,	(2) State Highway?	(1N)	"1" or "2"
43,	(3) Functional Class	(2N)	"01, 02, 06, 07, 08, 09, 11, 12, 14, 16, 17, and 19"
44,	(4) AADT	(6N)	000001 to 999999
45,	(5) Percent Trucks	(2N)	00 to 99
Sample Updates: 2229275V106149321161CSX 44,002450/ 2229276C106149321161CSX 44,000600/ 2229278R106149321161CSX 44,001490/ 2229279X106149321161CSX 44,001100/ 2229280S106149321161CSX 44,001000/ 2229281Y106149321161CSX 44,001440/ 2229282F106149321161CSX 44,000800/			

Table C-5. Part IV Data

