



## Railroad Safety Office

### Field Supplement to Railroad Inspection

### Procedure Manual

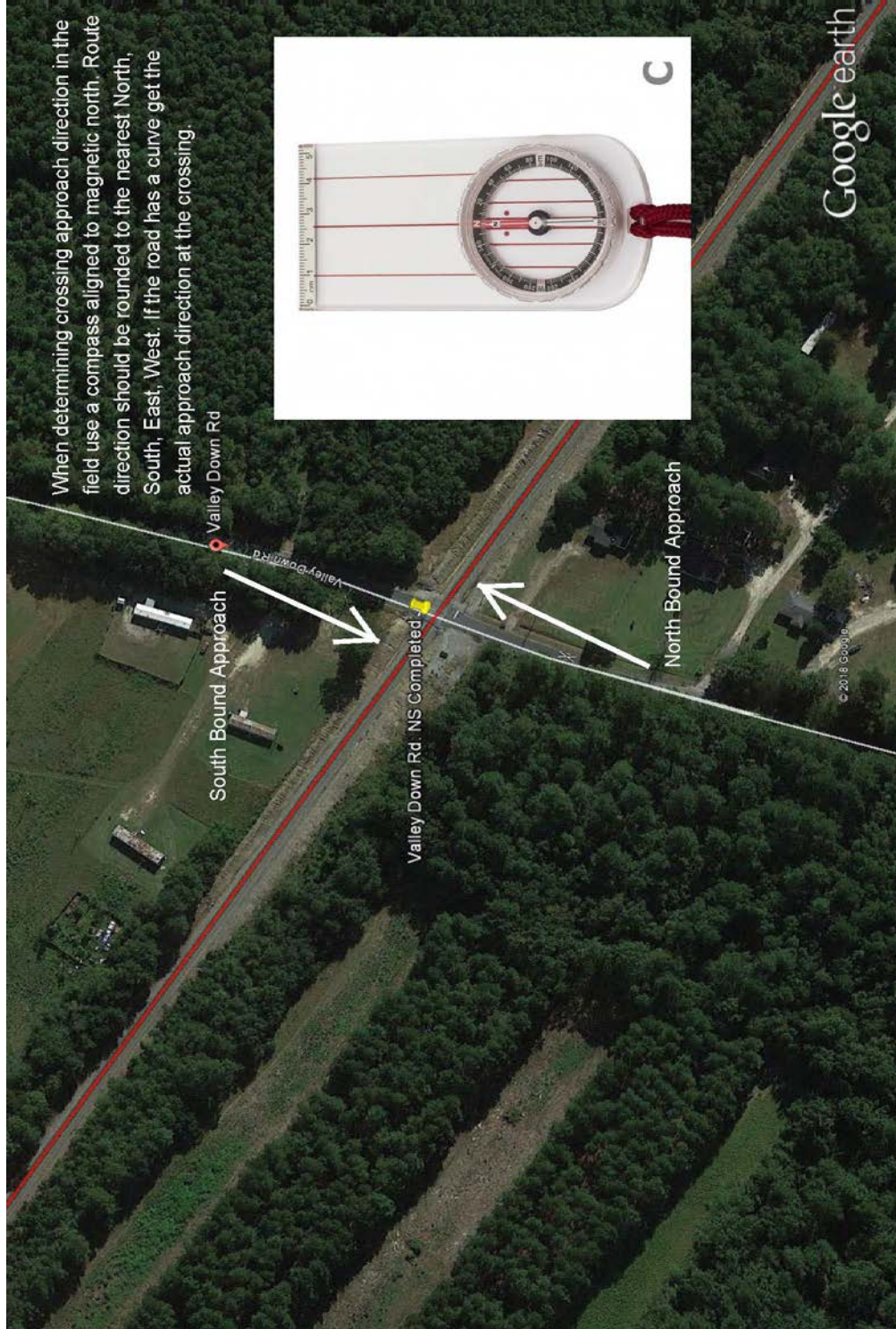
#### Sections:

1. *Determining approach direction in the field*
2. *Verbiage guide for deficiencies, Lourie / Inventory forms and route directions*
3. *Guidance on taking photos of the crossings*
4. *Guidance on vandalized and bent signs*
5. *Guidance on pavement marking replacements*
6. *Guidance on 2" reflective strips for passive crossings*
7. *Awareness of Emergency Notification Signs (ENS)*
8. *Proper signing when distance to track from parallel road is  $\leq 100'$*
9. *How to handle tracks that look abandoned or closed*
10. *Guidance on pedestrian crossings*
11. *Determining hump crossings*
12. *Determining sight distance for Lourie obstructions and stop ahead / yield ahead.*
13. *Packaging attachments for submittal*

*Revised 4/19/2022*

# Section 1

## Determining route direction in the field



## Section 2

### Verbiage guide for deficiencies, Lourie / Inventory forms and route directions

1. Do not write in all caps. Inspector's comments will be transferred to the deficiency letters.
2. Use sign numbers for all signs. Example: "R15-1" in place of "Crossbucks"
3. For pavement markings that do not exist:
  - a. Label as "Install New"
4. For pavement markings that need to be replaced:
  - a. Label as "Replace"
5. If the road was recently chip sealed / resurfaced and no RxR marking is present:
  - a. Label as "Install New".
6. For signage that does not exist:
  - a. Label as "Erect New"
7. For signage that needs replacing:
  - a. Label as "Replace"
8. For signage that has mildew and/or debris on it but you can clearly see the reflective prisms under it:
  - a. You may label as "Clean" or "Replace" based on inspectors opinion. The local maintenance office will make determination if they can clean or replace the sign.
9. Sign posts that are over 15 degrees from straight can be called to be straightened.
  - a. Use the verbiage "Straighten"
10. If a Crossbuck is "flat" and has no reflective sheeting:
  - a. Label as "Replace Non Reflective R15-1."
11. If a Crossbuck averages less than 50 millicandelas write the reading in parentheses.
  - a. Label as "Replace R15-1 due to low reflectivity (45)."

**DISTRICT 4**  
*13-Jan-18*

CROSSING NUMBER	COUNTY	ROAD	SOLUTION
715926V	20	S-159 LONGLEAF ROAD	REPLACE STOP LIMIT LINE ON WESTBOUND APPROACH
715929R	20	S-73 RUFF RD	REPLACE RXR PAVEMENT MARKING ON SOUTHBOUND APPROACH; PLACE STOP LIMIT LINE ON NORTHBOUND APPROACH
715931S	20	SC-34 CHURCH ST	REPOSITION W10-1 ON SOUTHBOUND APPROACH; ERECT R8-8 ON SOUTHBOUND APPROACH; ERECT W10-1 ON NORTHBOUND APPROACH
715932Y	20	S-72 THOMAS ST	ERECT W10-4 RIGHT ON SOUTHBOUND APPROACH; ERECT R8-8 ON SOUTHBOUND APPROACH; REPLACE STOP LIMIT LINE ON BOTH APPROACHES.
715934M	20	S-109 TUCKAHOE RD	REPLACE W10-1 ON NORTHBOUND APPROACH
715944T	20	S-168 ROCKTON THRUWAY	REPLACE W10-3 RIGHT ON WESTBOUND APPROACH; REPLACE STOP LIMIT LINE ON WESTBOUND APPROACH; REPLACE RXR PAVEMENT MARKING ON WESTBOUND APPROACH

Do not write in all caps, this format is transferred to the letter attachment

**DISTRICT 4**  
*19-Jan-18*

CROSSING NUMBER	COUNTY	ROAD	SOLUTION
638912B	46	S-697 CURETON FERRY RD	Install W3-2 on WB approach.
638916D	46	S-949 COLLEGE RD.	Install 2" reflective strips on front/back of NB and front of SB crossbuck post. Install W10-3L on Pottery Rd of SB approach. Trim trees around W10-1 on NB approach.
716013G	46	S-82 EAST CHAPEL RD	Apply stop line and RXR pavement markings on both approaches. Install W10-5 on both approaches.
716016C	46	SC 324 OGDEN RD	Trim branches between W10-1 and tracks on both approaches.

This is how comments should be formatted. Abbreviate approaches as EB approach, etc.

## Section 3

### Guidance on taking photos of the crossings



## Section 4

### Guidance on bent and vandalized signs

*Straighten if > 15 degrees*

Acceptable



Not Acceptable



*Replace if signs are blocked or have profanity*

*Not Acceptable*



*Replace or straighten if signs are bent*

*Not Acceptable*



*Not Acceptable*





*Replace if shot signs affect legibility or reflectivity*

*Not Acceptable*



*Acceptable*



*Treat R15-2Ps like crossbucks. Replace if damaged or low reflectivity.*

*Not Acceptable*

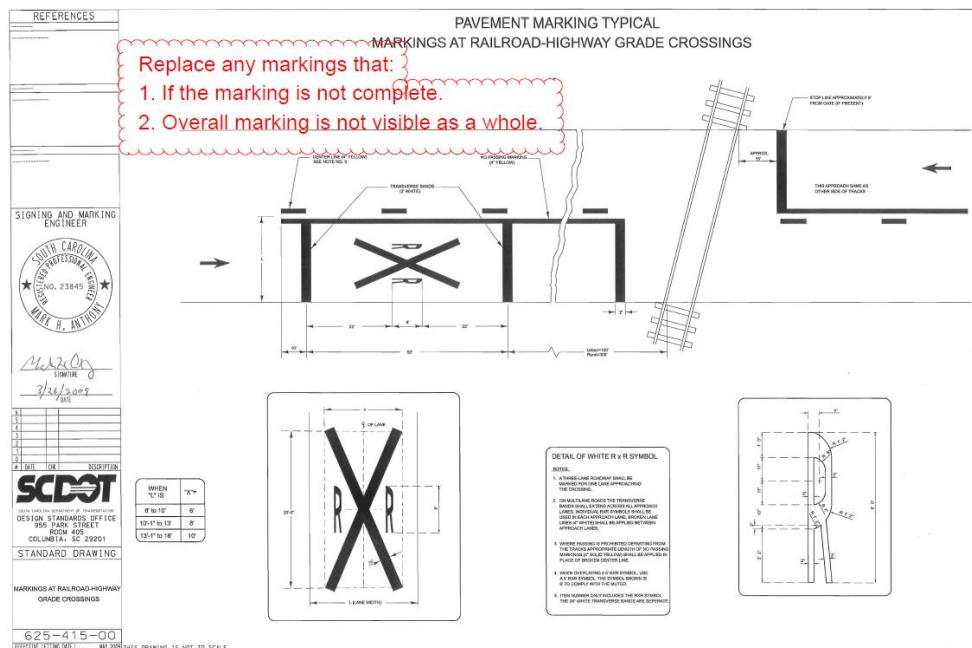


# Section 5

## Guidance on pavement marking replacements

Replace or install new if pavement markings meet any of the following:

1. If the road HAS an existing marking:
  - a. The marking is not complete.
  - b. The marking is worn past 50% complete.
  
2. If the road does NOT have any markings present.
  - a. If it has active warning devices then request to “Install New”.
  - b. If it does NOT have active warning and is over 400 vehicle ADT and over 40 MPH then request to “Install New”. Otherwise it does not need pavement markings.
  - c. If the road has visibly been resurfaced since the last inspection then request to “Install New” if it meets the criteria explained above.



# *Pavement Marking Examples*

## *Acceptable*



## *Not Acceptable*



**Not Acceptable – can request transverse line only**



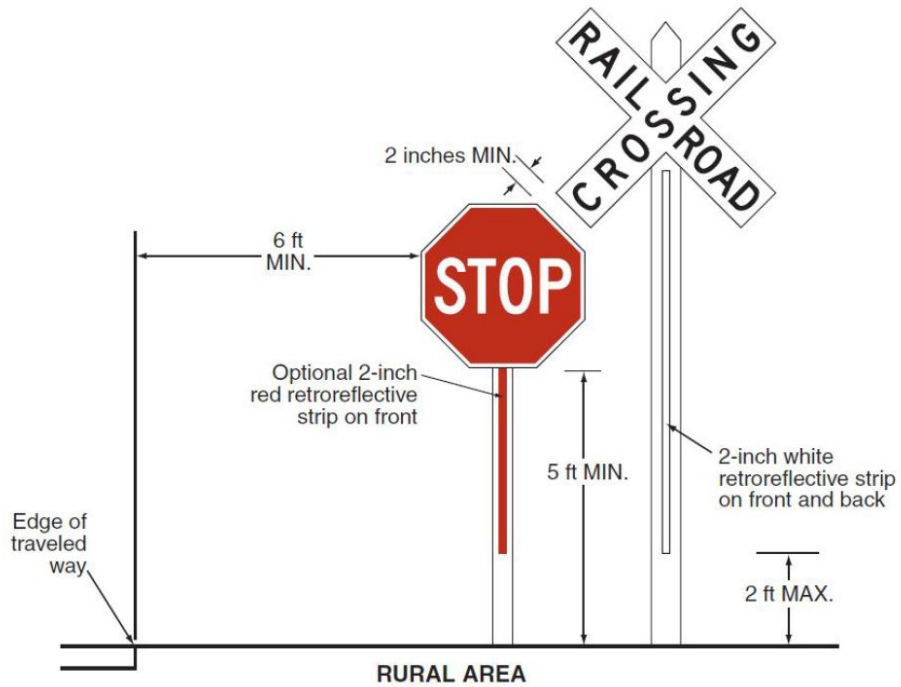
**Acceptable**

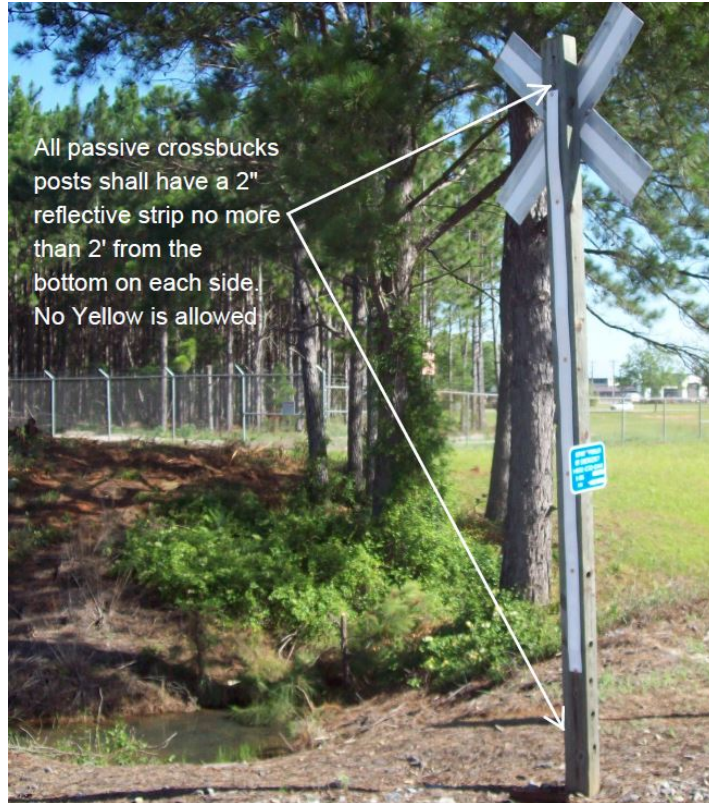


## Section 6

# Guidance on 2" reflective strips for passive crossings

**Figure 8B-3. Crossbuck Assembly with a YIELD or STOP Sign on a Separate Sign Support (Sheet 2 of 2)**





All passive crossbucks posts shall have a 2" reflective strip no more than 2' from the bottom on each side. No Yellow is allowed



If the reflective strip is damaged to the point that it reduces reflectivity then it must be replaced.

## Section 7

# Awareness of Emergency Notification Signs (ENS)



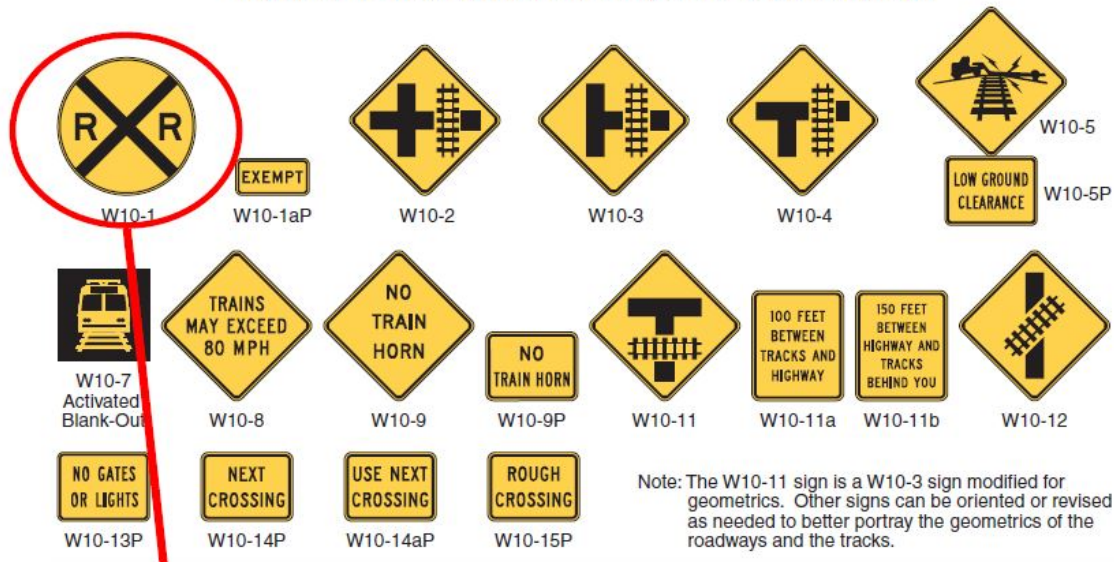
## Section 8

# Proper signing when distance to track from parallel road is < 100'

2009 Edition

Page 759

Figure 8B-4. Warning Signs and Plaques for Grade Crossings



03 A Yield Ahead (W3-2) or Stop Ahead (W3-1) Advance Warning sign (see Figure 2C-6) shall also be installed if the criteria for their installation given in Section 2C.36 is met. If a Yield Ahead or Stop Ahead sign is installed on the approach to the crossing, the W10-1 sign shall be installed upstream from the Yield Ahead or Stop Ahead sign. The Yield Ahead or Stop Ahead sign shall be located in accordance with Table 2C-4. The minimum distance between the signs shall be in accordance with Section 2C.05 and Table 2C-4.

Option:

04 On divided highways and one-way streets, an additional W10-1 sign may be installed on the left-hand side of the roadway.

Standard:

05 If the distance between the tracks and a parallel highway, from the edge of the tracks to the edge of the parallel roadway, is less than 100 feet, W10-2, W10-3, or W10-4 signs (see Figure 8B-4) shall be installed on each approach of the parallel highway to warn road users making a turn that they will encounter a grade crossing soon after making a turn, and a W10-1 sign for the approach to the tracks shall not be required to be between the tracks and the parallel highway.

06 If the W10-2, W10-3, or W10-4 signs are used, sign placement in accordance with the guidelines for Intersection Warning signs in Table 2C-4 using the speed of through traffic shall be measured from the highway intersection.

Guidance:

07 If the distance between the tracks and the parallel highway, from the edge of the tracks to the edge of the parallel roadway, is 100 feet or more, a W10-1 sign should be installed in advance of the grade crossing, and the W10-2, W10-3, or W10-4 signs should not be used on the parallel highway.



## Section 9

### How to handle tracks that look abandoned or closed

*Regardless of the condition of the right of way we still inventory / inspect. If you feel that the line may be out of service please contact us.*



## Section 10

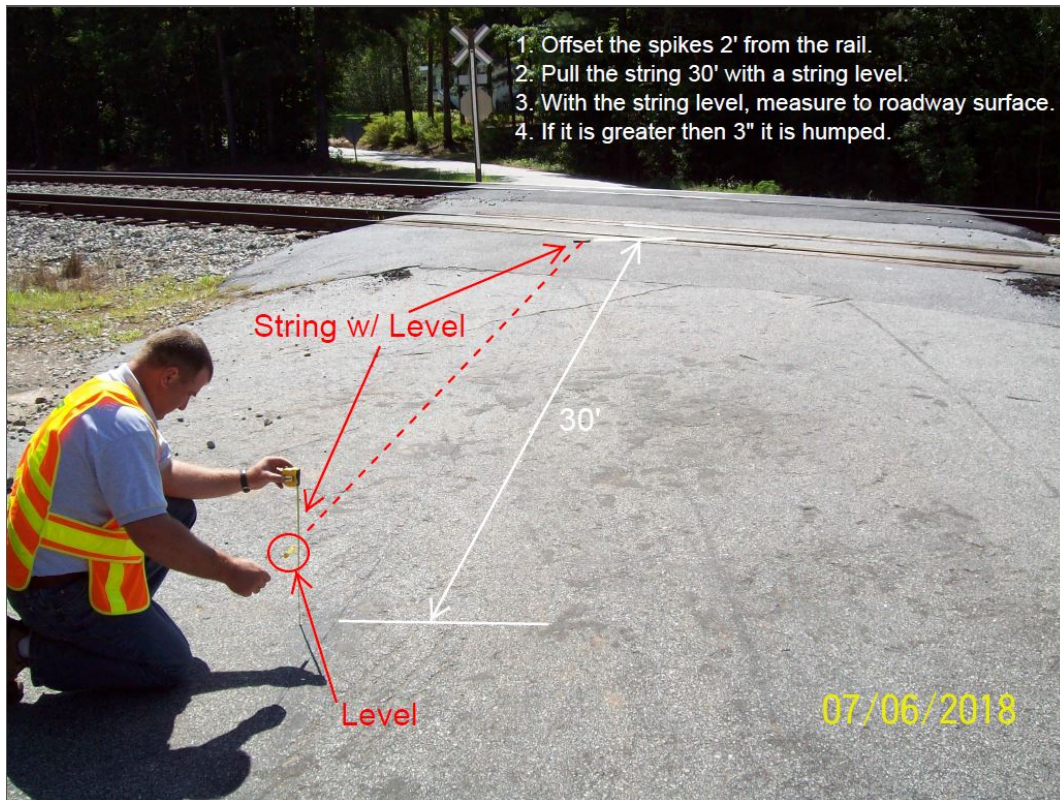
### Guidance on Pedestrian Crossings

*If there is a pedestrian crossing separated and adjacent to the Roadway crossing greater than 25', it will need its own crossbuck assembly and pavement markings. If the pedestrian crossing does not have an ENS sign contact SCDOT to determine if one is needed. These will handled case by case.*



## Section 11

### Determining Hump Crossings



*Humped Crossings will need to be reviewed and signage installed when the following criteria are met:*

- a. Crossings with evidence of pavement scarring, dragging and/or severe elevation differences should be considered for measurement evaluation.*
- b. Crossings that have 12 inches of elevation difference shall qualify for installation of W10-5 signs.*

## Section 12

### Determining sight distance for Inspection

*When determining if an obstruction is present on the railroad right of way, use the table below while standing on the stop bar. Measure the sight distance left and right on each approach.*

*Standing on the stop bar looking left and right, this is an example of a RR obstruction*



Train Speed (mph)	Stopping Sight Distance (ft)
10	255
20	509
30	794
40	1,019
50	1,273
60	1,528
70	1,783
80	2,037
90	2,292

Table 9-29. pg. 9-167  
A Policy on Geometric Design of  
Highways and Streets 2018, 7<sup>th</sup> Edition

*When determining if an obstruction along the roadway is blocking the warning devices and if a stop ahead/yield ahead sign is needed, use the table below.*

*While standing at the required distance, observe if the warning devices are visible. If a passive crossing's stop/yield sign is not visible from this distance then a stop ahead/yield ahead sign may be required.*

*Approaching the signal, this is an example of a roadway owner obstruction*



Design Speed (mph)	Stopping Sight Distance (ft)
15	80
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645
70	730
75	820
80	910


Table 9-11. pg. 9-50  
 A Policy on Geometric Design of  
 Highways and Streets 2018, 7<sup>th</sup> Edition

## Section 13


### Packaging attachments for submittal

*Please name and package the PDFs submittal in the following format.*

#### Sketch

 843292C_Sketch 031121	3/31/2020 9:00 AM	Adobe Acrobat D...	101 KB
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#### Photos

 843292C_Photos 031121	3/31/2020 9:00 AM	Adobe Acrobat D...	7,047 KB
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