W-1 to W-5 CURVE & ALIGNMENT WARNING SIGNS

W-1 to W-5 Curve signs are used to warn the motorist of the severity and direction of a change in roadway alignment. The direction of the arrow on all Curve signs indicates either a left or right configuration, as dictated by the roadway. For multiple turn signs (W-3, W-5), the first turn of the roadway shall determine the curve configuration.



W-2

A W-3 REVERSE CURVE sign shall be used where two consecutive curves turn in opposite directions, and are separated by a tangent of less than 120 m.



(60 x60)

If a curve is so severe that the highway reverses or nearly reverses its cardinal direction, a W-4 SWITCHBACK sign should be used.

W-5 WINDING ROAD signs should be used if there is a series of five or more curves, with similar advisory speeds, separated by tangents of less than 120 m. If there are fewer than five curves in succession, one or more REVERSE CURVE signs may be used.



(60X60)

If a W-5 WINDING ROAD sign requires a W-22 ADVISORY SPEED tab sign, the tab shall display the lowest advisory speed for the series of curves. A W-24 ADVISORY DISTANCE tab may also be used where the winding section exceeds 1 km in length.

Curve Signing Warrants shall be used to determine the most appropriate Curve Warning Sign or assembly to use, as per Table 3.1a. Where all previous signing efforts have failed, Curve Warning signs may be placed overhead where an engineering investigation satisfies a combination of two or more of the following criteria:



- the recommended safe speed is 20 km/h below the posted speed limit
- the location is listed as an "Accident Prone Location" by the Senior Highway Safety Engineer with the curve identified as a problem



additional emphasis of the sign is required due to visual clutter

It is recommended that the overhead sign be illuminated for emphasis at night; however, illumination may not be necessary if:

WARNING SIGNS CHAPTER 3

- no power source is available to illuminate the sign
- · sufficient ambient light is available, e.g. from luminaries.

Simultaneous Flashers may be added to overhead signs where the recommended safe speed is 40 km/h or more below the posted speed limit, and/or at locations where the accident frequency is high.

Approval for overhead curve signs must be obtained from the Senior Traffic Engineer prior to installation.

Installation guideline: Condition C, Table 1, (Appendix).

DETERMINATION OF ADVISORY SPEED FOR HORIZONTAL CURVES

The advisory speed at which a curve may be negotiated is determined with the aid of an electronic or mechanical inclinometer. This instrument measures and records the lateral gravitation forces on the vehicle as it is driven through the curve.

The advisory speed (which is determined to the nearest 10 km per hour) may be defined as that speed at which the transverse inclination or "bank" of the testing vehicle, plus centrifugal force, reaches a predetermined degree of inclination. The acceptable degree of inclination varies inversely with the safe speed. See Table 3.1b. The procedure to determine the advisory speed is as follows:

- a) Drive through the section to be tested at, or below any advisory or posted speed limits, and choose a significant landmark(s), such as a cross road name or structure, as a reference for the test location.
- b) Drive through the curve (or series of curves) at the posted advisory speed, or slightly below the posted legal speed as conditions allow. A rule of thumb is to begin the test at a speed 10 km/h below any posted legal or advisory speeds to ensure safety.
- c) Drive through the curve parallel to the centre lane line at a constant rate of speed without "flattening" the curve.
- d) Note the instrument reading for each pass through the curve until a reading within the allowable inclination per Table 3.1b is achieved for the posted legal speed category.



CHAPTER 3 WARNING SIGNS

e) Advisory speeds are established based on which allowable reading was obtained, relative to the posted legal speed for the section.

f) Refer to Table 3.1a for the signing treatment appropriate for each particular situation.

Example: Posted legal speed = 80km/h

Instrument indicates 12° at 80km/h

Instrument indicates 10° at 70km/h

A W-1 sign is warranted since it only required a 10km/h drop in speed to bring the allowable inclination within the limits for the posted speed.

NOTE:

The Vehicle used for testing should be an average-sized "family" vehicle with suspension in good condition and tires with average wear. Winter or deep-tread tires should not be used. Pick-up trucks cargo vans, S.U.V.'s are not acceptable test vehicles.

Testing should be done under normal driving conditions, on bare and dry pavement.

On new sections of road, it is desirable to have the lane markings in place or preliminary marking lines on the pavement before testing.

Curve test results will vary for each direction. Note a curve will not always require signing in both directions.

TABLE 3.1a

Legal Speed	i		ADV	ISORY SPEED (km/h)	eg n	
Limit (km/h)	90	80	70	60	50 .	40	30
100	W-1	W-1, W-22	W-21, W-1, W-22	W-21,W-2, W-	w-21, w-2, W-22	W-21, W-2, W-22	W-21, W-2, W-22
90		VV-1	W-1, W-22	W-21, W-1, W-22	W-21, W-2, W-22	W-21, W-2, W-22	W-21, W-2, W-22
80		31	W-1	W-1, W-22	W-21, W-1, W-22	W-21, W-2, W-22	W-21, W-2, W-22
70			9	W-1	W-1, W-22	W-21, W-1, W-22	W-21, W-2, W-22
. 60			2	4 ² 243	W-1	W-1, W-22	W-21, W-1, W-22

Table 3.1b

Posted Speed Range (km/h)	Max. Allowable Inclination
0-40	14°
41-60	12°
61-limit	10°



LEVEL 1 W1 to W5 only



LEVEL 2 ADD W-22 below curve sign



LEVEL 3 ADD W-21 prior to curve sign



LEVEL 4 ADD W-23 in place of W-21

See individual sign warrants for application

LEVEL 5 OVERHEAD



LEVEL 6 OVERHEAD, ILLUMINATED



LEVEL 7 OVERHEAD WITH FLASHERS



To: All HQ Directors: Operations, Planning and Major Projects

All Regional Directors

All Regional Managers Engineering

All Regional Traffic Engineers

All District Managers Transportation

Subject: Establishing Curve Advisory Speeds

1.0 Purpose

This technical circular outlines the procedure for establishing curve advisory speeds using ball-bank indicator testing and updates the procedures found in the <u>Manual of Standard Traffic Signs and Pavement Markings</u>.

2.0 Background

Ball-bank testing is a widely used and practical method for determining the location and type of curve warning signs and advisory speeds for horizontal curves. Mounted in a moving vehicle, the reading from a ball-bank indicator represents the combined effect of vehicle body roll, superelevation, gravity, and lateral acceleration angle. A manual or electronic ball-bank indicator can be used. The ball-bank indicator used for curve testing should be capable of measuring inclination to at least a1-degree accuracy. A manual ball-bank indicator, as illustrated below, consists of a steel ball in a sealed glass tube where the ball if free to roll except for the dampening force of the liquid in the tube.



An electronic ball-bank indicator usually consists of an electronic accelerometer capable of measuring lateral forces and accelerations experienced by a driver negotiating a horizontal curve.

3.0 Policy

Ball-bank testing shall be conducted by qualified personnel using a test vehicle approved by the Senior Traffic Engineer (STE). For the purpose of this document, a qualified person is one who is knowledgeable in the principles behind ball-bank testing and who can demonstrate curve testing experience through previous work experience or training.

The test vehicle should be a typical mid-sized family sedan, station wagon, or minivan with suspension in good condition and all-season tires with average wear. Pick-up trucks, SUVs built on a truck platform, and cargo vans are not acceptable test vehicles.

Ball-bank testing shall only be performed on paved asphalt or concrete roads under dry conditions. Testing shall not be performed if the roadway is wet, has any degree of snow cover, or may be icy. In addition, testing shall not be performed on gravel or unpaved roads. A permanent painted centreline must be in place and lane lines painted for multilane roads. Testing with either temporary pavement markings or no pavement markings is not acceptable.

Curve advisory speeds shall be determined based on ball-bank testing with consideration of other factors that may impact the choice of advisory speed, such as sight distance, intersections, collision history of the curve, truck volumes, and lighting. Prior to implementation, curve advisory speeds and warning signage recommended by qualified curve testing personnel shall be approved by the Regional Traffic Engineer (RTE) and a copy of the recommendations and ball-bank test results supplied to the District Engineer. For examples of ball-bank testing data sheets, see the attached sample sheets. Alternative presentation of ball-bank results should be approved by the local RTE.

4.0 Scope and Application

The following procedures shall be followed when conducting curve testing and determining curve advisory speeds.

4.1 Prior to Conducting Ball-Bank Testing

To ensure proper operation of the bank indicator and reliable testing results, the following items must be addressed before conducting testing:

- Inflate all tires to a uniform pressure as recommended by the manufacturer.
- 2. Calibrate the test vehicle's odometer or distance measuring instrument.
- 3. Calibrate the test vehicle's speedometer.
- 4. Calibrate and zero the ball-bank indicator.

See the following guidelines for more detail on each of the above actions.

4.1.1 Tire Pressure:

Vehicle tire pressure should be checked at the beginning of each day of testing. Prior to checking tire pressure, the vehicle should be driven 5 to 8 km to warm the tires. Tires shall be uniformly inflated to the manufacturer's recommended level.

4.1.2 Vehicle Odometer:

The vehicle odometer readings may vary depending on tire pressure and should therefore be checked daily and whenever the tire pressure is adjusted. The

distance measured by a vehicle's odometer should be checked for accuracy by comparing its distance measurements against road km markers or a measured distance. The distance that the vehicle odometer is checked against should be at least 3 km. If the distance reading from a vehicle odometer differs from the manually measured distance, then a correlation ratio for distance shall be determined by dividing the actual distance as measured against the odometer distance.

4.1.3 Vehicle Speedometer:

If using a manual ball-bank indicator, the accuracy of the vehicle speedometer should be checked at the beginning of each section of roadway being tested or every 1 to 3 days at a minimum. The accuracy of a vehicle's speedometer can be verified using a radar or laser speed meter, or similar device, or by timing the vehicle as it travels a measured distance at a constant speed.

4.1.4 Ball-Bank Indicator Leveling:

The ball-bank indicator shall be calibrated to zero prior to each day of curve testing, or if the ball-bank indicator results become suspect during the testing process.

A manual ball-bank indicator shall be calibrated by adjusting the indicator to read zero degrees while the vehicle is on a flat level surface and all testing personnel are in the same position in the vehicle as they would be during testing.

Some electronic ball-bank units have an auto leveling or relative zero feature that allows the device to be calibrated to zero when not on a flat level surface. Follow the manufacturer's instructions for calibration of electronic ball-bank indicators with an auto-leveling or relative zero feature.

4.1.5 Ball-Bank Testing Procedure

Ball-bank testing shall be conducted for each direction and each lane on a curve. Test results may differ based on travel direction and lane position.

Tests may be conducted with a driver only, or both a driver and an observer to record the ball bank readings. If conducting testing with a driver only and a manual ball-bank indicator, the driver should use a voice and/or video recorder to document readings and observations while driving.

4.2 Ball-Bank Testing

The following testing procedure should be followed when conducting ball-bank testing.

4.2.1 Testing Preparation

- Ensure the test vehicle and ball-bank indicator equipment have been calibrated and vehicle tire pressure has been checked, and adjusted if necessary, as per the above guidelines including manufacturer's recommendations.
- 2. For each direction, choose a landmark as the starting position that is well in advance of the curve being examined.
- 3. Drive the curve in each direction, noting the distance from the selected starting position to any signs, intersecting roads, or other landmarks relevant to sign placement. Ensure the locations of the start and end of curve are noted.

4.2.2 Testing

- 1. Begin testing at the selected landmark in advance of the curve.
- Centre the test vehicle in the travel lane driving parallel to the roadway centreline. If no shoulder line is painted, offset the vehicle 0.5 to 1.0 m from the centreline.
- 3. Begin first trial run at a speed below the expected maximum advisory speed or existing advisory speed.
- 4. Maintain a constant speed throughout the curve.
- 5. At the end of each pass through the curve review the test results. Assess the maximum inclination recorded based on the speed driven and the table below. If the maximum inclination is lower than the angle given in the speed range table, increase speed by 10 km/h and repeat test run. If the maximum inclination is higher than expected based on the table below and speed driven, decrease speed by 10 km/h and repeat test run.
- Once an appropriate speed for the curve has been determined, continue testing until at least two matching ball-bank readings are achieved for each direction of travel.
- 7. Including testing preparation and testing, each curve should be driven a minimum of 3 times for each lane, in each direction.

4.3 Establishing an Advisory Speed

The following table correlates the ball-bank reading with a corresponding range of advisory speeds. This table replaces Table 3.1b in the <u>Manual of Standard Traffic Signs</u> and Pavement Markings.

Table 1 - Speed and Ball-Bank Inclination

Maximum Inclination	Posted Speed Range (km/h)
8°	110+
10°	70 to 100
12°	50 to 60
14°	0 to 40

Advisory speeds shall be set at a multiple of 10 km/h.

Where there are a series of curves, the advisory speed posted shall be based on the curve with the lowest advisory speed in the series. However, if the difference in advisory speed between curves is greater than 10 km/h, separate warning signs and advisory speeds should be posted for each curve in the series.

Advisory speed signs, and curve and alignment warning signs shall be selected and placed in accordance with the <u>Manual of Standard Traffic Signs and Pavement Markings</u>.

Contact:

Ed Miska, P.Eng., PTOE Chief Traffic, Electrical, Highway Safety and Geometric Engineer

Engineering Branch Tel: (250) 387-7676 Ed.Miska@gov.bc.ca

Dirk Nyland, P.Eng. Chief Engineer

Attachments

Swales, Dave TRAN:EX

From:

Jones, Terry H TRAN:EX

Sent:

Tuesday, May 10, 2011 7:54 AM

To: Cc: XT:MtCon, Rick Kovacvich (EMAIL) TRAN:EX Swales, Dave TRAN:EX; Morris, Danny D TRAN:EX

Subject:

FW: Salmon River/Yankee Flats/Heywood Aremstrong Road Signs

Rick,

Just wondering what the status is on this sign request.

Terry



From: Jones, Terry H TRAN:EX

Sent: Friday, March 11, 2011 2:06 PM

To: XT:MtCon, Rick Kovacvich (EMAIL) TRAN:EX
Cc: Swales, Dave TRAN:EX; Morris, Danny D TRAN:EX

Subject: Salmon River/Yankee Flats/Heywood Aremstrong Road Signs

Rick,

Following a review by the traffic engineer of the existing signage at Glen Emma on the Salmon River Road/Heywood Armstrong Road/Yankee Flats Road intersection we require the following additions/ revisions:

Yankee Flats Road: 1additional R-001 sign (Stop) at the intersection with Salmon River Road (opposite existing stop sign) and 1 – W-011 (Stop ahead) 70m north of the stop sign (west Shoulder).

Salmon River Road southbound:

- 1 additional R-003 sign (60km/h ahead) (opposite existing R-003)
- 1 additional R-004 sign (60 km/h) opposite existing R-004)
- 1 new W-006-u sign(Concealed Road) to replace existing worn out W-006
- 1 new G-008-2A sign (Yankee Flats Road Rt. Heywood-Armstrong Road Lt.) to replace the 2 old G-007 signs

Salmon River Road northbound:

- 1 additional R-003 sign (60km/h ahead) (opposite existing R-003)
- 1 additional R-004 sign (60 km/h) opposite existing R-004)
- 1 new W-006-u sign(Concealed Road) to replace existing worn out W-006
- 1 new G-008-2A sign (Yankee Flats Road Lt. Heywood-Armstrong Road Rt.) to replace the 2 old G-007 signs

Please give me a call if you have any questions.

Terry Jones, Area Manager
Ministry of Transportation and Infrastructure
Okanagan - Shuswap District
Box 100 Station Main
Salmon Arm BC, V1E 4S4
Phone 250 833-3378

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Swales, Dave TRAN:EX

From:

Jones, Terry H TRAN:EX

Sent:

Thursday, September 9, 2010 11:07 AM

To:

XT:MtCon, Rick Kovacvich (EMAIL) TRAN:EX; XT:Stahl, Mark TRAN:IN

Cc:

Morris, Danny D TRAN:EX; Swales, Dave TRAN:EX

Subject:

TRIM: Salmon River Road warning signs

TRIM Dataset:

GN

TRIM Record Number:

D33553710A

TRIM Record URI:

2304423

Rick/Mark,

Graeme Cross, Regional Traffic Engineer and I drove the Salmon River Road yesterday to check the warning signs for missing and/or misplaced signs. I have made notes on the attached "Curve Testing Capture Log 1992" identifying the signs that need to be replaced or altered. Please let me know your schedule to address these deficiencies.

As you know all new signs that you install must comply with the current standards for size and reflectivity for 80 km/h road. Also, as you can see on the attached, several tabs are missing. As advised by the Regional Traffic Engineer, all the signs on that post must be replaced to the current standard so as not to have old and new signs on the same post.

If you have any questions or require additional information please call.



20100909101619.p

df

Terry Jones, Area Manager Ministry of Transportation and Infrastructure Okanagan - Shuswap District Box 100 Station Main Salmon Arm BC, V1E 4S4 Phone 250 833-3378 Fax 250 833-3380

Curve Testing Capture Log 1992
WSL FOR 16 Km5 REMOVE

10.00

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Planning Services Branch, MoTH

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Planning Services Branch, MoTH

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Planning Services Branch, MoTH

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Planning Services Branch, MoTH

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Planning Services Branch, MoTH

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Planning Services Branch, MoTH

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BRITISH
COLUMBIA
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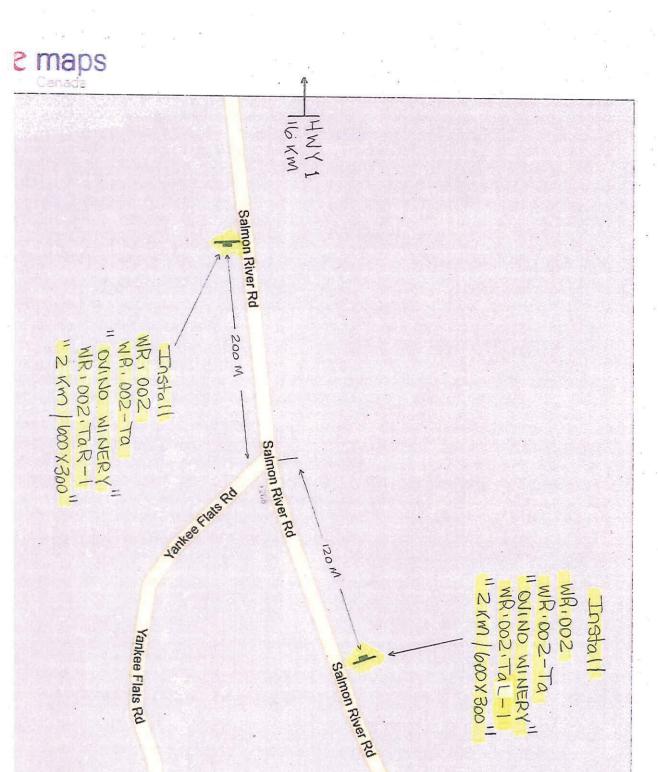
Province of British Columbia Ministry of Transportation OKANAGAN-SHUSWAP DISTRICT

SIGN INSTALLATION **ORDER**

SP 27	DP	
P 26,27	Q	. R
DEL .	Oversize	е

The best riace on Earth YEAR 7 P 26,27 Q R
DATE: 2010/ 06 / 02 AREA: 1307
HIGHWAY NUMBER: 360 HWY NAME: Salmon BIJU BOAD
SIGN TYPE:
S&A P ZXWR-002 (WINLY) C G ZXWR-002-Ta "OVINO WINER
R WR- 002-TaR-1 (ZKM/1000x3
Details: WR · GOZ-Tal-1(ZKM / 600 x 3
Plano Moti to pay for one motall vid
LOCATION: Contractor Use only
Direction of Travel:
Landmark Number:
Offset from Landmark
Side: Left Center Right
Additional Information: preventative plan credits, ovino winery to pay for one install as per move Plase contact
ANNUAL PLAN INFORMATION: Activity: (440) 445 A K L (M) N (P) Q R
Approved Accomplishment: 1 Post 2 Post Delineators 0 Post
Installation Approved: Date: 10//
Installation Completed: Date: 10/ / OKANSHUS # 01 (10/02/02)
' quote for one sign install. OVINO Winuryto
Pay Argo directly.

Page 24 TRA-2011-00139



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Province of British Columbia Ministry of Transportation OKANAGAN-SHUSWAP DISTRICT YEAR 3

SIGN	INSTALLATION
	ORDER

SP 40	,41	DP	
(P)	(Q)	(R)	
DEL	Oı	/ersize	

DATE: 2006/_06_/30	AREA: 13 F/1	DEL Oversize
HIGHWAY NUMBER: 360	HWY NAME: SALMOR	RIVER RD
Details: INSTALL BEHIND	HE STORE ON	Sp I X Other BARRIEN TO BE SALMON RIVER RO
LOCATION:	Contractor Use only	
Direction of Travel:		
Landmark Number:	8.	
Offset from Landmark		
Side: Left	Center	Right
	COORDINATE WITH , WHEN BARRIE,	FALLLAND CREW
ANNUAL PLAN INFORMATION: Approved Accomplishment:	Activity: 440 445 K L 1 Post 2 Post Del	
Installation Approved:		Date: 06/06/30
Installation Completed: OD #01 (04/03/31)		Date: 06//



Province of British Columbia Ministry of Transportation OKANAGAN-SHUSWAP DISTRICT YEAR 2

SIGN	INSTALLATION
	ORDER

SP 23	1	OP ·	
P)	(Q)	(R)	
DEL	Ove	rsize	

DATE: 2005/_ 06 / 08	AREA: 13 F/1	DEL Oversize
HIGHWAY NUMBER: 360	· · · · · · · · · · · · · · · · · · ·	ON RIVER RD
SIGN TYPE:	P	Sp
C R - <u>004 (60)</u>	G W	I X
Al THE NOR	THE END OF SILVER	SITE THE R-004 (50)
LOCATION:	Contractor Use only W-001	D. REPLACE THE W-54 L Z 60 KM TAB FROM UNDER TO L SIGN MORTH OF THE CREEK.
Direction of Travel:		
Landmark Number:	· ·	_
Offset from Landmark		
Side: Le	ft Center	Right
Additional Information:		
ANNUAL PLAN INFORMATION:	Activity: (440) 445 K	LMNPQR
Approved Accomplishme	ent: 1 Post 2 Post	Delineators0 Post
Installation Approved:	Contract of the second	Date: 05/ <u>05</u> / <u>08</u>
Installation Completed: SOD #01 (04/03/31)		Date: 05//

From: Jones, Terry H TRAN:EX

Sent: Tuesday, July 19, 2011 12:18 PM

To: Keefe, Gayle B TRAN:EX Cc: Morris, Danny D TRAN:EX Subject: FOI Request: TRA-2011-00139

Gayle,

An email to Rick following an audit on September 8th, 2010.

Terry Jones, Area Manager Ministry of Transportation and Infrastructure Okanagan - Shuswap District Box 100 Station Main Salmon Arm BC, V1E 4S4 Phone 250 833-3378 Fax 250 833-3380

From: Jones, Terry H TRAN:EX

Sent: Thursday, September 9, 2010 11:07 AM

To: XT:MtCon, Rick Kovacvich (EMAIL) TRAN:EX; XT:Stahl, Mark TRAN:IN

Cc: Morris, Danny D TRAN:EX; Swales, Dave TRAN:EX

Subject: Salmon River Road warning signs

Rick/Mark,

Graeme Cross, Regional Traffic Engineer and I drove the Salmon River Road yesterday to check the warning signs for missing and/or misplaced signs. I have made notes on the attached "Curve Testing Capture Log 1992" identifying the signs that need to be replaced or altered. Please let me know your schedule to address these deficiencies.

As you know all new signs that you install must comply with the current standards for size and reflectivity for 80 km/h road. Also, as you can see on the attached, several tabs are missing. As advised by the Regional Traffic Engineer, all the signs on that post must be replaced to the current standard so as not to have old and new signs on the same post.

If you have any questions or require additional information please call.



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Curve Testing Capture Log 1992

WEL FOR 16 KMS REMOVE

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4N 41 12 NA 15 NA 14 NA Z Z IT NA NA 8 16 NA NA NA NA 15 NA NA NA 8 13 NA NA Ξ 14 NA -업 2 **\$** Ω & œ 9 8 ್ಲ 2 Ħ Ö 2 I ଯ O I DEFLECTION @ PAGE 4 Ξ Ŵ 8 ន LARRY BEDNARZ かか 2 のあるなら REGOUS g[WSL40 for [km]] [W21] SALMON RIVER RD OCT 2/92 BOUND 80TH AVE SW CT #D [WIL60] [W62(2)] [WIL60] [W1L60] [WIR50] [WIR] [W21] OPERATOR: FILES WEST DATE *W3R40 *W51.30 9 S S S 8 S r U 9 S ដូ *WIL ជ្ជ ជ ರ ೮ 19.0 19.3 18.6 17.6 17.5 19.5 19.4 8.8 18.4 17.9 19.8 19.6 19.2 18.9 18.7 18.5 18.3 18.2 18.1 18.0 17.8 17.7 19.9 19.7 19.1 2 ROUTE 80 km/h B 19.9 0.2 0.5 0.7 0.8 1.0 1.1 1.3 1.5 1.6 1.8 22 22 23 24 25 0.0 Ē 18 NA NA 8 12 NA 13 엃 15 NA NA 2 15 NA II NA S NA NA NA NA NA 13 NA II NA 60 O 8 ü 0 DRIVEWAY(3233 SALMON RIVER RD) 8 ∞ 7 FROM DRIVEWAY(3233 SALMON RIVER RD) 2 8 8 2 5 S DEFLECTION @ Posted Speed Section Length 7 8 ន 5 OKANAGAN-SHUSWAP 2 3/2/8 Σ WSR40 for 1km] = Existing Sign [] = Recommendation BOUND [W62(2)] LKI SEG. 1126 [WIR60] [WIR60] [W1R60] [W11.50] [W21] [WIL] [W21] Comments: DISTRICT EAST W3R40 d **x** 5 5 6 6 6 6 6 6 6 6 CRe រូ រូ WIR Ç ğ 8 ម

Planning Services Branch, MoTH

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Planning Services Branch, MoTH

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Planning Services Branch, MoTH

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Planning Services Branch, MoTH

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Planning Services Branch, MoTH

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Planning Services Branch, MoTH

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Planning Services Branch, MoTH

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Planning Services Branch, MoTH

Not Responsive

From: Rick Kovacvich [mailto:rkovacvich@argoroads.ca]

Sent: Thursday, October 21, 2010 11:14 AM

To: Jones, Terry H TRAN:EX

Cc: Morris, Danny D TRAN:EX; Swales, Dave TRAN:EX **Subject:** RE: Salmon River Road warning signs

Good Morning Terry,

Yes the curve signs are within the posted 50km/hr zone. I will have Dan install the tabs and pass on your appreciation.

Rick

From: Jones, Terry H TRAN:EX [mailto:Terry.Jones@gov.bc.ca]

Sent: Thursday, October 21, 2010 10:38 AM

To: Rick Kovacvich

Cc: Morris, Danny D TRAN:EX; Swales, Dave TRAN:EX **Subject:** RE: Salmon River Road warning signs

Rick,

Was this a long 50 km/h stretch? If so please install the 60km tabs as specified in the curve test.

I also noticed the distances were out a little and had to keep correcting to the closest cross street. I thought it was my odometer, sorry for not letting you know.

Please let your sign man know that it's looking much better out there following his great work.

Terry Jones, Area Manager

Ministry of Transportation and Infrastructure Okanagan - Shuswap District Box 100 Station Main Salmon Arm BC, V1E 4S4 Phone 250 833-3378 Fax 250 833-3380

From: Rick Kovacvich [mailto:rkovacvich@argoroads.ca]

Sent: Friday, October 15, 2010 11:37 AM

To: Jones, Terry H TRAN:EX

Cc: Morris, Danny D TRAN:EX; Swales, Dave TRAN:EX **Subject:** RE: Salmon River Road warning signs

Good Morning Terry,

Dan tells me he should be finished the signs on Salmon River Rd. He said that some of the curve signs you wanted 60km tabs on are within 50km speed zones. Do you still want the 60km tabs on the signs. He also said that there was a problem with your distances and you were out by about 500 meters for part of your survey.

Thanks, Rick

----Original Message-----

From: Jones, Terry H TRAN:EX [mailto:Terry.Jones@gov.bc.ca]

Sent: Thursday, September 09, 2010 11:07 AM

To: Rick Kovacvich; Mark Stahl

Cc: Morris, Danny D TRAN:EX; Swales, Dave TRAN:EX

Subject: Salmon River Road warning signs

Rick/Mark,

Graeme Cross, Regional Traffic Engineer and I drove the Salmon River Road yesterday to check the warning signs for missing and/or misplaced signs. I have made notes on the attached "Curve Testing Capture Log 1992" identifying the signs that need to be replaced or altered. Please let me know your schedule to address these deficiencies.

As you know all new signs that you install must comply with the current standards for size and reflectivity for 80 km/h road. Also, as you can see on the attached, several tabs are missing. As advised by the Regional Traffic Engineer, all the signs on that post must be replaced to the current standard so as not to have old and new signs on the same post.

If you have any questions or require additional information please call.

<<20100909101619.pdf>>

Terry Jones, Area Manager

Ministry of Transportation and Infrastructure

Okanagan - Shuswap District

Box 100 Station Main
Salmon Arm BC, V1E 4S4
Phone 250 833-3378
Fax 250 833-3380
This email has been scanned by the MessageLabs Email Security System. For more information please visit http://www.messagelabs.com/email
Information from ESET NOD32 Antivirus, version of virus signature database 5535 (20101015)
The message was checked by ESET NOD32 Antivirus.
http://www.eset.com
This email has been scanned by the MessageLabs Email Security System. For more information please visit http://www.messagelabs.com/email

CHRIS Web

HRP Landmark Report Sorted by Highway Number

Page 1 of 1 2011-07-18 10:30 AM IDIR\DSWALES

Service Area: 13 - Okanagan-Shuswap

AMA:

13-F - Area F

Sub Area:

13-F-I - Falkland

				nce from		2002 200 PM2
	8	Road Class	Start	Previous	RFI Dir	RFI Length
13-F-I-	00360 Salmon River Road				N	22.506
760000	HWY 97/SAL. R. RD.		0.000	0.000		11
760010	HEYWD-ARM/YANKEE FLT	3B	2.061	2.061		
760025	KAISER RD. 1066	3B	7.429	5.368		
760040	KAISER BR. #6077	3B	7.512	0.083		
760050	SPA CR. RD.#362	3B	10.960	3.448		
760060	FORBES RD.	3B	11.485	0.525		
760070	SALLENBACH RD.	3B	13.597	2.112		
760080	STONEY CRK.	3B	14.034	0.437	10	12
760090	MOORE BRIDGE #6079	3B	14.870	0.836		
760100	CAMPBELL RD.#3	3B	15.184	0.314		9
760110	BROWN RD.#357	3B	15.652	0.468	9	
760120	YANKEE FLATS RD.#363	3B	15.810	0.158		1
760125	SCHOOL ACCESS RT	3B	17.092	1.282		
760130	HAINES RD.#358	3B	17.322	0.230	=	
760140	HORNSBERGER RD.#367	3B	17.468	0.146	-	9
760150	SILVER CRK. M/P#8508	3B	17.546	0.078	;	e e
76.0160	EDES RD.#356/AGAR564	3B	18.970	1.424		
760170	FOSTER BR.#6081	3B	19.315	0.345	2 .	
760180	JOHNSTON RD.#359	3B	20.686	1.371		
760190	BRANCHFLWR#356/M.BDY	3B	22.506	1.820		-

Inventory Item Location Report Sorted by Highway Number CHRIS Web

Page 13 of 17

2011-07-18 10:31 AM

Service Area: Okanagan Shuswap SA

Sub Area: 13-F - Area F

13-F-I - Falkland

RFI Highway: 13-F-I-00360 Salmon River Road

RFI Length: 22.506

RFI Direction: N

Inventory			ANNA CONTRACTOR OF THE PROPERTY OF THE PROPERT	Chainage	age		Modification
Item	Primary Key	48X	ACTIDUCES	Start	End	непдсп	13
SIGN	1916184	LS	W-003-RU REVERSE CURVE RIGHT ARROW North Telspar 1 No	12.520	12.520		2010-06-22
SIGN	1916185	ST	W-022-U () km/h tab North Other 0 No ADVISORY SPEED 30KM/H	12.520	12.520		2010-06-22
SIGN	1916187	LS	W-021 SLOW North Telspar 1 No	12.665	12.665		2010-06-22
SIGN	1916162	RS	I-034-5 Entering (Jurisdiction Name) Unincorporated South Wood 1 No SILVERCREEK	13.229	13.229		2010-06-22
SIGN	1916172	ST	W-005-LU WINDING ROAD LEFT ARROW North Telspar 1 No	13.293	13.293		2010-06-22
SIGN	1916171	RS	W-022-U \mid () km/h tab \mid North \mid Other \mid 0 \mid No \mid \mid ADVISORY SPEED 40KM/H	13.293	13.293		2010-06-22
SIGN	1916170	RS	W-024-U For () km tab North Other 0 No 2 KM	13.293	13.293		2010-06-22
SIGN	1916204	RS	W-001-LU CURVE LEFT ARROW North Telspar 1 No	13.379	13.379		2010-06-22
SIGN	1916203	RS .	W-022-U () km/h tab North Other 0 No ADVISORY SPEED 60KM/H	13.379	13.379		2010-06-22
SIGN	1916164	ST	W-021 SLOW North Telspar 1 No	13.418	13.418	2 13 2	2010-06-22
SIGN	1916285	RS	W-022-U () km/h tab South Wood 1 No ADVISORY SPEED 30KM/H	14.644	14.644		2010-06-22
SIGN	1916286	RS	W-002-LU SHARP CURVE LEFT ARROW South Wood 1 No	14.644	14.644		2010-06-22
SIGN	1916290	RS	W-041-1 Slippery Surface symbol South Wood 1 No	14.742	14.742		2010-06-22

CHRIS Web

Inventory Item Location Report Sorted by Highway Number

Page 14 of 17 2011-07-18 10:31 AM

Service Area: Okanagan Shuswap

SA

AMA:

Sub Area: 13-F-I - Falkland

13-F - Area F

RFI Highway: 13-F-I-00360 Salmon River Road

RFI Length: 22.506

RFI Direction: N

Inventory Item	Primary Key	XSP	Atributes	<u>Chainage</u> <u>Start</u>	End	Length	Modification
SIGN	1916289	RS	W-054-R Hazard marker - right South Wood 1 No	14.805	14.805		2010-06-22
SIGN	1916283	LS	W-054-L Hazard marker - left South Wood 1 No	14.853	14.853	I NA	2010-06-22
SIGN	1916282	RS	W-054-R Hazard marker - right South Telspar 1 No	14.853	14.853	= 0	2010-06-22
SIGN	1916169	RS	I-003 Landmark (Name) marker North Telspar 1 No SALMON R	14.870	14.870	**	2010-06-22
SIGN	1916168	RS	I-003 Landmark (Name) marker South Telspar 1 No	14.870	14.870	***	2010-06-22
SIGN	1916201	ST	W-054-R Hazard marker - right North Wood 1 No	14.890	14.890	0	2010-06-22
SIGN	1916200	RS	W-054-L Hazard marker - left North Telspar 1 No	14.890	14.890		2010-06-22
SIGN	1916194	RS	W-041-1 Slippery Surface symbol North Wood 1 No	14.983	14.983	e e	2010-06-22
SIGN	1916182	LS	W-002-RU SHARP CURVE RIGHT ARROW North Wood 1 No	15.044	15.044	:	2010-06-22
SIGN	1916181	LS	W-022-U () km/h tab North Wood 1 No ADVISORY SPEED 30KM/H	15.044	15.044	E 3	2010-06-22
SIGN	1916369	ST	W-001-LU CURVE LEFT ARROW North Telspax 1 No	15.334	15.334	55	2010-06-22
SIGN	1916293	LS	W-007-1U Side-road symbol - left/right North No Post 0 No	16.010	16.010		2010-06-22
SIGN	1916292	LS	G-008-1A Single (Street Name) Ahead - Side Mount North Telspar 1 No	16.010	16.010	¹² P3	2010-06-22
SIGN	1916291	RS	R-003 POSTED SPEED () km/h AHEAD ARROW South Telspar	17.023	17.023		2010-06-22

C) - PRD

Inventory on a Route Report - By Offset

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19-JUL-2011

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in Find	Offset	0	0	.02	.02	.113	.174	.174	0	.15	0	0	κi	<i>c</i> i	1.213	0	.12	.151	.151	0 0
Ref Begin	Offset	0	0	.02	.02	.113	.174	.174	0	.15	0	0	κi	<i>c</i> i	1.213	0	.12	.151	.151	0 0
Reference Item	XSP Description	1916413 / /Z /760090 /MOORE BRIDGE #6079 / /	1916413 / /Z /760090 /MOORE BRIDGE #6079 / /	1916413 / /Z /760090 /MOORE BRIDGE #6079 / /	1916413 / /Z /760090 /MOORE BRIDGE #6079 / /	1916413 / /Z /760090 /MOORE BRIDGE #6079 / /	1916413 / /Z /760090 /MOORE BRIDGE #6079 / /	1916413 / /Z /760090 /MOORE BRIDGE #6079 / /	1916412 / /Z /760100 /CAMPBELL RD.#3 / /	1916412 / /Z /760100 /CAMPBELL RD.#3 / /	1916405 / /Z /760110 /BROWN RD.#357 / /	1916404 / /Z /760120 /YANKEE FLATS RD.#363 / /	1916404 / /Z /760120 /YANKEF FLATS RD.#363 / /	1916404 / /Z /760120 /YANKEF FLATS RD:#363 / /	1916404 / /Z /760120 /YANKE FLATS RD.#363 / /	1916411 / /Z /760125 /SCHOOL ACCESS RT /	1916411 / /Z /760125 /SCHOOL ACCESS RT / /	1916411 / /Z /760125 /SCHOOL ACCESS RT /	1916411 / /Z /760125 /SCHOOL ACCESS RT /	1916401 / /Z /760130 /HAINES RD.#358 / / 1916410 / /Z /760140 /HORNSBERGER RD.#367 / /
*	Description XS	1916168 / /L003 /S /T /1 /N / / / /	1916169 / /L003 /N /T /1 /N / / /SALMON R / /	1916200 / /W-054-L /N /T /1 /N / / / /	1916201 / W-054-R/N /W /1 /N / / / /	1916194 / /W-041-1 /N /W /1 /N / / / /	1916181 / W-022-U /N /W /1 /N / / /ADVISORY SPEED 30KWH / /	1916182 / W-002-RU /N // // /	1916412 / /Z /760100 /CAMPBELL RD.#3 / /	1916369 / W-001-LU /N /T /1 /N / / / /	1916405 / /Z/760110 /BROWN RD.#357 / /	1916404 / /Z /760120 /YANKEE FLATS RD:#363 / /	1916293 / MV-007-1U /N /N /0 /N / / / /	1916292 / /G-008-1A /N /T /1 /N / / / /	1916291 / /R-003 /S /T /1 /N / / /MAX 50KWH AHEAD / /	1916411 / /Z /760125 /SCHOOL ACCESS RT / /	1916284 / /R-004 /S /T /1 /N / / /MAX 80KW/H / /	1916287 / /PS-001-TCX /S /X /0 /N / / / /	1916288 / /PS-001 /S /T /1 /N / / / /	1916401 / /Z/760130 /HAINES RD.#358 / / 1916410 / /Z/760140 /HORNSBERGER RD.#367 / /
Asset		SIGN	SIGN	SIGN	SIGN	SIGN	SIGN	SIGN	HRP	SIGN	HRP	HRP	SIGN	SIGN	SIGN	HRP	SIGN	SIGN	SIGN	HRP HRP
T L	Offset XSP	14.87 RS	14.87 RS	14.89 RS	14.89 LS	14.983 RS	15.044 LS	15.044 LS	15.184	15.334 LS	15.652	15.81	16.01 LS	16.01 LS	17.023 RS	17.092	17.212 LS	17.243 RS	17.243 RS	17.322 17.468
Start	Offset	14.87	14.87	14.89	14.89	14.983	15.044	15.044	15.184	15.334	15.652	15.81	16.01	16.01	17.023	17.092	17.212	17.243	17.243	17.322 17.468

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