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Co	ontact List	t for Bridge Ins	spections - Alberta Tra	nsportation
First Name	Second Name	Phone Number	Title	Area
Alan	Saunders	(780)618-4379	Bridge Manager	Peace Region
Brent	Herrick	(780)305-2419	Acting Bridge Manager	North Central Region
Donald	Saunders	(403)340-5579	Bridge Manager	Central Region
Ralph	Witten	(403)382-4061	Bridge Manager	Southern Region
Bryan	Wai	(780)415-1079	Bridge Management Engineer	Province
Matt	Spratlin	(780)644-5413	Bridge Preservation Specialist	Province



BRIDGE INSPECTION AND MAINTENANCE (BIM) SYSTEM INSPECTOR CERTIFICATION PROCESS

Background

The integrity and effectiveness of the BIM system depends on the quality of inspection provided by the bridge inspector. All inspections entered into the BIM system must be performed and reviewed by certified bridge inspectors. Alberta Transportation maintains a comprehensive bridge inspector certification process that must be successfully completed by each candidate prior to becoming certified. There are two classes of bridge inspectors (Class A and Class B). The roles and qualification requirements for each inspector class are outlined in Alberta Transportation's BIM Inspection Manual.

This document details the requirements for obtaining and maintaining inspector certification status and supersedes any requirements detailed in the BIM Inspection Manual.

Class B Certification Process

To become certified as a Class B bridge inspector, candidates must meet the following requirements:

Education

 High School Diploma or an equivalent combination of education and experience acceptable to Alberta Transportation.

Bridge Inspection Training

Class B bridge inspection training must be completed in the following stages:

- Stage 1: Alberta Transportation Class B BIM Training Course (5 day course)
 Minimum 70% average score required
- Stage 2: Alberta Transportation Class B BIM Field Training Course (3 day course) or Alberta Transportation approved equivalent
 - Field trainer recommendation required



- Stage 3: Mentorship program details of the mentorship program shall be as follows:
 - Candidates shall select a mentor that is a Class A Inspector; or a Class B inspector that has been certified for a minimum of 9 years; or a Class B inspector that has completed greater than 150 inspections over a 6 year period;
 - Candidates that have attended the Alberta Transportation Class B Field Training Course shall complete a minimum of 25 training inspections under the guidance of a mentor. The training inspections shall be completed within two years of completion of the Class B Field Training Course. For every year beyond the two year period an additional 10 training inspections will be required;
 - Candidates that have completed an Alberta Transportation approved equivalent Class B Field Training Course shall complete a minimum of 35 training inspections under the guidance of a mentor. The training inspections shall be completed within two years of completion of the Alberta Transportation approved equivalent Class B Field Training Course. For every year beyond the two year period an additional 10 training inspections will be required;;
 - Selection of all training inspections shall be reviewed and recommended by the mentor. A minimum of 75% of the selected sites for training inspections shall have a maximum structural condition rating of 45% and superstructure/barrel elements must be accessible;
 - To commence the mentorship program a minimum of 5 different types of bridge structures shall be inspected by the candidate and mentor together. The initial 5 inspections completed with the mentor can be included in the total number sites of the mentorship program;
 - Training inspections shall be completed in lots. Lots shall be no greater than 7 sites. Each lot shall be thoroughly reviewed by the mentor and discussed in detail with the candidate prior to commencing with subsequent lots. Mentor inspection review comments shall be documented on inspection forms (including photo reports) and all communication/feedback with the trainee recorded. The trainee may at any time during the mentorship program submit received mentorship documentation to the bridge preservation specialist to confirm its acceptability;



- The number and type of inspection should be consistent with recommendations received from Stage 2 of the certification process, but may be increased if required by the mentor. At a minimum, training inspections shall be completed in the following categories and quantities:
 - Timber Bridges (TT) 2 5;
 - Culverts (CUL 1, CULM, CULE) 10- 15;
 (A variety of culvert types is required- i.e. BP/CP, FP/CSP, MP/CSP, RP/SPCSP, SPE/ SPCSP, SP/SPCSP etc.);
 - Standard Precast Bridges (PCS) 10 15;
 (A variety concrete girder bridges with the majority having timber substructures is required- HC, PG, VS, PE, SL etc.).
- Letter of recommendation from mentor stating trainee has completed a mentorship program meeting the above requirements and in his/her opinion is ready to write the certification exam and test sites & electronic PDF scans of original inspection reports with review comments and all other communication/ feedback in PDF format. The submission of inspection reports, including photos, shall be submitted in individual PDF files for each lot as well as an excel spreadsheet summarizing the lot number, BF, span type, structural condition rating, inspection date, mentor review date, mentor comments on acceptability feedback /discussion date).
- Stage 4*: Class B certification exam
 - Minimum 75% score required.
- Stage 5*: Test Inspections three test inspections completed in one day
 - Scored for acceptability by a Alberta Transportation Class A inspector

^{*} Note: Stage 4 and 5 may be completed in reverse order.



Class A Certification Process

To become certified as a Class A bridge inspector, candidates must meet the following requirements:

Education

 Civil Engineering Degree, or Civil Engineering Technical Diploma plus 2 years bridge related experience, or an equivalent combination of education and experience acceptable to Alberta Transportation.

Bridge Inspection Training

All Class A candidates must have valid Class B certification and completed a minimum of 75 inspections as a Class B inspector. Class A bridge inspection training must be completed in the following stages:

- Stage 1 : Alberta Transportation Class A BIM Training Course (5 day course)
 Minimum 70% average score required
- Stage 2: Mentorship program details of the mentorship program shall be as follows:
 - Candidates shall select a mentor that has been certified as a Class A Inspector for 6 years or more;
 - Candidates shall complete a minimum of 45 training inspections under the guidance of a mentor;
 - Selection of all training inspections shall be reviewed and recommended by the mentor. A minimum of 60% of the 45 selected sites Selected sites for training inspections shall have a maximum structural condition rating of 45% and superstructure elements must be accessible;
 - To commence the mentorship program a minimum of 10 different types of bridge structures shall be inspected by the candidate and mentor together. The initial 10 inspections completed with the mentor can be included in the total number sites of the mentorship program;
 - Training inspections shall be completed in lots. Lots shall be no greater than 7 sites. Each lot shall be thoroughly reviewed by the mentor and discussed in detail with the candidate prior to commencing with subsequent lots. Mentor inspection review comments shall be documented on inspection forms (including photo reports) and all communication/feedback with the trainee



recorded. The trainee may at any time during the mentorship program submit received mentorship documentation to the bridge preservation specialist to confirm its acceptability;

- At a minimum, training inspections shall be completed in the following categories and quantities: :
 - Steel Truss Bridges (DT, TH, PT) 5- 10;
 (One of each type as a minimum);
 - Steel Girder Bridges (SG) 1 0 20;
 (A variety of types is required- i.e. FR, RB, WG, RG, etc.);
 - Prestressed Concrete Girder Bridges (PSR) 1 0 20;
 (A variety of types is required- i.e. NU, DBT, CBT, PO, FC, RD, etc.);
 - Cast-in-place Concrete Girder Bridges (CON) 2 5;
- Letter of recommendation from mentor stating trainee has completed a mentorship program meeting the above requirements and in his/her opinion is ready to write the certification exam and test sites & electronic PDF scans of original inspection reports with review comments and all other communication/ feedback in PDF format. The submission of inspection reports, including photos, shall be submitted in individual PDF files for each lot as well as an excel spreadsheet summarizing the lot number, BF, span type, structural condition rating, inspection date, mentor review date, mentor comments on acceptability feedback/discussion date).
- Stage 3**: Class A certification exam
 - Minimum 75% score required.
- Stage 4**: Test Inspections three test inspections completed in one day
 - Scored for acceptability by a Alberta Transportation Class A inspector

Class A and B candidates will be certified once all requirements have been met. Certification will remain valid until the next certification renewal date. Candidates that fail any stage have the opportunity to re-try that stage. A second failure at a given stage will require the process to be re-started at Stage 1.

^{**} Note: Stage 3 and 4 may be completed in reverse order.



Re-Certification Process

Re-certification requires active involvement in the BIM program and acceptable performance. The status of all certified inspectors will be reviewed by Alberta Transportation personnel (Bridge Preservation Specialist and Bridge Management Engineer in Technical Standards Branch) every 3 years. Decisions on re-certification will be rendered and activated prior to the certification renewal date.

The Bridge Engineering Section of Alberta Transportation's Technical Standards Branch Bridge (TSB) will administer the re-certification process with assistance from regional bridge staff. Inspectors that clearly meet re-certification requirements will be re-certified until the next renewal date following formal approval by the Director of Bridge Engineering. Inspectors will be notified by e-mail of re-certification results. Hard-copy certificates will be provided by Alberta Transportation, if requested.

Inspectors that do not meet re-certification criteria may be asked if they intend to maintain their certification. If so, a panel comprised of three members of Alberta Transportation's BIM committee will be convened to review the inspector's status and render recommendation on certification renewal to the Director of Bridge Engineering. If re-certification is approved, the candidate will be informed by e-mail of re-certification results. Hard-copy certificates will be provided from by Alberta Transportation, if requested. If certification is not granted, a remedial plan to renew certification may be developed by the panel. A typical remedial plan would consist of a completion of a written re-certification exam (minimum 75% score required) and 5 test inspections. The test inspections would be reviewed by an Alberta Transportation certified Class A inspector for acceptance. Additional training may also be required if deemed necessary by the panel.

Re-certification criteria for Class A and Class B bridge inspectors

In order to be re-certified, inspectors must satisfy one of the following:

- Performed a minimum average rate of 2 BIM inspections (Level 1 or Level 2) per month during previous 3 year period. Class A inspectors must have completed 50% of the inspections for major bridges; or
- Performed a minimum average rate of 1 BIM inspection (Level 1 or Level 2) per month during previous 3 year period and have been active in the management, design, or construction of bridges. Class A inspectors must have completed 50% of the inspections for major bridges; or
- Acted as a reviewer for a minimum average rate of 2.5 inspections per month during the previous 3 year period and have been active in the management, design, or construction of bridges; or



 Acted as Department reviewer for a minimum average rate of 5 inspections per month during the previous 3 year period and have been active in the management, design, or construction of bridges.

In addition, to be re-certified, inspectors must have:

- Attended any formal BIM training sessions deemed mandatory by Alberta Transportation; and
- Completed any improvement plans developed by Alberta Transportation based on observed performance issues.

This process is effective as of February 17, 2016

Dave Besuyen, P. Eng.

Bridge Preservation Specialist Bridge Engineering, Technical Standards Branch Alberta Transportation Government of Alberta





BIM Advisory Bulletin #2 - January 08, 2015

Section 2.5 of Bridge Inspection and Maintenance System - Inspection Manual (Version 3.1 - March 2008) will be replaced in its entirety with the following effective April 1, 2015.

2.5 Frequency of Bridge Inspection

Bridge structures are to be inspected in accordance with the following intervals to ensure an appropriate level of safety and to assist in effective maintenance and management of the bridge inventory:

- 1. Bridge structures located on roadways that are designated as Level 1 or Level 2 in accordance with the Provincial Highway Service Classification 21 months.
- 2. Bridge structures located on roadways that are designated as Level 3 or Level 4 in accordance with the Provincial Highway Service Classification 39 months.
- 3. Major Bridges on Local Roads 39 months.
- 4. Standard Bridges and Culverts on Local Roads 57 months.
- 5. All new bridge structures as part of final construction completion.
- All bridge structures are to be inspected after significant maintenance (the work affects superstructure or substructure general ratings) or rehabilitation has been completed.

It is intended that these cycles will provide the benefit of inspection under different seasonal conditions. In special circumstances some structures may be exposed to unique conditions or only accessible at specific times of the year (i.e. park roads with summer only access). In special circumstances the Department will modify inspection intervals to suit site specific requirements.

Grade separation and ramp structures that have over and under passing roadways with different Provincial Highway Service Classifications will be assigned the inspection frequency associated with the higher roadway classification/more frequent inspection interval.

The inspector may recommend a shorter or modified inspection interval depending on the age, traffic characteristics, known deficiencies, etc. of the bridge. The Department will review and either accept or reject the recommendation.

If you have any questions on this matter, please contact the Bridge Preservation Specialist.

Des Williamson Director, Bridge Engineering Technical Standards Branch

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Deck Drainage 7 7 Drains Clogged (Y/N) No Curbs/Median 7 6 Minw 42 respect (Curb Type Standard) Scaling (Percent Area) 0 Bridge Rail (Type SBRIDGE SOLID BEAM (EX. TIMBER RAILS)) Bridge Rail Posts 7 7 (Type : POST STEEL; POST STEEL) Bridge Rail/Posts Coating (Type : PAINT) Sidewalk X X Girder Detail Ratings N (count) 1 (count) 2 (count) 3 (count) Last Now 0 0 2 Girders 4 3 G2 pas wide cracks and spall in AZ. G1, G3, G4 & G6 wide G2 Last Complete Inspection Date 15-dul-2009 2014 Cracking (Y/N) Yes G2 and G3 have spalls or wide Cracking (Y/N) Yes G6, G1 have wide cracks in search careful (Y/N) Spalling (Percent Area) 2 Lilt or Connector Pocket Grouted (Y/N) No Span Alignment Problems Vertical (Y/N) No			No	1		1	7 194	70%
Drains Clogged (Y/N) No Curbs/Median 7 6 Mind 42 (1446 5) Scaling (Percent Area) 0 Bridge Rail (Type : BRIDGE SOLID BEAM (EX. TIMBER RAILS)) Bridge Rail Posts 7 7 (Type : POST STEEL; POST STEEL) Bridge Rail/Posts Coating 4 3 Peeling at timber rail and posts. (Type : PAINT) Sidewalk X X Girder Detail Ratings N (count) 1 (count) 2 (count) 3 (count) Last Now 0 0 2 Girders 4 7 G2 pas wide cracks and spall in AZ. G1, G3, G4 & G6 wide Gas AZ 017 (eg only. Cracking (Y/N) Yes G2 and G3 have spalls or wide cracking (Y/N) Yes G3 and G3 have spalls or wide Grouted (Y/N) Spalling (Percent Area) 2 In a family Connector Pocket Grouted (Y/N) No G6, G1 have wide cracks in sand carlow (Y/N) No G5 (Number Of Girders 8) Span Alignment Problems Vertical (Y/N) No						7	7	
Curb Type: Standard) Scaling (Percent Area) Bridge Rail (Type: BRIDGE SOLID BEAM (EX. TIMBER RAILS)) Bridge Rail Posts To (Type: POST STEEL; POST STEEL) Bridge Rail/Posts Coating (Type: PAINT) Sidewalk X X Girder Detail Ratings N (count) Last Now Girders Last Complete Inspection Date Cracking (Y/N) Spalling (Percent Area) Lift or Connector Pocket Grouted (Y/N) (Number Of Girders: 8) Span Alignment Problems Vertical (Y/N) No Caracked at NE but still functional A Coacked at NE but still functional In Manual Cracked A Coacked at New stall functional In Manual Cracked A Coacked at New stall functi		d (Y/N)	No	1			dz.	
Curb Type : Standard Scaling (Percent Area) 0 5 3 5 6 Grace Rail (Type : BRIDGE SOLID BEAM (EX. TIMBER RAILS)) 8 1 Bridge Rail Posts 7 7 (Type : POST STEEL; POST STEEL) 8 1 Bridge Rail/Posts Coating (Type : PAINT) 8 1 Girder Detail Ratings 1 1 Last Now 0 2 Girders 4 3 G2-bas wide cracks and spall in AZ. G1, G3, G4-8 G6 wide Gas AZ of Flag only. Cracking (Y/N) Yes G2-bas wide cracks and spall in AZ. G1, G3, G4-8 G6 wide Gas AZ of Flag only. Garaged at NE but still functional floor for the spall in AZ. G1, G3, G4-8 G6 wide Gas AZ of Flag only. G2-bas wide cracks and spall in AZ. G1, G3, G4-8 G6 wide Gas AZ of Flag only. G3-bas wide cracks and spall in AZ. G1, G3, G4-8 G6 wide Gas AZ of Flag only. G3-bas wide cracks and spall in AZ. G1, G3, G4-8 G6 wide Gas AZ of Flag only. G3-bas wide cracks and spall in AZ. G1, G3, G4-8 G6 wide Gas AZ of Flag only. G3-bas wide cracks and spall in AZ. G1, G3, G4-8 G6 wide Gas AZ of Flag only. G3-bas wide cracks and spall in AZ. G1, G3, G4-8 G6 wide Gas AZ of Flag only. G3-bas wide cracks and spall in AZ. G1, G3, G4-8 G6 wide Gas AZ of Flag only. G3-bas wide cracks and spall in AZ. G1, G3, G4-8 G6 wide Gas AZ of Flag only. G3-bas wide cracks and spall in AZ. G1, G3, G4-8 G6 wide Gas AZ of Flag only. G3-bas wide cracks and spall in AZ. G1, G3, G4-8 G6 wide Gas AZ of Flag only. G3-bas wide cracks and spall in AZ. G1, G3, G4-8 G6 wide Gas AZ of Flag only. G4-bas wide cracks and spall in AZ. G1, G3, G4-8 G6 wide Gas AZ of Flag only. G4-bas wide cracks and spall in AZ. G1, G3, G4-8 G6 wide Gas AZ of Flag only. G4-bas wide cracks and spall in AZ. G1, G3, G4-8 G6 wide Gas AZ of Flag only. G4-bas wide cracks and spall in AZ. G1, G3, G4-8 G6 wide Gas AZ of Flag only. G4-bas wide cracks and spall in AZ. G1, G3, G4-8 G6 wide Gas AZ of Flag only. G5-bas wide cracks and spall in AZ. G1, G3, G4-8 G6 wide Gas AZ of Flag only. G5-bas wide cracks and Spall in AZ. G1, G3, G4-8 G6 wid						7	1 /	Mich 101005
Scaling (Percent Area) Bridge Rail (Type : BRIDGE SOLID BEAM (EX. TIMBER RAILS)) Bridge Rail Posts (Type : POST STEEL; POST STEEL) Bridge Rail/Posts Coating (Type : PAINT) Sidewalk X Girder Detail Ratings N (count) 1 (count) 2 (count) 3 (count) Last Now Cirders Last Complete Inspection Date 15-dul-2003 2014 Cracking (Y/N) Spalling (Percent Area) Lift or Connector Pocket Grouted (Y/N) (Number Of Girders : 8) Span Alignment Problems Vertical (Y/N) No		'hyadayd'	-			227	0	2511 me Scripes
Bridge Rail (Type : BRIDGE SOLID BEAM (EX. TIMBER RAILS)) Bridge Rail Posts (Type : POST STEEL; POST STEEL) Bridge Rail/Posts Coating (Type : PAINT) Sidewalk X Girder Detail Ratings N (count) Last Now Desiring at timber rail and posts. (Type : PAINT) Sidewalk X Girder Detail Ratings N (count) Last Now Desiring at timber rail and posts. A Captal wide creaks and spall in AZ. G1, G3, G4 & G6 wide Galler Contacting (Y/N) Cracking (Y/N) Spalling (Percent Area) Litt or Connector Pocket Grouted (Y/N) (Number Of Girders : 8) Span Alignment Problems Vertical (Y/N) No		mann - mannament and		_		144		
(Type: BRIDGE SOLID BEAM (EX. TIMBER RAILS)) Bridge Rail Posts (Type: POST STEEL; POST STEEL) Bridge Rail/Posts Coating (Type: PAINT) Sidewalk X Girder Detail Ratings N (count) 1 (count) 2 (count) 3 (count) Last Now Cirders Last Complete Inspection Date 15-dul-2009 7014 Cracking (Y/N) Yes Spalling (Percent Area) 2 Lift or Connector Posket Grouted (Y/N) (Number Of Girders: 8) Span Alignment Problems Vertical (Y/N) No Peeting at timber rail and posts. Rot A 3 Peeting at timber rail and posts. A 4 3 Reting a 1 imber rail and posts. A 5 / Count Count		m Area)	0					
Bridge Rail Posts (Type : POST STEEL; POST STEEL) Bridge Rail/Posts Coating (Type : PAINT) Sidewalk X Girder Detail Ratings N (count) 1 (count) 2 (count) 3 (count) Last Now Girders Last Complete Inspection Date Cracking (Y/N) Spalling (Percent Area) Lift or Connector Pocket Grouted (Y/N) (Number Of Girders : 8) Span Alignment Problems Vertical (Y/N) No Peeling at timber rail and posts. Reeling at timber rail and posts.						dell'	17	
(Type : POST STEEL; POST STEEL) Bridge Rail/Posts Coating (Type : PAINT) Sidewalk X Girder Detail Ratings N (count) 1 (count) 2 (count) 3 (count) Last Now Girders Last Complete Inspection Date 15-dul-2009 Cracking (Y/N) Spalling (Percent Area) Lift or Connector Pocket Grouted (Y/N) (Number Of Girders : 8) Span Alignment Problems Vertical (Y/N) No Peeling at timber rail and posts. A 2 A 3 G2-pas wide cracks and spall in AZ G1, G3, G4 & G6 wide G2 AZ 011 leg only G4 A 3 G2-pas wide cracks and spall in AZ G1, G3, G4 & G6 wide G2 AZ 011 leg only G6 A 1 hure Spall S A wide G7 A 1 A 2 A 2 A 3 A 3 A 3 A 3 A 3 A 3 A 3 A 3	***			. IIMB	EH HAILS	A Section of the Control	1-1	UST
Bridge Rail/Posts Coating (Type : PAINT) Sidewalk X Girder Detail Ratings N (count) 1 (count) 2 (count) 3 (count) Last Now Girders Last Complete Inspection Date Cracking (Y/N) Spalling (Percent Area) Lift or Connector Pocket Grouted (Y/N) (Number Of Girders : 8) Span Alignment Problems Vertical (Y/N) No Peeling at timber rail and posts. 8 A X X A X Galaxi	Propries and the second second	Note the second	-		-174	1 7	1	
Sidewalk Sidewalk X Sidewal		1758	2.7.1	L)-			9	Deather at the very self-control
Girder Detail Ratings N (count) 1 (count) 2 (count) 3 (count) Last Now Girders 4 3 G2-bas wide cracks and spall in AZ. G1. G3. G4-& G6 wide G2 AZ of 1 leg only. Cracking (Y/N) Spalling (Percent Area) 2 Lift or Connector Pocket Grouted (Y/N) (Number Of Girders: 8) Span Alignment Problems Vertical (Y/N) No						4	12	reeling at timber rail and posts.
Girder Detail Ratings N (count) 1 (count) 2 (count) 3 (count) Last Now Girders 4 3 G2-bas wide cracks and spall in AZ. G1, G3, G4 & G6 wide G2 Last Complete Inspection Date 15-Jul-2009 70 14 Cracking (Y/N) Yes Spalling (Percent Area) 2 Lift or Connector Pocket Grouted (Y/N) (Number Of Girders: 8) Span Alignment Problems Vertical (Y/N) No	Type: PAINT	}						100 10 hours 1002
Now Description Date 15-dul-2009 2014 Ground Gracks and spall in AZ. G1, G3, G4 & G6 wide Gracking (Y/N) Yes G2 and G2 have Spall in AZ. G1, G3, G4 & G6 wide G2 AZ 011 leg only. Cracking (Y/N) Yes G2 and G3 have Spall in AZ. G1, G3, G4 & G6 wide G2 AZ 011 leg only. Cracking (Percent Area) 2 G2, G3 have Spall in AZ. G1, G3, G4 & G6 wide G2 AZ 011 leg only. Cracking (Percent Area) 2 G3 have Spall in AZ. G1, G3, G4 & G6 wide G2 AZ 011 leg only. Cracking (Percent Area) 2 G4, G3 have Spall in AZ. G1, G3, G4 & G6 wide G2 AZ 011 leg only. Cracking (Percent Area) 2 G4, G3 have Spall in AZ. G1, G3, G4 & G6 wide G2 AZ 011 leg only. Cracking (Y/N) Yes G2 and G3 have Spall in AZ. G1, G3, G4 & G6 wide G2 AZ 011 leg only. Cracking (Y/N) Yes G2 and G3 have Spall in AZ. G1, G3, G4 & G6 wide G2 AZ 011 leg only. Cracking (Y/N) Yes G2 and G3 have Spall in AZ. G1, G3, G4 & G6 wide G2 AZ 011 leg only. Cracking (Y/N) Yes G2 and G3 have Spall in AZ. G1, G3, G4 & G6 wide G2 AZ 011 leg only. Cracking (Y/N) Yes G2 and G3 have Spall in AZ. G1, G3, G4 & G6 wide G2 AZ 011 leg only. Cracking (Y/N) Yes G2 and G3 have Spall in AZ. G1, G3, G4 & G6 wide G2 AZ 011 leg only. Cracking (Y/N) Yes G2 and G3 have Spall in AZ. G1, G3, G4 & G6 wide G2 AZ 011 leg only. Cracking (Y/N) Yes G2 and G3 have Spall in AZ. G1, G3, G4 & G6 wide G2 AZ 011 leg only. Cracking (Y/N) Yes G2 and G3 have Spall in AZ. G1, G3, G4 & G6 wide G2 AZ 011 leg only. Cracking (Y/N) Yes G2 and G3 have Spall in AZ. G1, G3, G4 & G6 wide G2 AZ 011 leg only. Cracking (Y/N) Yes G2 and G3 have Spall in AZ. G1, G3, G4 & G6 wide G2 AZ 011 leg only. Cracking (Y/N) Yes G2 and G3 have Spall in AZ. G1, G3, G4 & G6 wide G2 AZ 011 leg only. Cracking (Y/N) Yes G2 and G3 have Spall in AZ. G1, G3, G4 & G6 wide G2 AZ 011 leg only. Cracking (Y/N) Yes G2 and G3 have Spall in AZ. G1, G3, G4 & G6 wide G2 AZ 011 leg only. Cracking (Y/N) Yes G2 and G3 have Spall in AZ. G1, G3, G4 & G6 wide G2 AZ 011 leg only. Cracking (Y/N) Yes G2 and G3 have Spall in AZ 01 leg only. Cracking (Y/N)	ewalk			647		X	X	
Last Now Girders Last Complete Inspection Date Cracking (Y/N) Spalling (Percent Area) Lift or Connector Pocket Grouted (Y/N) (Number Of Girders: 8) Span Alignment Problems Vertical (Y/N) No A G2-ba9 wide cracks and spall in AZ. G1, G3, G4 & G6 wide G2 AZ o1/1 leg only. G2-ba9 wide cracks and spall in AZ. G1, G3, G4 & G6 wide G2 AZ o1/1 leg only. G3-ba9 wide cracks and spall in AZ. G1, G3, G4 & G6 wide G2 AZ o1/1 leg only. G4-ba9 wide cracks and spall in AZ. G1, G3, G4 & G6 wide G2 AZ o1/1 leg only. G4-ba9 wide cracks and spall in AZ. G1, G3, G4 & G6 wide G2 AZ o1/1 leg only. G4-ba9 wide cracks and spall in AZ. G1, G3, G4 & G6 wide G2 AZ o1/1 leg only. G4-ba9 wide cracks and spall in AZ. G1, G3, G4 & G6 wide G2 AZ o1/1 leg only. G4-ba9 wide cracks and spall in AZ. G1, G3, G4 & G6 wide G2 AZ o1/1 leg only. G4-ba9 wide cracks and spall in AZ. G1, G3, G4 & G6 wide G2 AZ o1/1 leg only. G4-ba9 wide cracks and spall in AZ. G1, G3, G4 & G6 wide G2 AZ o1/1 leg only. G4-ba9 wide cracks and spall in AZ. G1, G3, G4 & G6 wide G2 AZ o1/1 leg only. G4-ba9 wide cracks and spall in AZ. G1, G3, G4 & G6 wide G2 AZ o1/1 leg only. G4-ba9 wide cracks and spall in AZ. G1, G3, G4 & G6 wide G2 AZ o1/1 leg only. G4-ba9 wide cracks and spall in AZ. G1, G3, G4 & G6 wide G2 AZ o1/1 leg only. G4-ba9 wide cracks and spall in AZ. G1, G3, G4 & G6 wide G2 AZ o1/1 leg only. G4-ba9 wide cracks and spall in AZ. G1, G3, G4 & G6 wide G2 AZ o1/1 leg only. G4-ba9 wide cracks and spall in AZ. G1, G3, G4 & G6 wide G2 AZ o1/1 leg only. G4-ba9 wide cracks and spall in AZ. G1, G3, G4 & G6 wide G2 AZ o1/1 leg only. G4-ba9 wide cracks and spall in AZ. G1, G3, G4 & G6 wide G2 AZ o1/1 leg only. G4-ba9 wide cracks and spall in AZ. G1, G3, G4 & G6 wide G2 AZ o1/1 leg only. G4-ba9 wide cracks and spall in AZ. G1, G3, G4 & G6 wide G2 AZ o1/1 leg only. G4-ba9 wide cracks and spall in AZ. G1, G3, G4 & G6 wide G2 AZ o1/1 leg only. G4-ba9 wide cracks and spall in AZ. G1, G3, G4 & G6 wide G2 AZ o1/1 leg only. G4-	der Detail Rat	tings						
Spalling (Percent Area) Lift or Connector Pocket Grouted (Y/N) (Number Of Girders: 8) Span Alignment Problems Vertical (Y/N) O	N	(count)	1 (count)	2	(count)	3 (co	runt)	
Girders Last Complete Inspection Date 15-dul-2009 7014 Cracking (Y/N) Spalling (Percent Area) Lift or Connector Pocket Grouted (Y/N) (Number Of Girders: 8) Span Alignment Problems Vertical (Y/N) Vertical (Y/N) 4 3 G2 bas wide cracks and spall in AZ. G1. G3. G4 & G6 wide Gz AZ of 1 leg only. G2 and G3 have Spall in AZ. G1. G3. G4 & G6 wide Gz AZ of 1 leg only. G3 and G3 have Spall in AZ. G1. G3. G4 & G6 wide Gz AZ of 1 leg only. G6 G7 have Spall in AZ. G1. G3. G4 & G6 wide Gz AZ of 1 leg only. G6 G7 have Spall in AZ. G1. G3. G4 & G6 wide Gz AZ of 1 leg only. G6 G7 have Spall in AZ. G1. G3. G4 & G6 wide Gz AZ of 1 leg only. G6 G7 have Spall in AZ. G1. G3. G4 & G6 wide Gz AZ of 1 leg only.	st							
Last Complete Inspection Date 15-dul-2009 2014 AZ of Fleg only Cracking (Y/N) Yes G2 and G3 have Spell 5 of wide Spalling (Percent Area) 2 Lift or Connector Pocket Grouted (Y/N) (Number Of Girders: 8) Span Alignment Problems Vertical (Y/N) No	N	D			0			
Cracking (Y/N) Yes G7 and G3 have Spell's of wide of Spelling (Percent Area) 2 In m-hand Concute in A Z , Radad Lift or Connector Pocket Grouted (Y/N) G6, G7 have wide cracks in sand case (Number Of Girders: 8) Span Alignment Problems Vertical (Y/N) No	ders		16	1965		-	13	G2-bas wide cracks and spall in AZ, G1, G3, G4 & G6 wide crack in
Lift or Connector Pocket Grouted (Y/N) (Number Of Girders : 8) Span Alignment Problems Vertical (Y/N) No	st Complete Ir	nspection [Date 15-	dul-206	19-2014			
Lift or Connector Pocket Grouted (Y/N) (Number Of Girders : 8) Span Alignment Problems Vertical (Y/N) No	racking (Y/N)		Yes	3 /	Av.	EE.		G2 and G3 have spalls or wide cras
Lift or Connector Pocket Grouted (Y/N) (Number Of Girders : 8) Span Alignment Problems Vertical (Y/N) No	palling (Peror	ent Area)	2	/		130		in un-sand concrete in AZ, Rated 3.
Span Alignment Problems Vertical (Y/N) No		r Posket	No					G6, G7 home wide cracks in sound concell
Vertical (Y/N) No	umber Of Gird	iers:8)	0.46					
Vertical (Y/N) No			s					
The state of the s				/				
	The second second second second	(V)				THE S		
Superstructure General Rating 4 3						4	3	

E1 - W|C SC + 1 = 5 Go We SC = 4 E3 - W|C US = 3 G2 MC $SC \neq 1 = 5$ E3 - W|C US = 3 G2 MC $SC \neq 1 = 5$ E4 - W|C SC + 1 = 5 E4 - W|C SC + 1 = 5E4 - W|C SC + 1 = 5

Bridge Comp		2010/01/02	(I) A STEEL	Last	Now	Explanation of Condition
	onent	1	7072	Last	IAOM	Explanation of condition
Abutments		- OVAD . M	1840		136.	The state of the s
and Advisory and the second second	Backwall Pile:		1000			
		s Spacing(mm)	; 1500)			
Total Number				THE		Caps cored July 16, 2014. No 1st.
		els Detail Rating				Caps Cored Son 17, 2017
152	N (count)	1 (count)	2 (count)	3 (cou	nt)	
ast	75	The Three		1-9.0	3300	
Vow -	0	0	0	0	,	
Bearing Seats	Caps/Corbu	els		5	6	
(Type : TRE	ATED TIMB	ER)	1	100	10	
(Depth(mm)	: 305)				101	Fast
(Width(mm)	: 305)				1503	
ackwalls/Bre	eastwalls	45		3	3	Undermined at both abutments and East breastwall planks missing
Greatest He	eight (m)	3.10	-	0.71	SHALL	and detached.
Wingwalls	100	25		5	5	
			10000 TO 100	1400		and the second that
(Total Numbe		Mies : 6:6)		-1176-	- 12	#4 pile on west abutment split & banded. Piles 25/9d J. ly 16
Piles Detail R		1.4	0.400000	3 (cou	mi)	AI - PI is bowing and has not full height. is cracked and bulging at groundline and h
	N (count)	1 (count)	2 (count)	3 (000	nij	rot full height. P3 has vot, PH, P5 bigin
_ast	D	5	-	1 3		
wow	U	U	2		2	A2-P1, P6 house out. P4, P5 have bogining of
Piles		- 1	1554	5	6	A STATE OF THE STA
Paint/Coating				X	X	
Abutment Sta	ibility		199	5	3	Pottal and bulging piles Undermined and evoded at A2
Scour/Erosion	n	- Allen	77.	3	3	Undermined and evoled at A2
		9				
Piers/Bents		700		18		
(Type:)	18		1000			
(Total Numbe	er of Caps/Co	orbels:)		- 日本		
Bearing Seats	s/Caps/Corb	ols Detail Ratin	gs	Line		
	N (count)	1 (count)	2 (count)	3 (cou	(tra)	
		i (count)	1	2 1000		
Last	0120	r (count)		1 134		
Now	218	60 a.			,	
Now	s/Caps/Corb	60 a.		X	LX	
Now	s/Caps/Corb	60 a.			LX	
Now Bearing Seat		60 a.			l X	
Now Bearing Seat (Type:)):)	els			l X	
Now Bearing Seat (Type:) (Depth(mm):)):)	els			l X	
Now Bearing Seate (Type:) (Depth(mm) (Width(mm) (Total Numbe):)):) er of Bearing	els			l X	
Now Bearing Seate (Type:) (Depth(mm) (Width(mm) (Total Numbe):)):) er of Bearing	els			lx	
Now Bearing Seate (Type:) (Depth(mm) (Width(mm) (Total Numbe):)):) er of Bearing Ratings	Piles:)	111 111 111 111	X	lx	
Now Bearing Seate (Type:) (Depth(mm) (Width(mm) (Total Number Piles Detail Rest):)):) er of Bearing Ratings	Piles:)	111 111 111 111	X	lx	
Now Bearing Seate (Type:) (Depth(mm) (Width(mm) (Total Numbe Piles Detail R Last Now):)):) er of Bearing tatings N (count)	Piles:)	111 111 111 111	X	lx	
Now Bearing Seate (Type:) (Depth(mm) (Width(mm) (Total Numbe Piles Detail R Last Now Pier Shait/Pil):)):) er of Bearing tatings N (count)	Piles:)	2 (count)	X 3 (coa	lx	
Now Bearing Seate (Type:) (Depth(mm) (Width(mm) (Total Numbe Piles Detail R	er of Bearing Ratings N (count)	Piles:)	2 (count)	X 3 (coa	lx	6 Struts 200mm x 160 mm.
Now Bearing Seate (Type:) (Depth(mm) (Width(mm) (Total Numbe Piles Detail R Last Now Pier Shalt/Pil Greatest He Bracing/Strut	er of Bearing Ratings N (count)	Piles:)	2 (count)	3 (cox	X unt)	6 struts 200mm x 160 mm,
Now Bearing Seate (Type:) (Depth(mm) (Width(mm) (Total Numbe Piles Detail R Last Now Pier Shait/Pil Greatest He Bracing/Strut Nose Plate	():) er of Bearing Ratings N (count) les eight (m)	Piles:)	2 (count)	3 (cou	X unt)	6 struts 200mm x 160 mm.
(Depth(mm) (Width(mm) (Total Number Piles Detail R Last Now Pier Shalt/Pil Greatest He Bracing/Strut Nose Plate Paint/Coating	er of Searing tatings N (count) des eight (m) ts/Sheathing	Piles:)	2 (count)	3 (co. X	X unt)	6 struts 200mm x 160 mm.
Now Bearing Seate (Type:) (Depth(mm) (Width(mm) (Total Number Piles Detail Research Now Pier Shaft/Pile Greatest He Bracing/Strut Nose Plate Paint/Coating (Colour De	er of Searing Ratings N (count) les eight (m) es/Sheathing scription:)	Piles:)	2 (count)	3 (cou	X unt)	6 struts 200mm x 160 mm,
Now Bearing Seate (Type:) (Depth(mm) (Width(mm) (Total Number Piles Detail Research Now Pier Shaft/Pile Greatest He Bracing/Strut Nose Plate Paint/Coating	er of Searing Ratings N (count) les eight (m) es/Sheathing scription:)	Piles:)	2 (count)	3 (cou	X unt)	6 struts 200mm x 160 mm.

12

			Subst	ructure		
Bridge Component		Last	Now	Explanation of Condition		
Scour	Ha. 1911	X	X			
Debris (Y/N)	No -	27	192	1		
Substructure General Rating		5	2			
A DESCRIPTION OF THE PARTY OF T			Structu	re Usage	SECTION SECTION	
到一个一个	1,000		Now		100	(38 a
Channel		P. Carrier	1000			
(U/S Direction : N)	The State of		THE			
(D/S Direction : S)		***				

Alberta Transportation

の対の対象の対象を対象を対象を		Ма	Maintenance Recommendations	dations				
Inspector Recommendations	Year	Inspector Comments		Department Comments	ents	Target Year	Est. Cost	Cal *
REPAIR/REPLACE BRIDGE RAIL.	3014		with CCA plank	of forthermon	- d boidge is	ADT replace	40)	
SEAL CURBS				-		,		
PATCH DECK	-5646	Graffmin, 13 lill/connector pockets (9 on deck)	ector pockets (9 on-				2000	
OVERLAY DECK	The second secon							
STRAIGHTEN/REPLACE MEMBERS	3014	Ple spliced of	A1-P1, 83, P4.	P5, P6 and A7.	A 2-P1, P4, P5, P6			
WASHING			100000000000000000000000000000000000000	THE PARTY OF THE P				
SHOTCRETE REPAIRS								
CORE TIMBER CAPS/CORBELS							- Control of the Cont	
REPAIR/REPLACE TIMBER CAPS			1	Canada (1) and the control of the co		-		
REPAIR ABUTMENT SCOUR/EROSION	ON 2010	Reinstall East breastwall planks, add 2.0m	all planks, add 2.0m	Lander in it	interest			
PLACE ADDITIONAL RIP RAP	3014	D W Q	,					
REMOVE DRIFT ACCUMULATION								
INSTALL STRUTS								
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OTHER ACTION					The Party of the P			
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Special Center Comments for Next Inspection	details	S Wat Fical	See cand the for piles	Department Comments				
Maintenance Reviewed By No 90	hom at	present for goods	5 retad 3	Date		Estimated Total	Total 0	
Proposed Long-Term Strategy				000				
		21.						1000
On 3-Year Program (Y/N)	日報報	**						100
Proposed Action								
								F
Previous Inspector's Name	Garry Roberts		Previou	Previous Assistant's Name				
Next Inspection Date	15-Apr-2014		Previou	Previous Inspection Date	15-Jul-2009			
Inspection Cycle (Default) (months)	57				4.01	- 100	100	-
Comment				le de la constante de la const		100	in in	-11
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BIM Inspection Contract - Notification of Structural Element Rated 2

Date:

July 16, 2014

Bridge File No.:

73333

Legal Land Loc.:

SW Sec15 Twp30 Rge 5 W5M

Road Name:

Local Road

Stream: Town:

Graham Ck. Cremona

Subject:

Rotted and Bulging/Bowing Abutment Piles

Structure Information: 1 – 6.1 M Type HC Girder Span Bridge on TT Substructure Construction Date: 1964

The July 16, 2014 Level 1 and Level 2 timber coring inspection completed by Bow Valley Bridge Services Ltd. found two (2) abutment piles with bulging, bowing and rot as follows:

A1-P1 is bowing and has rot in the bottom approx. 1.5 m section.

 A1 – P6 is bulging at the ground-line with 15 mm vertical displacement and rot full height.

Both piles are located under the curb units.

This deficiency resulted in a 2 rating of the abutment piles and bridge Substructure General Rating, as per Alberta Transportation's Bridge Inspection and Maintenance (BIM) Manual.

To note; A1-P3, A2-P1, P6 also have rot and A1-P4,P5 and A2-P4, P5 have beginning rot.

It is recommended to either repair the piles, or schedule bridge replacement in the near future (within 2-3 years) due to the overall poor condition and age. In the interim, the bridge should be inspected annually until repaired or replaced.

The BIM inspection report and photos will be forwarded in the near future.

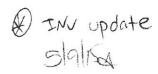
Inspected By:

Garry Roberts

Bow Valley Bridge Services Ltd.

Sent to: Ryan Morrison, Mountain View County Donald Saunders, AT Red Deer

						Bridge	Inspection					
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	oad Classification RLU-207G-60 etour Length (km) 3						Dept. Review Date					
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And the same of the same of	n): 300) 🗸			iiika lab		
(Width(mn	1):350) 🗸	-,,-,-,,-,-,				
Backwalls/B	reastwalls		1	3	3	Tongue & groove installed horiz.
A STATE OF THE PERSON OF THE P	Greatest Height (m) 1.80 ✓			3889	(March 1)	Tongue & groove installed horiz. Stream has degraded below N backwall.— exposed fill Material
Wingwalls			111111111111111111111111111111111111111	6	15	material
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Piles Detail		Files : 5:5) V				Wide check in P2 A2, runs full height.
i lies Detall I	N (count)	1 (count)	2 (count)	3 (co	unt)	
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Now	0	0	ď	C		
Piles			2,23998	5	5	
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, anti-odalin	9	973	METHOD STREET	^	X	
Abutment St	ability	Control of the contro		6	6	Piles are strutted.
Con II				UM		
Scour/Erosic)(1)			5	5	
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(Type:)			-252 (5744) 2).			
	er of Caps/Co	orbels:)		9 11 1		
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Now	4				elikasir perektasa saasa	**************************************
Bearing Sea	ts/Caps/Corb	els		X	X	
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(Width(mm	Personal Control of the Control of t		970) . 4 PV	1 149		
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			Subst	tructure
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			Structu	ire Usage
		Last	Now	Explanation of Condition
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(D/S Direction : E)	1 2008 10			
Alignment		6	6	
Bank Stability		7	7	
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Driff (Y/N)	No V			HWM not visible.
Slope Protection	us and the second secon	4	14	Stream degraded below sheathing at N abut.
(Type: NONE; NONE)		i.		and the same of th
Guidebank/Spurs		х	X	
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Fish Compensation Measure 2	: NONE)		U-with li	
Channel General Rating		4	lц	

ell Stringers – High Disou, ty Rating (LastNow) 74.31 Est Repl. Yr 2025V Waint Regg. (YN) Reting (LastNow) Date	RS 3015 Replace CCCCKed Stringers — High Priority Parity Priority Parity Priority Parity Priority Parity Previous Assistant's Name Claude Julias Previous Assistant's Name Original Previous Previ	Inspector Recommendations	Year	Year Inspector Comments	Mannenance recommendations Department Commente		-	
RS 3015 Replace CCCCKed Stringers — High Prov. 4 Solon 3015 -3044 Lower sheathing at N abut Approx 8-10 LM ob sheathing required - Faston to Ecost sheller 2015 -3044 Recent E-Hitheorie Rating (Lastinow) 74.31 Est Rept. Yr 2025 Whent. Read (YM) Solon Sufficiency Rating (Lastinow) 74.31 Est Rept. Yr 2025 Whent. Read (YM) Claude Juinzs Claude Juinzs Claude Juinzs Claude Juinzs Previous Assistant's Name O1-3015 Previous Inspection Date O1-3015	RS 3015 Replace CCCCKed Stringers — High Price, it also assistants at Nabut. Approx 8-10 L/M of sharthing required - tasks to the test Replice as breaking that the string (Last Now) 74.31 Est Replice (VM) Department Comments Date Date Date (NM) Restriction of Replace Date (NM) Repl	REPAIR/REPLACE BRIDGE RAIL		T T T T T T T T T T T T T T T T T T T			15.3	Cat #
RS 3015 Replace Cracked Stringers - High Priority SSION SOLD - EGH Lower sheathing at Nabut - Approx 8-10 LM of sheathing sequired - Faster to front 3telles 2015 - EGH Lower sheathing at Nabut - Approx 8-10 LM of sheathing sequired - Faster to front 2015 - EGH Lower sheathing at Nabut - Approx 8-10 LM of sheathing sequired - Faster to front 2015 - EGH Sufficiency Rating (LastNow) 74:31 Est Repl Vr 2005V Wainti Read (VIN) Claude Julias Previous Assistants Name Comments Claude Julias Previous Assistants Name Distantant Claude Julias Previous Inspection Date O1-Sep-2010 ST Previous Inspection Date O1-Sep-2010 Previous Inspection Date	RS 3015 Replace CCCCKed StringCrs — High Prior, 4 3015 act+ tower sheathing at N abut. Approx 8-10 LM of sheathing ceguirel Roster to Contact apples 2015 act+ Reset 8E+MHs set (%) 2015 act+ tower sheathing at N abut. Approx 8-10 LM of sheathing ceguirel Rost 8 foot 3 bross 4 s bross 4 bross 4 s bross 4 bros	PATCH DECK	VA VALUE AND A VAL				THE REAL PROPERTY OF THE PROPE	A company of the same of the s
Second S	RSS 3015 Replace CTGCKed Stringers — High Priority 3015 -E44 Lower sheathing at Nabut - Approx 8-10 LM of sheathing coyired - Iasha to Goat Sheall 3015 -E44 Lower sheathing at Nabut - Approx 8-10 LM of sheathing coyired - Iasha to Goat Sheall 3015 -E44 Lower sheathing at Nabut - Approx 8-10 LM of sheathing coyired - Iasha to Goat Sheall 3015 -E44 Lower sheathing at Nabut - Approx 8-10 LM of sheathing coyired - Iasha to Goat Sheall 3015 -E44 Lower sheathing at Nabut - Approx 8-10 LM of sheathing coyired - Iasha to Goat Sheall 3015 -E44 Lower sheathing at Nabut - Approx 8-10 LM of sheathing coyired - Iasha to Goat Sheall 3015 -E44 Lower sheathing at Nabut - Approx 8-10 LM of sheathing coyired - Iasha to Goat Sheall 3015 -E44 Lower sheathing at Nabut - Approx 8-10 LM of sheathing coyired - Iasha to Goat Sheathing Cool Sheathing C	REPLACE STRIP DECK	The second secon					
Solician Solician Sufficiency Rating (Lestinow) 74:31 Est Repl. Yr 2025 Waint Read (YN)	RS 3015 Replace CCCKed Stringers — High Priority Solon 2015 - 2014 Lower sheathing at Nabut - Approx 8-10 LM of sheathing copyred - fasten to Cront String 2015 - 2014 Reset SE Hitherand 2015 - 2014 Reset SE Hitherand 2015 - 2014 Reset SE Hitherand Claude Juras	REPLACE SUB DECK				The second secon		The second secon
SSIGN	SSIGN SSIGN SOLIC Fig. Sufficiency Rating (Last/Now) 74.31 Est. Repl. Yr 2025 V Meint. Reqd. (Yhl) Claude Jutras Previous Assisant's Name Off-Sep-2010 Off-Sep-2	STRAIGHTEN/REPLACE MEMBER		Reply Cracken 54	1			
Solon Solon Sufficiency Rating (Lastvow) 74.31 Est Repl. Yr 2025 Waint. Read (Yin) Colaude Jutias Previous Assistant's Name Ol-Jun-2015 Previous Assistant's Name Ol-Jun-2015 Previous Inspection Date Ol-Sep-2010	Solician Solician Sufficiency Rating (Lastvilous) 74:31 Est Repl. Yr 2025	WASHING	V 6			AND THE RESERVENCE OF THE PROPERTY OF THE PROP		The state of the s
SSION SSE6 Sufficiency Rating (Last Now) 74.31 Est Repl. Yr 2025 Waimt. Required Previous Assistant's Name Ol-Sep-2010 Previous Assistant's Name Ol-Sep-2010 Ol-	Selon Selo	CORE TIMBER CAPS/CORBELS	THE RESIDENCE THE BEAUTY OF THE PARTY OF THE	A CONTRACTOR OF THE PROPERTY O				Total and an analysis of the second
20 5 - 2044 Lower sheathing at N abut Approx. 8 - 10 LM of sheathing sequire - 45149 to Front shelles	20 5 - 2014 Lower sheathing at N abut - Approx 8-10 LM ch. sheathing see of the Front - Foster to Front - Approx 8-10 LM ch. sheathing see of the Front - Foster to Front - Approx 8-10 LM ch. sheathing see of the Front - Foster to Front - Approx 8-10 LM ch. sheathing see of the foot to the state of the foot to the state of the foot to th	REPAIR/REPLACE TIMBER CAPS						The same of the sa
2015 - 2011 - Reset SE HM to sit at Nabut App rox 8-10 LM of Sharthing registred - 1934a to Front 34-9165 2011 - Reset SE HM to sit at Nabut App rox 8-10 LM of Sharthing registred - 1934a to Front 34-9165 2011 - Reset SE HM to sit at Nabut App rox 8-10 LM of Sharthing registred - 1934a to Front 34-9165 2011 - Reset SE HM to sit at Nabut App rox 8-10 LM of Sharthing registred - 1934a to Front 34-9165 Claude Jutras Claude	30 5 3014 Lower sheathing at N abut - App rox 8-10 L/M of Sheathing reguled - Postar to Front 3-10 L/M of Sheathing reguled - Postar to Front 3-10 L/M of Sheathing reguled - Postar to Front 3-10 L/M of Sheathing reguled - Postar to Front 3-10 L/M of Sheathing reguled - Postar to Front 3-10 L/M of Sheathing reguled - Postar to Front 3-10 L/M of Sheathing reguled - Postar to Front 3-10 L/M of Sheathing reguled - Postar to Front 3-10 L/M of Sheathing reguled - Postar to Front 3-10 L/M of Sheathing at Name Date	REPAIR ABUTMENT SCOUR/EROS	SION			TO THE RESERVE OF THE PROPERTY		
2015 - 2014 Lower sheathing at N abut Approx 8-10 LM ob. sheathing required - Fastga to Front Sheall 2014 Provide String (Last Now) 74.31 Est. Repl. Vr 2025 Maint. Reqd. (VM) 201-10 201-1	20 5 -204+ Lower sheathing at N abut App rox 8-10 LM ob. sheathing required - Faston to Front at Pullor 2012 - Rose SE 1M to side	PLACE ADDITIONAL RIP RAP	THE REAL PROPERTY AND ADDRESS OF THE PROPERTY ADDRESS OF THE PROPERTY AND ADDRESS OF THE PROPERTY ADDRESS OF THE PROPERTY AND ADDRESS OF THE PROPERTY ADDRESS			The second secon	THE STANDARD CONTRACTOR AND ADDRESS OF THE STANDARD CONTR	The second secon
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2011- Recet SE HW to side. (%) Sufficiency Rating (Last/Now) 74;31	2011 Reset SE HM to ate. Whow) 56.6/ Sufficiency Rating (Last/Now) 74.3/ Est Repl. Yr 2025 Maint. Reqd. (Y/N) Department Comments Claude Juras Previous Assistant's Name O1-Sep-2010 Claude Juras Previous Assistant's Name O1-Sep-2010	OTHER ACTION	35 Just 4	Lower sheathing at Nabut -	Los Los Los Marios Mari			
Mow) Sufficiency Rating (Last/Now) 74.31 Est. Repl. Yr 2025 Maint. Repd. (YN) Comment Comment Date Estimated Total 0 Claude Julras Previous Assistant's Name Previous Inspection Date 01-Sep-2010 O1-Sep-2010 01-Sep-2010	tNow) 56.6/F Sufficiency Rating (Last/Now) 74:31 Est Repl. Yr 2025 V Maint. Reqd (YN) Department Comments Date Date Estimated Total (0 Claude Juitas Previous Assistants Name Previous Assistants Name 61-3ep-2010 57 S7	OTHER ACTION	384	Pont SF HM to atd	HONE OF SHEAT	ming regular + 45+00	Sold to the	
t/Now) 56.6/ [%] Sufficiency Rating (Last/Now) 74:31 Est Repl. Vr 2025 / [Maint: Reqd. (VM)] Comments Department Comments Estimated Total 0 Claude Jutras Previous Assistant's Name Previous Inspection Date 01-Sep-2010 57 Frevious Inspection Date 01-Sep-2010	tMow) 55.6/f (%) Sufficiency Rating (Last/Now) 74:3/ Fest. Repl. Yr 2025 V Maint. Reqd. (VIN) Comments Comments Comments Estimated Total (0 Claude Jutras Previous Assistant's Name Intervious Assistant's Name 01-Jun-2015 Previous Inspection Date 01-Sep-2010	OTHER ACTION	TO THE OWNER OF THE PARTY AND			4550	**************************************	
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Department Comments Determined Comments Determined Dete	Caude Jutras Claude Jutras Of Junr-2015 Previous Assistant's Name Of Junr-2015 Frevious Inspection Date	Structural Condition Rating (Last/I		Sufficiency Rating (%)			Maint. Reqd. (Y/N)	Nes Sal
Claude Jutras Claude Jutras 01-Jun-2015 Frewious Assistant's Name 01-Jun-2015 57	Claude Jutras O1-Jun-2015 Frevious Assistant's Name O1-Jun-2015 57	Special Comments for Next Inspection			Department Comments			
Claude Jutras 01-Jun-2015 67	Claude Jutras 01-Jun-2015 67	Maintenance Reviewed By			Osfo	- 77 - L		
Claude Jutras O1-Jun-2015 Previous Assistant's Name Previous Inspection Date 57	Claude Jutras 01-Jun-2015 Previous Assistant's Name 01-Jun-2015 57	Proposed Long-Term Strategy						
Claude Jutras O1-Jun-2015 Previous Assistant's Name 01-Jun-2015 57	Claude Jutras 01-Jun-2015 67	On 3-Year Program (Y/N)						
Claude Jutras O1-Jun-2015 Previous Inspection Date 57	Claude Jutras Previous Assistant's Name 01-Jun-2015 Previous Inspection Date 57	Proposed Action	12					
01-Jun-2015 Previous Inspection Date 57	01-Jun-2015 Previous Inspection Date 57	Previous Inspector's Name	Claude Jutras		Provides Assistants Name		AT AT	-
57	57	Next Inspection Date	01~lun-2015		PILIPAL ON DESCRIPTION IN INCHINE			
		Inspection Cycle (Default) (months)	57		Frevious inspection Date	01-Sep-2010		
		Comment		After the second				

					Bridg	ge Culv	ert Insp	ection				
Bridge File Num	nber	70576	-1 Bridge Culve	rt /			Form 1	уре		CUL1		
Year Built		1953	/	-			Lot No			2.1		
Bridge or Town	Name	THREE	E HILLS /	/	**********		Inspec	tor Name		G. Rose	t.	THE STATE OF THE S
Located Over		TRIBU	TARY TO THRI	EEHILLS (CREE	К,	-	tor Class		G. Rober	ł	
Located On	e i tamente anno como estado		ROAD /					nt Name				
Water Body Cl./	Year							int Class		0 - 11		
Navigabil. Cl./Ye	***********				Carterine Programme	·		tion Date		OCT 6/	14	
Legal Land Loca		SWSE	C 25 TWP 32 F	2GE 25 W	414	S	Arrive			5:15		
Longitude, Latit		1	5:48, 51:46:11		-TIVI		Depart		**************	6:30	PM	or province of the control of the transfer of the same of
Road Authority	uuc	1	HILL COUNTY					ntry By				
Contract Main.	Δτορ		FINED CMA					ntry Date	*****			
Clear Roadway			deg. (RHF)	/			Review	er Name				
AADT/Year	OVEAA	}	2009 (E) 20	214			Review	Date				
Road Classifica	tion		08-100			··	Dept. F	Reviewer	Name			THE STATE OF THE S
Detour Length (**********	3	/ /				Dept. F	Review Da	ate			
Detour Length (KIII)	3		TO THE THE RESIDENCE OF THE LOCAL PROPERTY.			Follow-	Up By	***********			Di da din shanyahdan ad dinini 6 kantonin 1 km dibinan dininini da 211 haksi bid
Bridge Culvert		ation										
Number of Culv	erts		1	y	Name of State of Stat			····				
Pipe #	Barrel	er de mil dan sie verkansell desastens brow	Span	Rise (or	Dia.)	Туре		Length		Corr. Profile	Pl./Slab Thickness	Shape
1	MAIN		2973	2007		RPP		25.2		152X51	4.0	PIPE ARCH
Special Feature	S	-	VERT TIMBER	STRUTS	3							
Special Feature	s Comr	ment	A CONTINUE OF THE PROPERTY OF									
			via p		-	77700 0						
Little Attaches					Ut	ilities (Located	at)		过来的是多数的		
Utility Attachme	ins		CONTROL WHEN I A		a and the condition of the condition		T		Γ			
Telephone	-	· /- /	7	THE CONTROL PLANTS, TATLAND, AND PAYORSHIP.			Gas					
Power Eust Row						Municip	***************************************					
Others	1		10.787 (10.07 (10.10.10.10.10.10.10.10.10.10.10.10.10.1				Probler	n (Y/N)	N			
Remarks						~~					AND TAKEN MEMOR	
				Ap	proa Last		d / Emba		0			
Horizontal Align	ment				8	Now	David	ation of	condi	tial rice	sc at s	w and NE
Vertical Alignme			en e		9	8	Paved	road. 1/4	e519(e	with acce	23 W()	
Roadway Width	Particular Speciment Committee Co.	************************	9.600		9			· p. · P. · · · · · · · · · · · · · · · · ·	***************************************			
Embankment		THE ST. S. ST. SHIPPLE SHIPPLE SHAPE AND			6	6				CO CONTRACTOR CONTRACTOR OF THE CONTRACTOR C	The state of the s	
Sideslope (:	.1)		1.9	# P # *********************************	0	16	-					
(Height of Cov		241/	11.3			*****************						
Guardrail (Y/N)	er(111) .	2.4)	No /			*******************	-					No. and the property of the Control
Guaruran (1/N)			No -									
Approach Road	d / Emb	ankme	nt General Rat	ing	8	7		77 77 87 87 87 87 87 88 88 88			***************************************	TRANSPORTER FOR THE STEEL STEE
						Upstre	am End					
Culvert Compo	nent				Last		7	ation of (Condit	ion		
Direction			and the second s		W	_	1					
End Treatment (Others, None)	Concre	ete, Stee	el, STEEL /	·		A						
Headwall			Access to the same of the same		X	X						
Collar					Χ	X		**************************************			MOTERA VIOLEN, IRRIVINISTALARI, IRRIVINISTALARI, IRRIVINISTALARI	
Wingwalls		W			X	17	 					
(Shape:)		******				_X_						
Cutoff Wall						T	-	/n				
			THE WANT THE PARTY OF THE PARTY		X	X			······································			namaka managa managa percepangan di managa i sa ana
(H) =]	Inven	itory	Update.	leguled		Page 13	39 of 213					

			Upstre	eam End
Culvert Component		Last	Now	Explanation of Condition
Bevel End		6	7	
Heaving (mm)	\$ 150			
Invert Above/Below Stream Bed	BELOW /			
Above/Below (mm)	300 /			
Scour Protection		7	7	
(Type: RIP RAP)	and the second of the second s		- /	
(Avg. Rock Size(mm): 200)	1		*********	
Scour/Erosion	and the description of the second state of the second state of the second secon	7	7	
Beavers (Y/N)	No /	Armin Company	1 /	
Upstream End General Rating		6	7	
		F	,	
Culvert Component	T. Company			Ilvert Barrel
>	tion Code: MAIN C	Last		
(Pipe # : 1, Primary Span, Loca	TOTAL CODE: MAIN, S	oan (mm	j: 2973	s, kise (mm): 2007, Type: RPP)
Barrel Last Accessible Date	Oct 6/1	14		
Special Features	· · · · · · · · · · · · · · · · · · ·			
Special Feature		7	6	
(Type : VERT TIMBER STRUTS) /		Arreson Visconia	
Special Feature			X	
(Type:)				
Roof		4	4	
Measured Rise (mm)	1858 1840		1	
Measured At Ring No.	3			
Sag (mm)	149- 167		*******************	
Percent Sag	7 8			7.4%
Sidewall	1	3	3	Pt Proposition of a Conference
Measured Span (mm)	3005 3050			Cracks have changed since last inspection.
Measured At Ring No.	3			REPREDITION OF SEATH WITH SETTING STORY COURT OF STORY OF
Deflection (mm)	92 77	1		2 isolated corrosion spots at south
Percent Deflection	1 3		***************************************	side of R4 could become perforations.
Floor		5	1	
Bulge (mm)	0	5	6	
	Ź			
Abrasion (Y/N)	No 🗸			
Circumferential Seams		6	7	
Separation (mm)	0 /	0		
Longitudinal Seams		1	3	Disco Man and Days III and a second
Total No. of Cracked Rings	2//	3	7	R1 has 8 of 24 cracked valley botts with 70mm steel remaining.
Total No. of Rings with Two Cracked Seams	0 1			All cracks on south wall. Report of 29Sep 2004 shower falling as worst case.
Min. Remaining Steel Between Cracks (mm)	55 70			Crades in RI and RZ with 70 mm remains in RZ. Appears previous measurements may have been crack length wither the
Proper Lap (Y/N)	No	1		man have been crack length worther the
Longitudinal Stagger (Y/N)	Yes /			remaining steel
Coating		5	5	
Corrosion By Soil (Y/N)	Nor Yes	3		Superficial corrosion at isolated upper seams and
Corrosion By Water (Y/N)	Yes			an Ame.
Camber POS/ZERO/NEG	ZERO Neg			
Ponding (Y/N)	No /	44.		

	1			livert Barrel
Culvert Component		Last		
(Pipe #: 1, Primary Span, Loca	tion Code: MAIN, S	pan (mn	1): 297:	3, Rise (mm): 2007, Type: RPP)
Fish Passage Adequacy		5	5	
Baffle		X	X	
(Type:)			***************************************	
Waterway Adequacy		8	4	Grass to near top of struts
Icing (Y/N)	No -			City to Mean of Johnson
Silting (Y/N)	No /	1		
Drift (Y/N)	No			•
Barrel General Rating		3	4	Increase for storts
			17	INCIRES V JULY
		D	-	ream End
Culvert Component		Last	Now	Explanation of Condition
Direction	·	E -		
End Treatment (Concrete, Steel, Others, None)	STEEL			
Headwall		X	X	
Collar		X	X	
Wingwalls		X	X	
(Shape:)				
Cutoff Wall		X	X	
Bevel End		5	6	
Heaving (mm)	8 70			
Invert Above/Below Stream Bed	BELOW -			
Above/Below (mm)	200			
Scour Protection		6	6	
(Type : RIP RAP)				
(Avg. Rock Size(mm): 200)				
Scour/Erosion		6	6	Scour hole 10m D/S. not affecting pipe
Beavers (Y/N)	No			
Downstream End General Ratin	ng	5	6	
		<u> </u>	tructu	re Usage
			Now	Explanation of Condition
Channel (U/S and D/S)				
Alignment		7	7	
Bank Stability		7	7	
HWM (m below Top of Culvert)				HWM not visible.
Drift (Y/N)	No /			
Channel Bottom Degrading/Aggrading	DEGRADING			
Beavers (Y/N)	No /			
(Fish Compensation Measure 1:	NONE)			
(Fish Compensation Measure 2 :	NONE)			
Channel General Rating		7	7	

×.		Mai	Maintenance Recommendations	dations				The same of
Inspector Recommendations	Year	Inspector Commen		Department Comments	nments	Target Year	Fst Cost	Cat #
SHOTCRETE REPAIRS		A Millard efficiency may a some and an appropriate property and the second of the seco	ender von der verschiede gegen von der		and and properties from the process of the process) or the commence of the comme		5
PLACE ADDITIONAL RIP RAP		ederforde sommer is in a bodologic adoption de de después de la seguita sommer de la seguitation des la seguitation de la seguitation designation de la seguitation de la segu	e profesio estado de parte se se selecto de de para se de para e politica de parte de parte de parte de parte	The second secon	APPERENCE OF PERSONS AND ALCOHOLOGY OF THE WASHINGTON TO A SAME CONTRACT AND ALCOHOLOGY AND ALCOHOLOGY.	as a full second caste of the second by the second of the		-
REMOVE DRIFT ACCUMULATION		ann beset societische der der der der der der der der der de	encounts for critical parties of the transmission and consistent encountering and the construction of the		AND THE PROPERTY PROPERTY IN A LOCATION OF THE PROPERTY OF CAST THE PROPERTY OF THE PROPERTY OF THE PASS OF THE PA	and a second dependency of the contraction of the c	Province operation is a test and analysis of the second of	and the second second
INSTALL CONCRETE/STEEL LINING	9		en entrettere destatable fortuna (d.d. mile per entrettere V. entrettere de l'all mille de destatable destatab		es des son des descriptions de descriptions de la constitución de la c	were states of a color deposition to a color and a	er i minera instala in	
INSTALL STRUTS		AND THE PROPERTY OF THE PROPER	er man e e e particular par e en canada de canada e	AND THE REAL PROPERTY OF THE P	e de la compansa de se sense a que as se se ses se se se se se se se se se s	and come or before a desired between crafts and to an expectable definition of contract contr		and the second consistence of
INSTALL CONCRETE COLLAR/CUTOFF	TOFF	an frightening (Fryguns of Fryske), dentalske benearthamski frightening (Angelese campanana).		to a commence of the Art State of the Ar	ni arabi qo'maa ingerina ingeri arabi ni mi matari isa o'danga (qo'tan aqitiga arabi sembarine den benda	and the control of th		And a state of the
REPAIR SEAMS		атор у до интернетительную постигу пост	management of a financial and an analysis of the same	rije po manima prima i renamina na Apanima n	despriede un managemanten de despriede management (part) mentre de la propriede de la compaction de la propriede de la proprie			The process of the same of the
OTHER ACTION	a see a a a se a se a se a se a se a se	THE CONTRACTOR AND THE CONTRACTOR OF THE CONTRAC		THE PERSON NAMED AND PASSED OF	athicke in cold general. In restriction is taken an annote that she integrated productions	To a to the state of the state		And the second s
OTHER ACTION		different de America de Constantina de Constantina de Constantina de Constantina de La constantina de La Consta	A DESCRIPTION OF THE PROPERTY		e de la companya del companya de la companya del companya de la companya del la companya de la c			and a supplement of the supple
OTHER ACTION		And the first of t	de la casa e una semana propria de la casa d	And the control of th	en i en encretação de petidos en esta ana papa de propriences de propriences de propriences de propriences de La composição de la composição de la composição de propriences de propriences de propriences de propriences de	the residence of the first of the first to the first of t		Control of Control of Control
OTHER ACTION	a est sant for facts a deplacementamentamentamentamentamentamentament	and describing from the foresteen on the foresteen and the forest of the	entre de la companya	AND THE PROPERTY OF THE PROPERTY AND THE	manumungigi, quebade genera III y se in tod koder k'Adalek et e basenum en se anglikababababa kan kan	and the state of t	Acceptance of the season of th	
Structural Condition Rating (Last/Now) (%)	Now) 33.3/	Suff (%)	iciency Rating (Last/Now)	57.8/	Est. Repl. Yr 2049	2049 Maint. Reqd. (Y/N)		9/2
Special Reduce inspection Comments for Next Inspection	т сусіе 10 24 вн	Rodyec inspession cycle to 24 and tracks are stable		Department Comments				
Maintenance Reviewed By				Date		Estimated Total	0	
Proposed Long-Term Strategy			description where the control					
On 3-Year Program (Y/N)						entel annimonifetti enterpripario, con esta esta esta enterpripario de la constanta de la constanta de la const		
Proposed Action		ANTIQUE TO THE	MENTAL FOR THE PROPERTY OF THE					
Previous Inspector's Name	Claude Jutras	8	Previous	Previous Assistant's Name				
Next Inspection Date	25-May-2014		Previous	Previous Inspection Date	25-Aug-2009			
Inspection Cycle (Default) (months)	57		delining of the service of the conference of the service of the se			derkiesen generalistische der der verwennen der	e si una propriata de constante de constante de constante de la constante de la constante de la constante de l	
Comment			mentioneres in the residence contained. Also according actives a requirement of an interspectual actives and a	and consistent and depthylythen actions are not consistent and con				
	nadá a provincia menor estado de altra de laste a sejembra de la seguina							•

		·		Brid	ge Cul	vert Inspection			
Bridge File Nu	ımber	13476	-1 Bridge Culv	ert /	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Form Type	CULM		
Year Built		1952				Lot No.	0.0	or profession had been read the descriptions. Assert that of the state has been as	MARTINA DISPOSA AND AND AND AND AND AND AND AND AND AN
Bridge or Town	n Name	-			****	Inspector Name	G-hohe	ects	
Located Over		TRIBU 3.50.1	TARY TO GHO 1, WATERCRS	OSTPINE CREE	K,	Inspector Class	CLA		
Located On		1	ROAD -			Assistant Name			
Water Body Cl	I./Year					Assistant Class			
Navigabil. Cl./						Inspection Date	Oct 10	2014	***************************************
Legal Land Lo	cation	SW SE	C 28 TWP 32	RGE 23 W4M	/	- Arrive Time	2:35		
Longitude, Lat	titude	-113:1	3:03, 51:45:59	_	and the feet of the same and th	Depart Time	3:50	PM	
Road Authority	У	KNEE	HILL COUNTY	/		Data Entry By			
Contract Main.	. Area	UNDE	FINED CMA			Data Entry Date Reviewer Name		COMMENT OF STREET AND STREET AND STREET STRE	and the statement of the state of the statement of the st
Clear Roadway	y/Skew	7.6/	_			Review Date			
AADT/Year	60	100/2	00T(E) 20	14		Dept. Reviewer Na	ma		
Road Classifica	ation	RLU-20	08G-60			Dept. Review Date			
Detour Length	(km)	3 .				Follow-Up By			
Bridge Culver	t Inform	ation	a a programme and fundament is an external enterior unit, before the find desired as a made is a constitution of			1 OHOW-UP BY			
Number of Cul-		A Printed the Parish Laborate	2						
Pipe #	Barrel		Span	Rise (or Dia.)	Туре	Length	Corr. Profile	Pl./Slab Thickness	Shape
1	MAIN		-	1810 —	SP	21.1	152X51	3.0	ROUND
2	MAIN		-	1219	MP	20.5	68X13	3.0	ROUND
Special Feature	es						100/(10	10.0	INCOND
Utility Attachme	ents West r	lw. /		***************************************		Located at)			
Utility Attachme Telephone Power Others	ents West r	lw. /	э он. Row a	nd C105505	Sorth	Gas Municipal Problem (Y/N) No			
Special Feature Utility Attachme Telephone Power Others Remarks	ents West r	lw. /	son Row a	Ad Crossos Approac	South	Gas Municipal Problem (Y/N) No			
Utility Attachme Telephone Power Others	ents West r	lw. /	≈ OH+ Row a	Ad Crosses Approac	South ch Road Now	Gas Municipal Problem (Y/N) No	ndition	local read	1 intersecti
Utility Attachme Telephone Power Others Remarks	ents West r East *	lw. /	SOH ROW a	Ad Crossos Approac	South	Gas Municipal Problem (Y/N) A / Embankment Explanation of Col Located 100 /	ndition	Tocal road	d intersecti
Utility Attachme Telephone Power Others Remarks Horizontal Align	ents West r East **	lw. /	7.600	Approac Last	South ch Road Now	Gas Municipal Problem (Y/N) No	ndition	Tocal road	d intersecti
Utility Attachme Telephone Power Others Remarks Horizontal Align Vertical Alignme Roadway Width	ents West r East **	lw. /		Approac Last	South ch Road Now 6	Gas Municipal Problem (Y/N) No I / Embankment Explanation of Co Located 100 / Grade to no	ndition M note of	Tocal road	1 intersecti
Utility Attachme Telephone Power Others Remarks Horizontal Align Vertical Alignme Roadway Width	West research	lw. /		Approac Last 7 6	South ch Road Now	Gas Municipal Problem (Y/N) A / Embankment Explanation of Col Located 100 /	ndition M note of	Tocal road	d intersecti
Utility Attachme Telephone Power Others Remarks Horizontal Align Vertical Alignme Roadway Width	ents West r East **	/w. /	7.600	Approac Last 7 6	South ch Road Now 6	Gas Municipal Problem (Y/N) A / Embankment Explanation of Col Located 100 / Grade to no	ndition M note of		d intersecti
Utility Attachmed Telephone Power Others Remarks Horizontal Align Vertical Alignmed Roadway Width Embankment Sideslope ((Height of Cov	ents West r East we East we	/w. /	7.600	Approac Last 7 6	South ch Road Now 6	Gas Municipal Problem (Y/N) No I / Embankment Explanation of Co Located 100 / Grade to no	ndition M note of		1 intersecti
Utility Attachme Telephone Power Others Remarks Horizontal Align Vertical Alignme Roadway Width Embankment Sideslope (ents West r East re	/w. / 2 wind	7.600 2.0	Approac Last 7 6	South ch Road Now 6	Gas Municipal Problem (Y/N) A / Embankment Explanation of Col Located 100 / Grade to no	ndition M note of		d intersecti
Utility Attachmed Telephone Power Others Remarks Horizontal Alignmed Vertical Alignmed Roadway Width Embankment Sideslope ((Height of Cox Guardrail (Y/N)	ents West response West response East response West re	/w. / 2 wind	7.600 2.0	Approac Last 7 6 5	South ch Road Now 6 6	Gas Municipal Problem (Y/N) A / Embankment Explanation of Col Located 100 / Grade to no	ndition M note of		dintersecti
Utility Attachme Telephone Power Others Remarks Horizontal Align Vertical Alignme Roadway Width Embankment Sideslope ((Height of Coo Guardrail (Y/N)	west results and the second se	/w. Zavim	7.600 2.0 No nt General Rati	Approac Last 7 6 5	South ch Road Now 6 6	Gas Municipal Problem (Y/N) A / Embankment Explanation of Con Located 100 of Grade to mo	at 1200		d intersecti
Utility Attachmed Telephone Power Others Remarks Horizontal Align Vertical Alignmed Roadway Width Embankment Sideslope ((Height of Cov. Guardrail (Y/N)) Approach Road Culvert Compo	west results and the second se	/w. Zavim	7.600 2.0 No nt General Rati	Approac Last 7 6 5	South ch Roar Now 6 6	Gas Municipal Problem (Y/N) A / Embankment Explanation of Con Grade to no Way sharp shoulde 1.7 M HOC Am End Explanation of Con	at 1200		dintersecti
Utility Attachmed Telephone Power Others Remarks Horizontal Align Vertical Alignmed Roadway Width Embankment Sideslope ((Height of Cox Guardrail (Y/N)) Approach Road Culvert Compo Pipe #: 1, Spa Direction End Treatment (west results an Type:	2.1) Cankmer	7.600 2.0 No No The General Rationary Span)	Approac Last 7 6 5	South ch Roar Now 6 6	Gas Municipal Problem (Y/N) A / Embankment Explanation of Con Located 100 of Grade to no	at 1200		d intersecti
Utility Attachmed Telephone Power Others Remarks Horizontal Align Vertical Alignmed Roadway Width Embankment Sideslope ((Height of Cov. Guardrail (Y/N))	west results an Type:	2.1) Cankmer	7.600 2.0 No No The General Rationary Span)	Approac Last 7 6 5	Ch Road Now 6 6	Gas Municipal Problem (Y/N) A / Embankment Explanation of Con Grade to no Way sharp shoulde 1.7 M HOC Am End Explanation of Con	at 1200		lintersecti
Utility Attachmed Telephone Power Others Remarks Horizontal Align Vertical Alignmed Roadway Width Embankment Sideslope ((Height of Cox Guardrail (Y/N) Approach Road Culvert Compo Pipe #: 1, Spa Direction End Treatment (Others, None)	west results an Type:	2.1) Cankmer	7.600 2.0 No No The General Rationary Span)	Approac Last 7 6	South ch Roar Now 6 6	Gas Municipal Problem (Y/N) A / Embankment Explanation of Con Grade to no Way sharp shoulde 1.7 M HOC Am End Explanation of Con	at 1200		1 intersecti
Utility Attachmed Telephone Power Others Remarks Horizontal Alignmed Vertical Alignm	west results an Type:	2.1) Cankmer	7.600 2.0 No No The General Rationary Span)	Approac Last 7 6 5 5 Last W	Ch Road Now 6 6	Gas Municipal Problem (Y/N) A / Embankment Explanation of Con Grade to no Way sharp shoulde 1.7 M HOC Am End Explanation of Con	at 1200		d intersecti



			Upstre	eam End
Culvert Component		Last	Now	Explanation of Condition
(Pipe #: 1, Span Type: Primar	y Span)			
Cutoff Wall		X	X	
Bevel End	**************************************	4	4	Rust, abrasion alle describe Miner danage at
Heaving (mm)	e 100			Rust, abrasion, allest above to the most and side and floor
Invert Above/Below Stream Bed		1		and floor
Above/Below (mm)	350			
Scour Protection		3	3	No protection both sides
(Type : NONE)		<u> </u>		
(Avg. Rock Size(mm):)	erverse fremme a recommendation of each copy, to place and extension of a section than a place A.A. Amount A.A.			
Scour/Erosion	The state of the s	3	3	Embankment creeing on each side of bevel, 1.8m (photo): with potential for piping
Beavers (Y/N)	No /		_L	political (or pripring
Upstream End General Rating		3	3	
		Pric		Ilvert Barrel
Culvert Component		Last	Now	
(Pipe # : 1, Primary Span, Loca	tion Code: MAIN Soa	-		, Rise (mm): 1810, Type: SP)
Barrel Last Accessible Date	14 Feb 2012 Det 10, 2014		<i>)</i> -	S pipe.
Special Features				
Special Feature			V	
(Type:)		L		
Special Feature			Y	•
(Type:)		L		
Roof		N.	3	5/1/
Measured Rise (mm)	1586 /570	N	2	Bulges in roof, sagging & wavy. Deflections Unusual to have rise & span measurements van this much in a
Measured At Ring No.	1506 /570 5			Adjust sag to 1910 dia.
Sag (mm)				(14.3%, 262mm deflection 29Aug2337) Unable to confirm due to
Percent Sag	244 240 18 13			
Sidewall		2	3	
Measured Span (mm)	2007 2030	3	2	Holes in sidewalls & dents throughout; holes in plate 4 & 5.
Measured At Ring No.	5			
Deflection (mm)	187 220			Adjust deflection for 18 form. 19.
Percent Deflection	11 /2			Dehlections.
Floor	12		5	
Bulge (mm)	0 /	N	<u> </u>	700mm-sfice .
Measured At Ring No.	0 -			
Abrasion (Y/N)	No			
Circumferential Seams	INO		6	
	0	6	6	Tedated
Separation (mm)	0 -	- 1	,	
Longitudinal Seams	- 1 p - 100 1 1 7 d - 100 da 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	6	6	some bolts missing.
Total No. of Cracked Rings Total No. of Rings with Two Cracked Seams	0 -			
Min. Remaining Steel Between Cracks (mm)		· · · · · · · · · · · · · · · · · · ·		
	No /			
· · · · · · · · · · · · · · · · · · ·	Yes /			
Coating		5	4	S. I stained of many
	No Yes		-(Soil staining at upper seams Corresion with pitting an floor
	Yes	**************		Courses with sitting as Ilm
Selection by Water (1714)	103			עושן איי פייוןיין און איו הפונטיוייט

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		В	ridge C	ulvert Barrel
Culvert Component		Last		Explanation of Condition
(Pipe # : 1, Primary Span, Loca	ation Code: MAIN, Sp	oan (m	m):	, Rise (mm): 1810, Type: SP)
Camber POS/ZERO/NEG	ZERO Nag			
Ponding (Y/N)	No /			
Fish Passage Adequacy		7	4	Hanging bevel 3/4
Baffle	(A)(A)(A)	X	X	
(Type:)				
Waterway Adequacy		4	15	Pipe appoars to run full.
Icing (Y/N)	No /			
Silting (Y/N)	No T			
Drift (Y/N)	No /			
Barrel General Rating		3	3	
			1.7	ream End
Culvert Component			Now	
(Pipe # : 1, Span Type: Primar	y Span)	12401	111011	- September of Condition
Direction		E	-	S pipe.
End Treatment (Concrete, Steel, Others, None)	STEEL			
Headwall		X	X	
Collar		X	X	
Wingwalls	THE SHAPE WAS ARREST TO BE STORY AND A STORY AND A STORY OF THE STORY	X	X	
(Shape :)	MARKET STATE OF THE STATE OF TH		·A	
Cutoff Wall		X	X	T- 1-tol 2
Bevel End	1	4	5	Damaged sust & abrasion present. Bolts missing bevel and is filled
Heaving (mm)	200			undermoath with rock. Narrow plate at north side
Invert Above/Below Stream Bed	ABOVE -			
Above/Below (mm)	300 -		· · · · · · · · · · · · · · · · · · ·	Damaged with rock. Narrow plate at north side Shallow rock filled
Scour Protection		N	14	scour holo proport (doggest assess to be seen to be see
(Type: RIP RAP)	THE REAL PROPERTY AND ADDRESS OF THE PROPERTY			took. 29/Aug2007). Scott hat appears shallow.
(Avg. Rock Size(mm) : 400)	AND COMMON THE RESIDENCE AND CONTRACTOR OF THE STREET AND ADDRESS OF THE STREET, AND CONTRACTORS	7	·	Partial erosion due to cattle action.
Scour/Erosion		N	4	
Beavers (Y/N)	No /			
Downstream End General Ratin	g	4	4	
			Upstre	am End
Culvert Component	TO THE OWNER OF THE OWNER OWNER OWNER OF THE OWNER OWN	Last	Now	Explanation of Condition
(Pipe # : 2, Span Type: Second	ary Span)			
Direction		W		Npipe. / Located 20 M North of Primary
End Treatment (Concrete, Steel, Others, None)	STEEL			
Headwall		X	X	
Collar		Х	X	
Vingwalls		Х	X	
(Shape:)		-		
Cutoff Wall	The state of the s	Х	X	

Culvert Community		1.	1	eam End
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 2, Span Type: Secon	dary Span)		1	
Bevel End		5	5	
Heaving (mm)	100 /			
Invert Above/Below Stream Bed		ļ		At streambed.
Above/Below (mm)	0 /	ļ		
Scour Protection	<u> </u>	5	5	
(Type: NONE) Natu	<i>10</i> V			
(Avg. Rock Size(mm):)		T	7	
Scour/Erosion		5	5	
Beavers (Y/N)	No			
Upstream End General Rating		5	5	
		Brid		livert Barrel
Culvert Component		1	1	Explanation of Condition
(Pipe # : 2, Secondary Span, L	ocation Code: MAIN. S		nm):	, Rise (mm): 1219, Type: MP)
Barrel Last Accessible Date	14-Feb-2012 OCT 10,2014			N pipe.
Special Features		1		
Special Feature			X	
Type:)		l		
Special Feature	and a complete of the control of the second		X	_ , _ /
Type:)		L	17	Isolated
Roof		2	3	Bulges in roof, sagging & wavy.
Measured Rise (mm)	1025 1030	-		
Measured At Ring No.	4			At Same section 2 from the (chate).
Sag (mm)	184 159		·	
Percent Sag	18 /3		***********************	Deflections
Sidewall		3	3	
Measured Span (mm)	1380 1375			Damaged sidewall at barrel section 4 - repaired.
Measured At Ring No.	4			At barrel anation 3 from u/s.
Deflection (mm)	16+ 156			
Percent Deflection	(13) V	-		Doflections
loor		4	U	Tolotal lands at 12
Bulge (mm)	0 /	4	7_	Isolated perforation at R2 compler. Remainder of flow is adequate
Measured At Ring No.		The first belong and consequent	************	Kemamaer of from is adoquete
Abrasion (Y/N)	No /			V
Circumferential Seams	1.10	4	U	Couples correded the second of
Separation (mm)	160	4		Coupler corroded through at floor at seam 2 from u/s (photo).
ongitudinal Seams	,,,,	6	1-	Divotted cooper
Total No. of Cracked Rings	0 /	6	6	Rivetted seams.
Total No. of Rings with Two	0			
Cracked Seams Min. Remaining Steel		01-7947-AAAA-1-190-11-00-0-0-0-0-0-0-0-0-0-0-0-0-0-0		
Between Cracks (mm)				
Proper Lap (Y/N)	No /			
Longitudinal Stagger (Y/N)	Yes			Isolated
oating		4	3	Rust with pitting. Performled complex at RZ
Corrosion By Soil (Y/N)	No -			Total Cooper St.
Corrosion By Water (Y/N)	Yes /	***************************************		
amber POS/ZERO/NEG	ZERO /	MATERIAL PROPERTY.		

13476 -1 Bridge Culvert

		Bri	dge Cı	ulvert Barrel
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 2, Secondary Span, L	ocation Code: MAIN	Span (mm):	, Rise (mm): 1219, Type: MP)
Ponding (Y/N)	No			
Fish Passage Adequacy		4	4	D/S invert 700mm above icalia localis 2 ed Scorr his le
			1	
Baffle		X	$\perp X$	
(Type:)				
Waterway Adequacy	-	5	5	Duy this inspection. Pipe somes as
Icing (Y/N)	No /			over flow
Silting (Y/N)	No -			
Drift (Y/N)	No _		_	
Barrel General Rating		2	3	"Proting not for their control DAS AT.
		D	ownst	ream End
Culvert Component			7	Explanation of Condition
(Pipe # : 2, Span Type: Secon	dary Span)			
Direction		E	/	N pipe. /
End Treatment (Concrete, Steel Others, None)	, STEEL	1	***************************************	
Headwall		×	X	
Collar		X	X	
Wingwalls		X	×	
(Shape:)				
Cutoff Wall		X	X	
Bevel End		4	5	Bevel end replaced - poor inclass & has settled minor settlemen
Heaving (mm)	10 -		10	bover end replaced - post-modal a rias settled. Pri nov 3 ea 1-2
Invert Above/Below Stream Bed		1	***************************************	At SB
Above/Below (mm)	500 0	-		
Scour Protection		3	U	Protectur around pine is adapparte Mi
(Type : RIP RAP)			1	Scar 513, 1
(Avg. Rock Size(mm): 400)		***************************************	***************************************	Minus Jocalized
Scour/Erosion		3	4	Protection ground pipe is adoquate. Min scorr. DIS, Minor localized Not affecting pipe Large scour hole; measures 15m dia., depth 700mm (depth to lee
Beavers (Y/N)	No /			
TO THE PROPERTY OF THE PROPERTY AND ADDRESS AND ADDRES		-	1 -	
Downstream End General Rati	ng	3	4	
		S	tructu	re Usage
		Last		Explanation of Condition
Channel (U/S and D/S)				/hus
Alignment	-	4	5	SPCSP structure also straight alignment, hereaser MP outlet makes a 90 deg. bend to the N.
Bank Stability	100 TO 10	5	4	Sluffing bank at uls of SPESP
HWM (m below Top of Culvert)			1	HWM not visible.
Drift (Y/N)	No /	1		
Channel Bottom Degrading/Aggrading	DEGRADING /			D/S of both pipes.
Beavers (Y/N)	No /	1		
(Fish Compensation Measure 1 :	4	.1		
Fish Compensation Measure 2:				

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	5	Structu	re Usage
	Last	Now	Explanation of Condition
Channel General Rating	4	4	

		Maintenance Recommendations	nmendations					
Inspector Recommendations	Year Inspe	Inspector Comments	Department C	omments	Ta	Target Year E	Est. Cost	Cat#
SHOTCRETE REPAIRS		20pm Sm3 clay and 5m2 Cl. 1	542C(.1	an en englische die Gebergstein der dem eine den eine eine der von der des eines der dem eines der der der der			the six a page of court, physicians of the 6 of decount of constraints	A Constitution of states of a state of a sta
PLACE ADDITIONAL RIP RAP	2017 Place	Place 1880 But at us bevel of main span & primary porter at halp als ende High priority due to popular porter	due Primary P.	natertial			is made in a common party of price temperature, and the second party and	
REMOVE DRIFT ACCUMULATION					comment a a a a describing on describing a comment or section of the comment of t	and the depotent states at 1 and 2 characters.	and the second s	Annual Value of Street
INSTALL CONCRETE/STEEL LINING	gors Seal	al flood porforation in Rh	82 of 1200 pipe with	e with	THE RESIDENCE OF THE PROPERTY	actual property property for a control of the contr	A STREET, AND THE PERSON OF TH	and the second s
INSTALL STRUTS		ahr. I	>	e de calminato, y militar a della della di manueri consporta anno a qualitabada i si qui di qui esco				Contract of the Contract of th
INSTALL CONCRETE COLLAR/CUTOFF	FF FF				and the second s		a ci biquipas escrippe trans a pro a principalida e sisti	
REPAIR SEAMS						And Control of Control Control Control Control	and the second of the second o	A COUNTY OF THE PARTY OF THE PA
OTHER ACTION	2017 Cone	Consider replacing pipes in 5yrs.	ALT TO A COLUMN TO THE PROPERTY OF THE PROPERT	encember of the designation of the section of the s	The second secon			And the second second second second
OTHER ACTION			especiale shifteen anne Northeannach ann a sean Northeannachdagae () anneach ar c' c' c' c' an an ambain anne	де и иниститурация да де де Менений ураний выполнений и поставлений и поставлений выполнений выполнений выполн			nga (njinjingapa) i sebesah padi sina sama	A CONTRACTOR CONTRACTOR
OTHER ACTION			de et est protocoment de est o de protocoment de est o de est est est est est est est est est es	дений дений и дений в техничений дений			gardingdaga abadanan angangs as strateg a	and the second s
OTHER ACTION								
Structural Condition Rating (Last/Now) (%)	w) 22.2 <i>l</i>	Sufficiency Rating (Last/Now) (%)	() 28.0/	Est. Repl. Yr	2023	Maint. Reqd. (Y/N)	J. (Y/N)	200
Special Reptace in conjunction with LRA roan Comments for Monitor & replace when copplition was Next Inspection rating. No reform of Clerk Confirmation Summerful to confirm rise in collection summerful to Confirm rise in Confirmation confi	hen copdition warrants act for the copolition warrants act yelefte 27 mths. CB 2002, to confirm rise measuram to LPA & AT on 77F90201, unders at AT.	Reflece in conjunction with ERA road program. Monitor & replace when condition warrants action, no action recommended for \$25 rating. Action of the confirmation of \$2002/08/08/08. Revise in summerfall to confirm rise measurament in main span; place on \$7 min or close in summerfall to confirm rise measurament in main span; place on \$7 min or close in summerfall to \$2007/09/08/09/09/09/09/09/09/09/09/09/09/09/09/09/	Comments Comments Lake	Inspection Cycle changed to 27mths as per contractor inspection	anged to 27mt	hs as per cor	tractor insp	pection
Maintenance Reviewed By	Darron Ahlstedt		Date	20-Jul-2012	Estil	Estimated Total	0	
Proposed Long-Term Strategy								
On 3-Year Program (Y/N)	VANAGARANA, ANA CANAGARANA				manana a penampuna padalah kiri banan kepada pada pada kepada pada pada pada pada pada pada pada			
Proposed Action								
Previous Inspector's Name	Glen Mikesh	LA .	Previous Assistant's Name	Je				
Next Inspection Date	14-May-2014	<u> </u>	Previous Inspection Date	14-Feb-2012	~			
Inspection Cycle (Modified) (months)	27		ALL STATES AND ALL ST	Арона-Аладения фонкциянальная два перестипности, в пода также технят		and the restricted of the controlled states of the second states of the second species.		Andreas of the second s
Comment	Inspection Cycle changed to	nged to 27mths as per contractor inspection	spection					
ABITONY MAKESTER OF ALL AND			formal formal encountered and the second of the first of	Anny investigate of the indicate of the contract of the contra				

AADT HOURLY CONVERSION FACTORS FOR LOCAL ROADS - 1988

	banker di manifestation annual l								
	8			HO	HOUR ENDING	ING			
	6	10	Π	12	13	7	15	16	1
JANUARY	21.81	20.42	19.20	18.46	19.59	16.84	18.11	15.00	14 33
FEBRUARY	21.79	20.24	16.66	17.34	18.88	16.66	16.03	13.49	13.28
MARCH	20.24	18.47	17.34	17.34	18.08	15.45	15.45	13.93	17 68
APRIL	19.31	17.34	16.34	17.00	17.34	15.17	15.17	13.70	17.00
MAY	15.45	16.03	15.45	16.03	16.03	14.40	13.93	12 32	12 14
JUNE	16.34	15.74	14.65	14.65	16.03	13.93	14.16	12 50	17.77
JULY	20.73	17.34	16.03	16.03	17.00	14.01	0 4 4 4	00:71	11.37
A TO Y CONTACTOR AND A STATE OF THE STATE OF				COLOR	17.00	14.71	14.05	14.40	13.07
AUGUST	20.73	17.34	14.91	14.91	16.03	13.28	13.28	13.07	11.97
SEPTEMBER	19.31	18.47	16.66	16.66	17.34	15.17	14.65	13 03	12.07
OCTOBER	15.33	13.80	15.33	14.68	15.00	13.52	13.26	11 60	10.07
NOVEMBER	20.29	18.15	16.04	16.42	16.82	15.33	14.68	13.60	06.11
DECEMBER	23.79	19.71	15.68	15.68	16.82	14.37	1437	17.00	17.77
		Management of the Control of the Con					10:14	17.00	13.40

ESTIMATED AADT = NO. OF VEHICLES THAT C

NO. OF VEHICLES THAT CROSS $_X$ CONVERSION FACTOR BRIDGE STRUCTURE IN ONE HOUR

BIM RATING SYSTEM

BIM RATING	CONDITION/ FUNCTIONALITY	MAINTENANCE PRIORITY
9	NEW CONDITION	NOT APPLICABLE
8	ALMOST NEW	NOT APPLICABLE
7	LITTLE EFFORT TO UPGRADE TO NEW CONDITION	NOT REQUIRED
6	NO DISTRESS OR DETERIORATION CAUSING LOSS OF FUNCTIONALITY	NOT REQUIRED
5	ACCEPTABLE CONDITION AND FUNCTIONING AS INTENDED	NONE REQUIRED TO MAINTAIN FUNCTIONALITY
4	BELOW MINIMUM DESIRABLE CONDITION	LOW PRIORITY – NOT LIKELY BEFORE NEXT INSPECTION
3	DISTRESS/DETERIORATION SIGNIFICANTLY AFFEECTING FUNCTIONALITY	MEDIUM PRIORITY – REPAIR/REPLACE/ SIGN IN NEAR FUTURE, BEFORE NEXT INSPECTION
2	MAJOR DETERIORATION AND/OR DISTRESS ENDANGERING FUNCTIONALITY	HIGH PRIORITY – FOR REPALCE/REPAIR/SIGN, CONTINUED OBSERVATION REAUIRED UNTIL WORK DONE
1	COLLAPSE IMMINENT/DANGER TO USERS	CLOSE/SIGN AND/OR REPLACE AS SOON AS POSSIBLE IMMIDIATE ACTION REQUIRED

Legal Loads

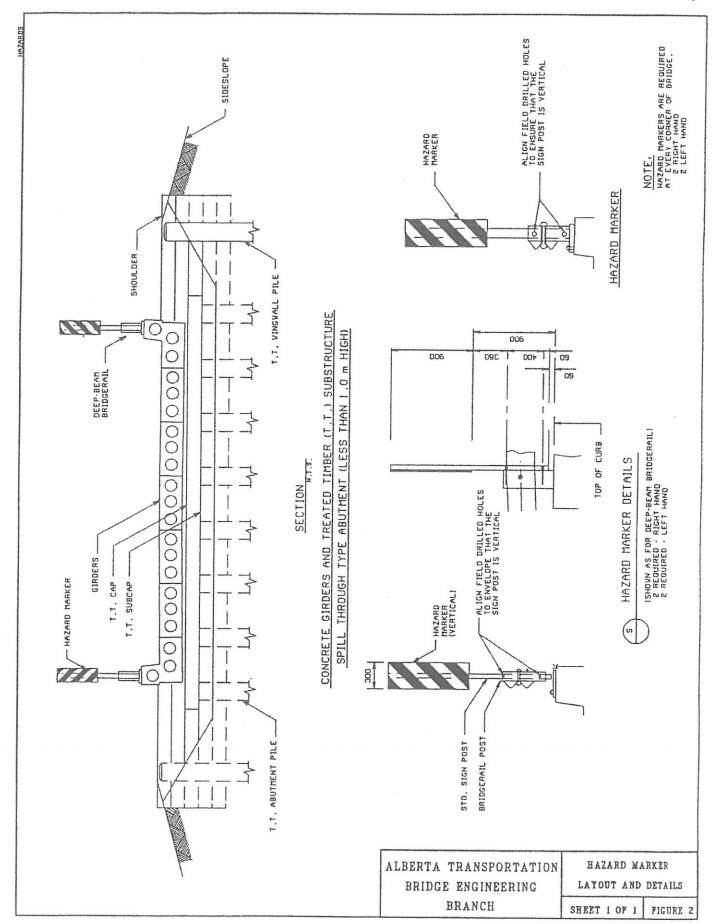
Highway C			
	CS1 Truck	CS2 Truck	CS3 Truck
	Single Unit	Semi-Trailer	Truck-Trains
Primary	28	49	63.5
Secondary	28	49	63.5
Local	28	49	54

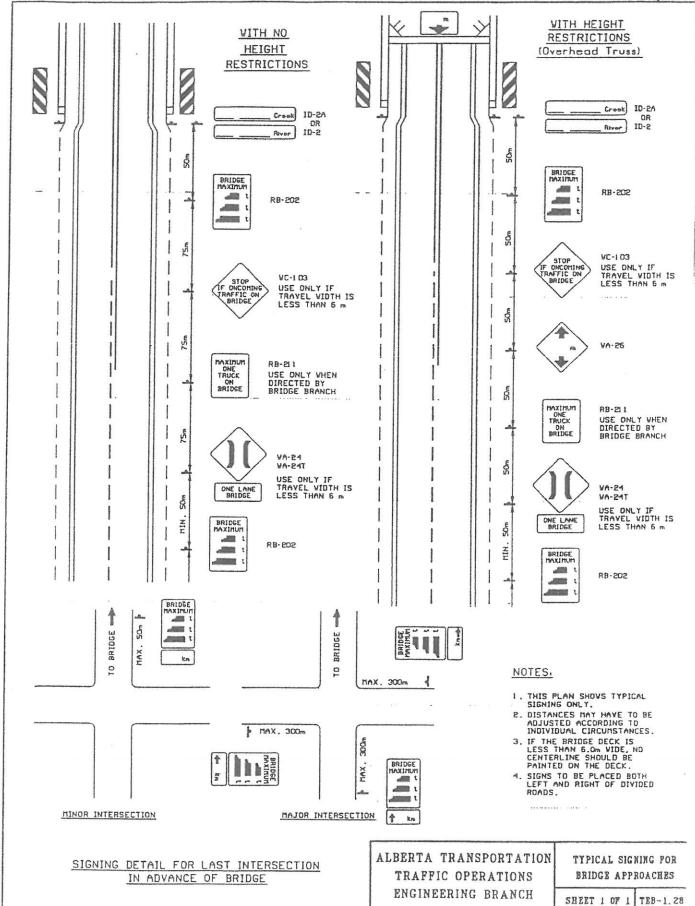
Note: Loads are expressed in tonnes

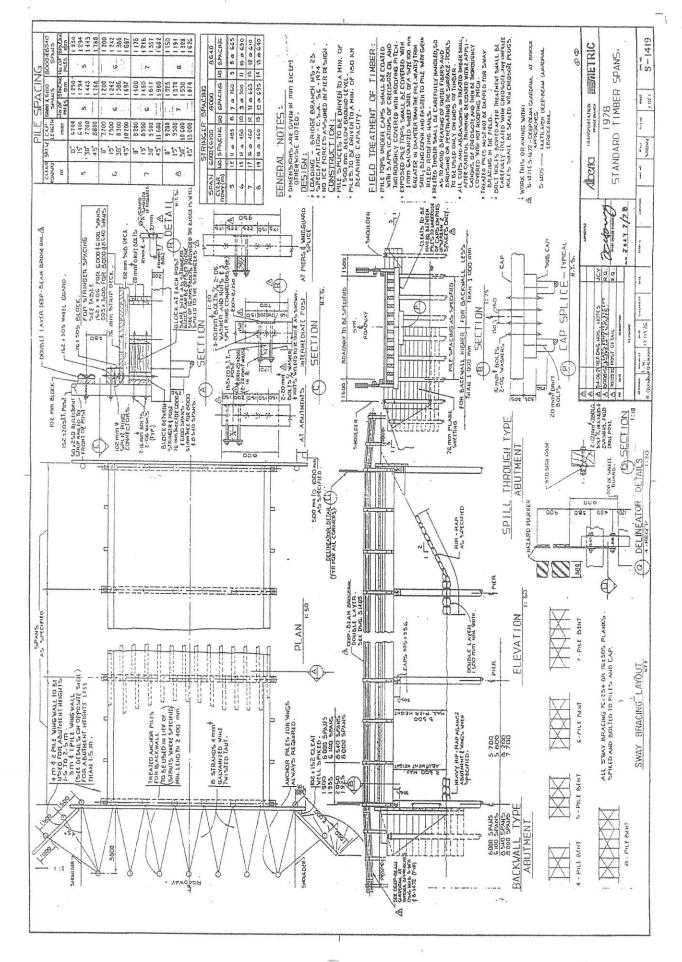


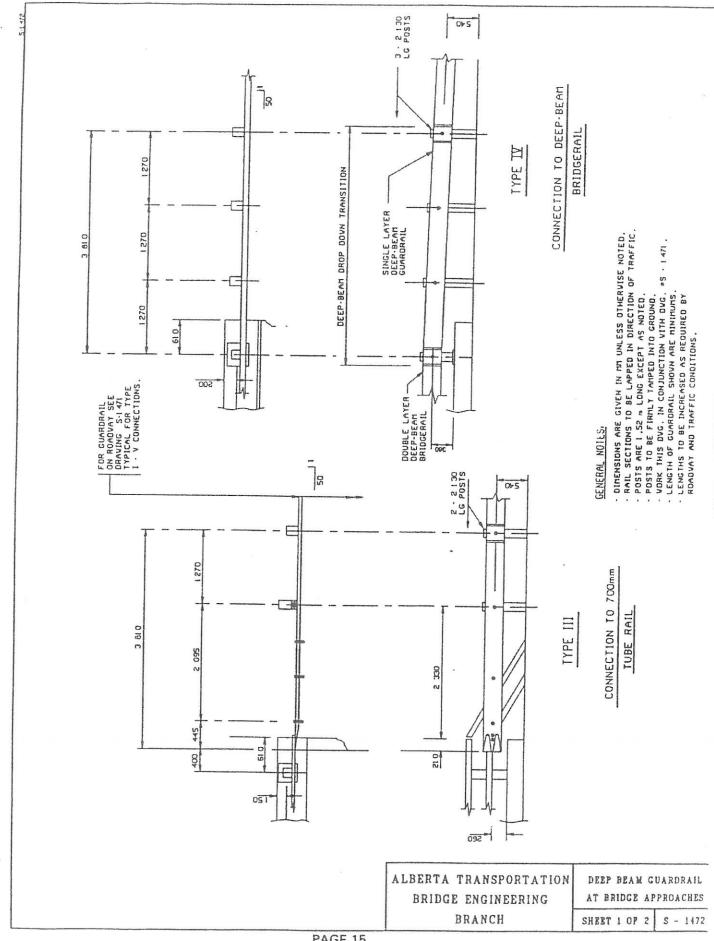
Bridge Engineering Section Technical Standards Branch

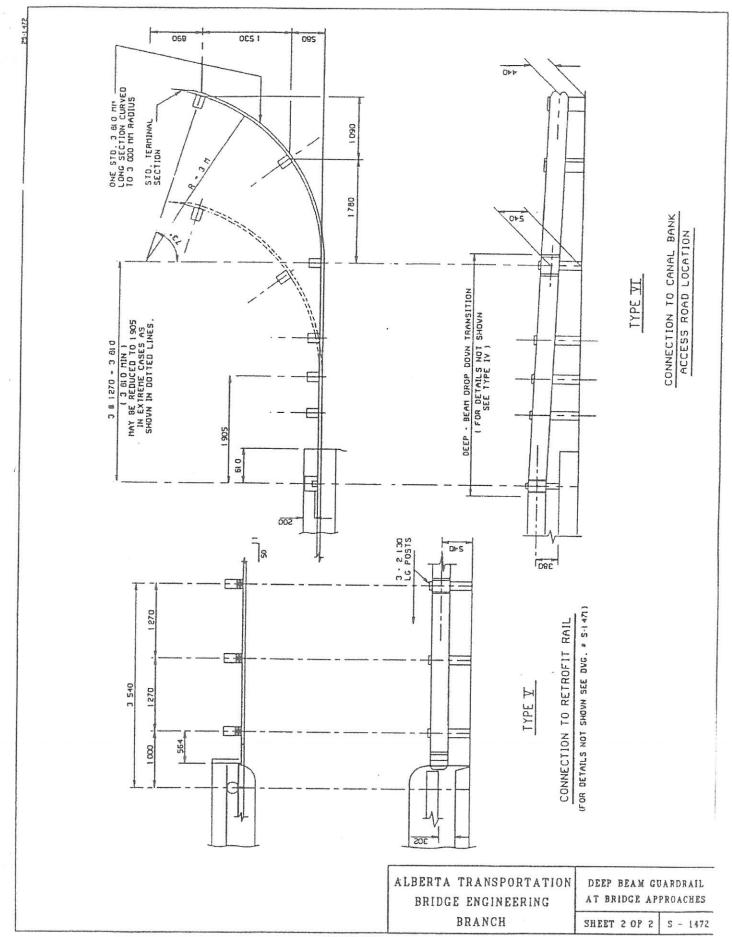


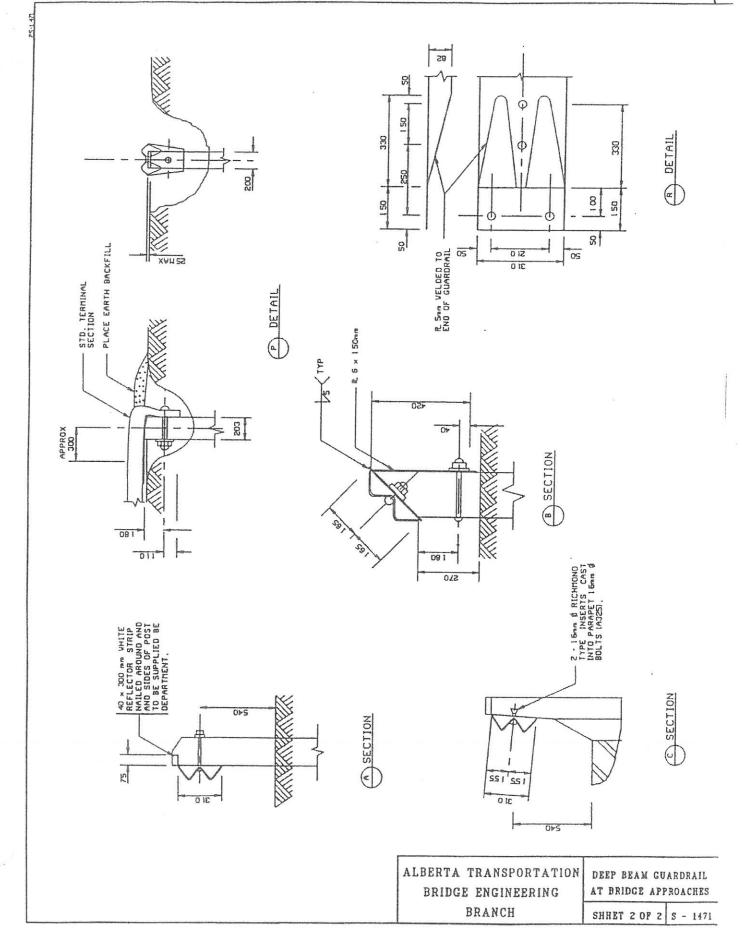


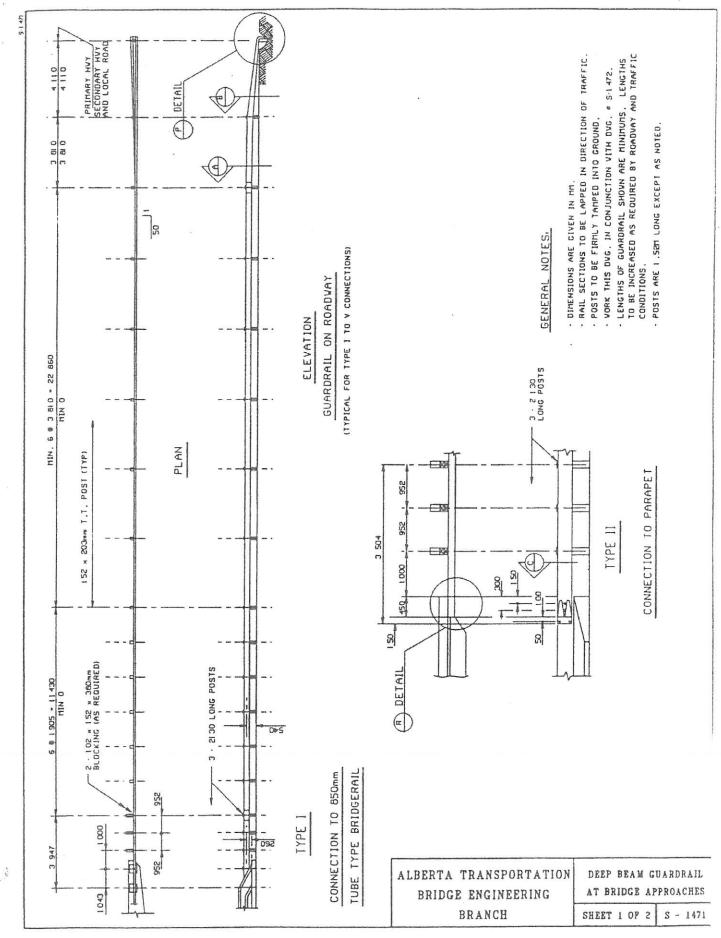


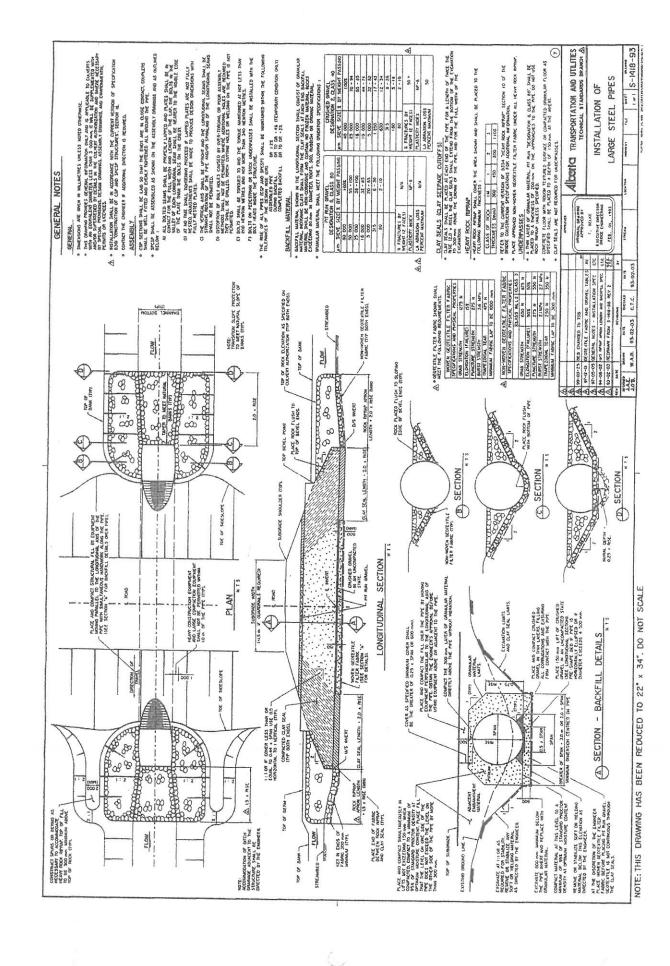












Bridges and Structures

Standard and Typical Detail Drawings

Standard Drawings are engineered documents. The Consultant shall refer directly to these documents on the project detailed drawings and shall include them in the drawing tender set. However, the Consultant shall be aware that these Standard Drawings often require project specific engineering and detailing which shall be included on the detailed drawings. Standard Drawings are occassionally updated and Consultants shall ensure they are including the latest vertison of the drawings in their tender set.

Typical Detail Drawings are not engineered documents, rather are documents provided to demonstrate the Department's preferred details. Consultants shall utilize the preferred details unless otherwise permitted by the Department. Consultants are fully responsible to properly design and draft all details on the project detailed drawings. Typical Detail Drawings shall not be included in the drawing tender set.

All current Standard and Typical Detail Drawings can be found using the following links:

- Barriers
- Precast Girders
- Steel Girders
- Deck and Deck Joints
- Bearings
- Culverts
- Bridge Construction Specification Drawings
- Miscellaneous

All Active Standard and Typical Detail Drawings (sorted by drawing number)

Non-current archived Standard and Typical Detail Drawings are provided for use with bridge assessments and rehabilitations and can be found using the following link:

All Non-Current Archived Standard and Typical Detail Drawings (sorted by drawing number)

http://www.transportation.alberta.ca/4738.htm

03/01/07

LACOMBE COUNTY Item Listing March 1, 2007

59980 LUMBER TREATED 3X10X20' Inventory Part 59980 SAL 3X10X20 SALVAGE LUMBER app wt 175 lbs 59985 LUMBER TREATED 3X10X22' Inventory Part 59990 LUMBER TREATED 3X10X24 Inventory Part	0 90.00 0 200.00 0 200.00 0 200.00 0 39.36 0 33.92 48 56.64 79 65.38 159 71.07 79 84.96 121 94.40 3 10.00 3 103.83 83 113.28 89 122.20 8 13.00
2921 PRECAST 11.6 M Inventory Part 2925 PRECAST 11.6 M Inventory Part 2929 PRECAST 11.6 M Inventory Part 59940 LUMBER TREATED 2X12X16' Inventory Part 59945 LUMBER TREATED 3X10X12' Inventory Part 59960 LUMBER TREATED 3X10X12' Inventory Part 59965 LUMBER TREATED 3X10X14' Inventory Part 59970 LUMBER TREATED 3X10X16' Inventory Part 59975 LUMBER TREATED 3X10X18' Inventory Part 59980 LUMBER TREATED 3X10X20' Inventory Part 59980 SAL 3X10X20 SALVAGE LUMBER app wt 175 lbs 59985 LUMBER TREATED 3X10X22' Inventory Part 59990 LUMBER TREATED 3X10X24' Inventory Part	0 200.00 0 200.00 0 200.00 0 39.36 0 33.92 48 56.64 79 65.38 159 71.07 79 84.96 121 94.40 3 10.00 3 103.83 83 113.28 89 122.20 8 13.00
2929 PRECAST 11.6 Inventory Part 2929 PRECAST 11.6 Inventory Part 59940 LUMBER TREATED 2X12X16' Inventory Part 59945 LUMBER TREATED 3X8X14' Inventory Part 59960 LUMBER TREATED 3X10X12' Inventory Part 59965 LUMBER TREATED 3X10X14' Inventory Part 59970 LUMBER TREATED 3X10X16' Inventory Part 59975 LUMBER TREATED 3X10X18' Inventory Part 59980 LUMBER TREATED 3X10X20' Inventory Part 59980 SAL 3X10X20 SALVAGE LUMBER app wt 175 lbs 59985 LUMBER TREATED 3X10X22' Inventory Part 59990 LUMBER TREATED 3X10X22' Inventory Part 59990 LUMBER TREATED 3X10X22' Inventory Part 59990 LUMBER TREATED 3X10X24' Inventory Part 59990 LUMBER TREATED 3X10X24' Inventory Part	0 200.00 0 200.00 0 39.36 0 33.92 48 56.64 79 65.38 159 71.07 79 84.96 121 94.40 3 10.00 3 103.83 83 113.28 89 122.20 8 13.00
S9940	0 200.00 0 39.36 0 33.92 48 56.64 79 65.38 159 71.07 79 84.96 121 94.40 3 10.00 3 103.83 83 113.28 89 122.20 8 13.00
S9945	0 39.36 0 33.92 48 56.64 79 65.38 159 71.07 79 84.96 121 94.40 3 10.00 3 103.83 13.83 89 122.20 8 13.00
Inventory Part	0 33.92 48 56.64 79 65.38 159 71.07 79 84.96 121 94.40 3 10.00 3 103.83 83 113.28 89 122.20 8 13.00
Inventory Part	48 56.64 79 65.38 159 71.07 79 84.96 121 94.40 3 10.00 3 103.83 83 113.28 89 122.20 8 13.00
Inventory Part	79 65,38 159 71.07 79 84.96 121 94.40 3 10.00 3 103.83 83 113.28 89 122.20 8 13.00
S9975	159 71.07 79 84.96 121 94.40 3 10.00 3 103.83 83 113.28 89 122.20 8 13.00
S9980	79 84,96 121 94,40 3 10,00 3 103,83 83 113,83 89 122,20 8 13,00
59980 SAL 3X10X20 SALVAGE LUMBER app wt 175 lbs Inventory Part 59985 LUMBER TREATED 3X10X22 Inventory Part 59990 LUMBER TREATED 3X10X24 Inventory Part 19990 SALVAGE LUMBER TREATED 3X10X24 INVENTOR 19990 SALVAGE LUMBER SALVAGE SALVAGE SALVAGE	121 94,40 3 10,00 3 103,83 83 113,28 89 122,20 8 13,00
59985 LUMBER TREATED 3X10X22' Inventory Part LUMBER TREATED 3X10X24 Inventory Part	3 10.00 3 103.83 83 113.28 89 122.20 8 13.00
59990 LUMBER TREATED 3X10X24 Inventory Part	3 103.83 83 113.28 89 122.20 8 13.00
Inventory Part	83 113.28 89 122.20 8 13.00
	89 122.20 8 13.00
Inventor Part	8 13.00
59997 HIMPER TREATER OVACANA INVENTORY Part	
60000 IUMPED TREATED OVER Inventory Part	2 57.00
60005 LIMBER TREATER OXIONA III Inventory Part	193 67.95
60010 ILIMADED TIPEATED ON EXAMPLE Inventory Part	87 79.29
60010 SAI 3Y12Y16 SAI VACE LIMPED APPLY	19 88.94
60015 LIMARED TREATED SYSTEM Inventory Part	0 9.60
60020 LIMPED TREATER ONLINE	12 101.94
50020 SAI 3X12X20 SAI VACE	0 113.28
60025 LIMARED TREATER OVER 100 Inventory Part	2 12.00
60025 SAL 3X12Y22 SALVAGE LUMPED CCEPTA	1 130.34
60030 HIMBER TREATED 2012/06 Biveniory Part	0 13.20
DINISI SAI 2Y12Y24 CALVACE LUBERTO TERMINA	46 135.92
LUMBER TREATED 4X6X16'	0 14.40
60050 LUMBER TREATED 4X6X18' Inventory Part	28 49.14
LUMBER TREATED 4X6X20'	33 59.08
LUMBER TREATED 4X10X20' Inventory Part	16 66.71
LUMBER TREATED 4X12X18'	0.00
LUMBER TREATED 4X12X20' Inventor Part	0 110.56
buoled 4x12x20used Inventory Park	16 132.56
LUMBEH THEATED 4X12X22	0 61.44 0 135.13
LOWIDER TREATED 4X12X24' Inventory Dead	
4A1ZAZ4 SALVAGE LUMBER 96FBM Inventory Bod	
LUMBEH THEATED 4X12X26"	
TATIZAZO SALVAGE LUMBER 104 FRM	0 20.80
LOWISER TREATED 4X12X28'	16 223.33
TATEACO SALVAGE LUMBER 112 FRB	0 22.40
60130 LIMBER TREATED 6X8X18 Inventory Part	0 103.09
60135 LIMBED TREATED CARAZZ 88 FBM Inventory Part	0 172.85
60145 Inventory Part	0 235.15
60175 ILIMPED TREATED CALCALZ Inventory Part 2	149.14
60180 Inventory Part	3 298.28
DUISU SAL 6Y12Y26 CALVACE LIMADED ADDED	55 323.14
60185 LUMBER TREATED 6Y12Y27' Inventory Part 1	1 31.20
DUZUS HIMRER TREATED 6Y16YOU	4 335.57
60205 SAL 6X16X20 SALVACE LIMPED 100FDM	0 415.53
60210 LUMBER TREATED 8X20X28'	2 32.00
60210 SAL 8X20X28 SALVAGE LUMBER 373ERM	
60210 USED	0 74.66
LOWDEN INCATED TOXITOXID	0.00
60214 LUMBER TREATED 10X16X16' Inventory Part	8 343.85
60214 SAL 10X16X16 SALVAGE LUMBER 213FBM Inventory Part	0.00
LUMBER TREATED 12X12X14'	
LUMBER TREATED 12X12X16'	
LOMBER I REALED 12X12X18	
LOWIDER THEATED 12X12X24* Inventor, Deal	
LUMBER TREATED 12X12X26'	
LUMBER I REALED 12X12X28 Inventor Part	
LOWIDED THEATED 12X12X30	
LOWDEN INCATED IZX14XB	
60280 Inventory Part	
60280 LUMBER TREATED 12X14X12' Inventory Part 14	

LACOMBE COUNTY Item Listing March 1, 2007

Item	Description	Туре	Quantity On Hand	Price
60290	LUMBER TREATED 12X14X15'	Inventory Part	67	435.00
60291	LUMBER TREATED FRAMED 12X14X15'	Inventory Part	7	407.03
60300	LUMBER TREATED 12X14X18'	Inventory Part	1	612.96
60305	LUMBER TREATED 12X14X20'	Inventory Part	12	653.83
60310	LUMBER TREATED 12X14X22'	Inventory Part	0	681.07
60315	LUMBER TREATED 12X14X24'	Inventory Part	19	817.28
60320	LUMBRT TREATED 12X14X25'	Inventory Part	17	850.50
60325	LUMBER TREATED 12X14X26	Inventory Part	14	884.52
60330	LUMBER TREATED 12X14X27'	Inventory Part	10	918.54
60335	LUMBER TREATED 12X14X28'	Inventory Part	5	958.65
60340	LUMBER TREATED 12X14X30'	Inventory Part	1	1,020.60
60360	PILING UNTREATED 35'	Inventory Part	51	245.53
60365	PILING UNTREATED 40'	Inventory Part	36	292.80
60380 60385	PILING TREATED 20'	Inventory Part	130	200.31
60390	PILING TREATED 25'	Inventory Part	0	251.26
60395	PILING TREATED 30' PILING TREATED 35'	Inventory Part	0	301.27
60400	PILING TREATED 35	Inventory Part	193	355.86
60405 -	PILING TREATED 45'	Inventory Part	32	402.91
60410	PILING TREATED 45	Inventory Part	78	449.57
61845	LUMBER TREATED 6X8X8*	Inventory Part	115	491.39
74200	DECKING TREATED/CCA 2X12X20'	Inventory Part Inventory Part	0	42.70
74210	DECKING TREATED/CCA 3X10X16'	Inventory Part	0	53.07
74215	DECKING TREATED/CCA 3X10X18'	Inventory Part	0	53.07
74220	DECKING TREATED/CCA 3X10X20'	Inventory Part	0	79.96 66.34
74225	DECKING TREATED/CCA 3X12X14'	Inventory Part	0	62,22
74230	DECKING TREATED/CCA 3X12X16'	Inventory Part	153	62.99
74235	DECKING TREATED/CCA 3X12X18'	Inventory Part	,55	95.94
74237	DECKING TREATED/CCA 3X12X20'	Inventory Part	393	85.75
74240	LUMBER TREATED/CCA6x6x20	Inventory Part	61	85.00
MISC		Inventory Part	0	0.00
neoprene 23		Inventory Part	669.27	34.00
neoprene 46		Inventory Part	19.95	68.00
NPN		Inventory Part	-161.75	0.00
P0042	6.1 M PRECAST G LHF	Inventory Part	0	200.00
P0043	6.1 M PRECAST G LHF	Inventory Part	1	200.00
P0044	6.1 M PRECAST G LHF	Inventory Part	1	200.00
P0045	6.1 M PRECAST G LHF	Inventory Part	1	200.00
P0046 P0049	6.1 M PRECAST G LHF	Inventory Part	1	200.00
P0090	6.1 M PRECAST G LHF	Inventory Part	1	200.00
P0091	7.6 M PRECAST VS	Inventory Part	1	200.00
P0166	7.6 M PRECAST VS 11.6 M PRECAST "HC" CURB	Inventory Part	1	200.00
P0167	11.6 M PRECAST "HC" CURB	Inventory Part	1	200.00
P0169	11.6 M PRECAST HC	Inventory Part	1	200.00
P0170	11.6 M PRECAST HC	Inventory Part	0	200.00
P0171	11.6 M PRECAST HC	Inventory Part Inventory Part	1	200.00
P0172	11.6 M PRECAST HC	Inventory Part	1	200.00
P0173	11.6 M PRECAST HC	Inventory Part	1	200.00
P0174	11.6 M PRECAST HC	Inventory Part	1	200.00 200.00
P0175	11.6 M PRECAST HC	Inventory Part	1	200.00
P0176	11.6 M PRECAST HC	Inventory Part	i	200.00
P0248	6.1M PRECAST G	Inventory Part	Ô	200.00
P0350	6.1 M PRECAST G LHF	Inventory Part	1	200.00
P0351	6.1 M PRECAST G LHF	Inventory Part	i	200.00
P0353	6.1 M PRECAST G LHF	Inventory Part	i	200.00
P0356	6.1 M PRECAST G LHF	Inventory Part	1	200.00
P0357	6.1 M PRECAST G LHF	Inventory Part	i	200.00
P0358	6.1 M PRECAST G LHF	Inventory Part	i	200.00
P0359	6.1 M PRECAST G LHF	Inventory Part	1	200.00
P0360	6.1 M PRECAST G LHF	Inventory Part	1	200.00
P0361	6.1 M PRECAST G LHF	Inventory Part	1	200.00
P0362	6.1 M PRECAST G LHF	Inventory Part	1	200.00
P0363	6.1 M PRECAST G LHF	Inventory Part	1	200.00
P0364	6.1 M PRECAST HH LHF	Inventory Part	1	200.00
P0365	6.1 M PRECAST HH LHF	Inventory Part	1	200.00
	C 4 13 DDCCACT DUD DC			
P0366 P0367	6.1 M PRECAST HH LHF 6.1 M PRECAST HH LHF	Inventory Part	1	200.00

03/01/07

Item Listing March 1, 2007

Item	Description	Туре	Quantity On Hand	Price
P0508	6.1 M PRECAST HH RHF	Inventory Part	1	***************************************
P0509	6.1 M PRECAST HH RHF	Inventory Part	1	200.00
P0510	6.1 M PRECAST G RHF	Inventory Part	i	200.00
P0511 P0512	6.1 M PRECAST HH RHF	Inventory Part	i	200.00
P0513	6.1 M PRECAST HH RHF	Inventory Part		200.00
P0514	6.1 M PRECAST HH RHF	Inventory Part	1	200.00
P0550	6.1 M PRECAST HH RHF 6.1 M PRECAST HH LHF	Inventory Part	1	200.00
P0551	6.1 M PRECAST HH LHF	Inventory Part	1	200.00
P0552	6.1 M PRECAST HH LHF	Inventory Part	1	200.00
P0553	6.1 M PRECAST HH LHF	Inventory Part	1	200.00
P0554	6.1 M PRECAST HH LHF	Inventory Part	1	200.00
P0555	6.1 M PRECAST HH LHF	Inventory Part Inventory Part	1	200.00
P0556	6.1 M PRECAST HH LHF	Inventory Part	1	200.00
P0557	6.1 M PRECAST HH LHF	Inventory Part	1	200.00
P0558	6.1 M PRECAST HH LHF	Inventory Part	1	200.00
P0559	6.1 M PRECAST HH LHF	Inventory Part	1	200.00
P0560	6.1 M PRECAST HH LHF	Inventory Part	1	200.00
P0561	6.1 M PRECAST HH LHF	Inventory Part	1	200.00
P0562	6.1 M PRECAST HH LHF	Inventory Part	1	200.00
P0563 P0564	6.1 M PRECAST HH LHF	Inventory Part	i	200.00 200.00
P0565	6.1 M PRECAST HH LHF	Inventory Part	1	200.00
P0566	6.1 M PRECAST HH LHF	Inventory Part	i	200.00
P0567	6.1 M PRECAST HH LHF	Inventory Part	1	200.00
P0568	6.1 M PRECAST HH LHF	Inventory Part	1	200.00
P0569	6.1 M PRECAST HH LHF 6.1 M PRECAST HH LHF	Inventory Part	1	200.00
P0570	6.1 M PRECAST HH LHF	Inventory Part	1	200.00
P0573	6.1 M PRECAST HH LHF	Inventory Part	1	200.00
P0614	8.5 M PRECAST LHF	Inventory Part	1	200,00
P0615	8.5 M PRECAST HC LHF	Inventory Part	1	200.00
P0626	8.5 M PRECAST VS	Inventory Part	1	200.00
P0627	7.6 M PRECAST VS	Inventory Part Inventory Part	1	200.00
P0633	7.6 M PRECAST VS	Inventory Part	1	200.00
P0634	7.6 M PRECAST VS	Inventory Part	1	200.00
² 0636	7.6 M PRECAST VS	Inventory Part	1	200.00
20660 20661	10.1 M PRECAST "HC"	Inventory Part	1	200.00
20673	10.1 M PRECAST "HC"	Inventory Part	i	200.00
23038	10.1 M PRECAST "HC"	Inventory Part	1	200.00
23056	6.1 M PRECAST "HC" 12.2 M PRECAST "HC"	Inventory Part	0	200.00
3057	12.2 M PRECAST "HC"	Inventory Part	1	200.00
3058	12.2 M PRECAST "HC"	Inventory Part	1	200.00
3061	12.2 M PRECAST "HC"	Inventory Part	1	200.00
3062	12.2 M PRECAST "HC"	Inventory Part	1	200.00
3063	12.2 M PRECAST "HC"	Inventory Part Inventory Part	1	200.00
3064	12.2 M PRECAST "HC"	Inventory Part	1	200.00
	6.1 PRECAST "G"	Inventory Part	1	200.00
3073	6.1 M PRECAST "G"	Inventory Part	0	200.00
	6.1 M PRECAST "G"	Inventory Part	1 0	200.00
	6.1 M PRECAST "G"	Inventory Part	1	200.00
	6.1 M PRECAST G LHF	Inventory Part	'	200.00
3089	6.1 M PRECAST "G"	Inventory Part	1	200.00
	6.1 M PRECAST "A"	Inventory Part	i	200.00
	8.5 M PRECAST	Inventory Part	1	200.00
2424	8.5 M PRECAST	Inventory Part	i	200.00
	8.5 M PRECAST	Inventory Part	T	200.00
2000	8.5 M PRECAST 8.5 M PRECAST	Inventory Part	1	200.00
	10.1 M PRECAST "HC" CURB	Inventory Part	1	200.00
2.2	10.1 M PRECAST "HC" CURB	Inventory Part	1	200.00
	10.1 M PRECAST "HC" CURB	Inventory Part	1	200.00
	10.1 M PRECAST HC CURB	Inventory Part	1	200.00
4336	10.1 M PRECAST HC CURB	Inventory Part	1	200.00
5267	8.5 M PRECAST HC LHF	Inventory Part	1	200.00
5305	B.5 M PRECAST "HC" 15 LHF	Inventory Part	1	200.00
		Inventory Part	1	200.00

5% Vertic	ally Ellips	a Pipes
Diameter	Span	Rise
1500	1429	1575
1810	1724	1901
2120	2019	2226
2430	2314	2552
2740	2610	2877
3050	2905	3203
3360	3200	3528
3670	3495	3854
3990	3800	4190
4300	4095	4515
4610	4390	4841
4920	4686	5165
5230	4981	5492
5540	5276	5817
5850	5571	6142
6160	5866	6468

Ar	ch Culve	rts
Equivalent Diameter	Span	Rise
	CSP	
1524	1829	1118
1676	1854	1397
1829	2057	1499
1981	2210	1600
2134	2413	1702
2286	2616	1803
2438	2845	1905
	SPCSP	
1676	1854	1397
·1753	1930	1448
1829	2057	1499
1905	2134	1549
1981	2210	1600
2057	2337	1651
2134	2413	1702
2210	2489	1753
2286	2616	1803
2362	2464	1854
2438	2845	1905
2515	2896	1956
2591	2972	2007
2667	3124	2057
2743	3251	2108
2819	3327	2159
2896	3480	2210
2972	3531	2261
3048	3607	2311
3124	3759	2362
3200	3810	2413
3277	3861	2464
3353	3912	2540
3429	4089	2565
3505	4242	2616
3581	4293	2667
3658	4343	2718
3734	4521	2769
3810	4674	2819
3886	4724	2870
3962	4775	2921
4039	4826	2997
4115	5004	3023
4191	5055	3073

BIM INSPECTION MANUAL UPDATE

INSPECTION AND RATING OF CULVERTS WITH STRUTS

EFFECTS OF STRUTS ON ELEMENT AND GENERAL RATINGS

There are many culverts on the Provincial road system that are strutted with either steel or timber struts. While the intent is not to arbitrarily increase the barrel general rating due to the presence of the struts, there are situations where a 1 or 2 rating point increase to the barrel general rating may be justified.

If the following guidelines are met, then the inspector has the flexibility to increase the barrel general rating by a maximum of 2 rating points (not to exceed a barrel general rating of 4) without increasing the element rating.

RATING GUIDELINES

- The inspector must verify the struts have been in place for 2 years or more. This is to ensure that the struts and culvert are stable.
- The struts must be in good condition (i.e. rated as a "special feature" at 5 or more).
- The culvert must have at least 1 permanent reference point for measuring and future monitoring.
- The culvert struts must be inspected on a minimum ½ cycle, or after any significant flood event. Ideally, struts should be inspected every spring to ensure they are tight and have not been damaged by ice or run-off.
- Consideration should be given to the size of the culvert and to the depth of cover over the culvert. (Complete failure of a large diameter culvert under high fills may not be as threatening to public safety as the failure of the same culvert under shallow fill).
- The rating increase would not apply to any culvert with deflections greater than 30%, or with cracked seams with less than 25 mm or remaining steel.
- The rating increase is applied to the "general rating" only. The "element rating" (i.e. seams, barrel, roof, etc) would not change.



Helpful Tips For Bridge Inspection



The following suggestions are offered to Class B inspectors in the hope that it may save them repeat visits to a site for additional information.

1. Make sure that you are at the correct site:

- (a) on bridges check for file tags.
- (b) check the description of the structure to see if it matches the information on the top of the first page of your BIM report (span types, lengths, culvert size, skew, etc.).

2. Ratings that are 4 or less require:

- (a) description of the problem in the explanation of condition section.
- (b) photographs or sketches to back up your rating.
- (c) measurements (this may mean marking the actual element like a girder with a crayon to measure crack growth).
- (d) maintenance recommendations.
- (e) remark in special comments section if follow up is needed (checking the load rating). Monitoring of elements would also be mentioned here.
- (f) enter the next inspection date if it is needed before the next inspection cycle.
- (g) if the rating is 1 or 2, call the proper authority ASAP.

3. Cross out comments that are no longer applicable:

A comment such as "large scour hole at D/S end" may have been repaired since the last inspection. This should be crossed out.

4. Discrepancies between the last inspection and the current one:

You have to determine why there is a difference of 2 or more between the two inspections. Is it because:

- (a) if the last inspection was rated 3 (poor) and you feel it should be rated 7 (good), maybe the problem has been fixed since the last inspection.
- (b) during the last inspection the ground could have been snow covered or there may have been a higher water level which could explain why something like a scour hole or backwall sheeting not being low enough was missed.
- (c) the last inspector could have rated it incorrectly.

5. Don't leave the site until you have:

- (a) determined all ratings and all general ratings.
- (b) taken all measurements.
- (c) taken any necessary pictures.
- (d) made any maintenance recommendations.
- (e) checked and confirmed all inventory items.
- (f) noted any monitoring.

SECTION III

Mass of Materials

Timber:

Untreated Treated Untreated Treated Pi	Piling		4000 2	lbs/fbm . 25 lbs/ft .		1800	kg/fbm 7 kg/m
Steel Pip 356 mm x 406 mm x 406 mm x 508 mm x 610 mm x 762 mm x	7 mm 6 mm 7 mm 7 mm 10 mm		42 59 94	.2 lbs/ft .4 lbs/ft .4 lbs/ft . .4 lbs/ft . .9 lbs/ft .		62. 70. 88. 140.	6 kg/m 3 kg/m 1 kg/m 8 kg/m
Steel Pil HP 250 x 6 HP 310 x 7 HP 310 x 9 HP 360 x 1	62 79 04		6	3 lbs/ft . 3 lbs/ft .		7 9	9 kg/m 4 kg/m
Miscella 3.81 m Fle 6" x 8" x 5' 6" x 8" x 7'	xbeam T.T. Po	st		.75 lbs.		3	33.9 kg
Reinford Bar Desig Mass	-dente-	10 M .785 .53	15 M 1.570 1.05	20 M 2.335 1.57	25 M 3.925 2.63	30 M 5.495 3.69	35 M 7.850 5.27

Steel Plate:

Thickness in mm (inches)	kg per square metre	Pounds per square foot
9.5 (3/8)	74.80	15.3
12.7 (1/2)	99.76	20.4
16.0 (5/8)	124.70	25.5
19 (3/4)	149.60	30.6
22 (7/8)	174.57	35.7
25.4 (1)	195.10	40.8
29 (1 1/8)	224.45	45.9
32 (1 1/4)	249.39	51.0
35 (1 3/8)	274.33	56.1
38.1 (1 1/2)	292.27	61.2
44.5 (1 3/4)	349.15	71.4
50.8 (2)	399.02	81.6

Material:

	kg per	lbs per
		cubic
	metre	foot
Crushed Rock	2000	125
Sand	1925	120
Dry Earth	1550	95
ACP		
Concrete	2400	150
Water	1000	62.4

	Weight of Bridge	Materials —	Treated Ti	mber
	Туре		LBS.	
	3" x 8" x 10'	20	80	36
	3" x 8" x 12'	24	96	44
	3" x 8" x 14'	28	112	51
	3" x 8" x 16'		128	58
	3" x 8" x 18'	36	144	65
	3" x 8" x 20'	40	160	73
	3" x 8" x 22"	44	176	80
	3" > 10" > 10'	0.5	400	4.5
	3" x 10" x 10'	20	100	45
	3" x 10" x 14'	35	140	54
_	3" x 10" x 16'	40	160	72
	3" x 10" x 18'	45	180	
	3" x 10" x 20'	50	200	91
	3" x 10" x 22'		220	100
	3" x 10" x 24'	60	240	109
	3" x 10" x 26'	65	260	118
	3" x 12" x 10'	20	100	5 4
	3" x 12" x 12'	36	144	54
	3" x 12" x 14'	42	168	76
	3" x 12""x 16'	48	192	87
	3" x 12" x 18'	54	216	98
	3" x 12" x 20'	60	240	109
	3" x 12" x 22'	66	254	115
<u>.</u>	3" x 12" x 24'		288	131
	3" x 12" x 26'		312	142
	4" x 10" x 8'	21	107	49
	4" x 10" x 12'	۸۸	160	60
	4" x 10" x 14"	47	107	/3
	4" x 10" x 16'		212	07
	4" x 10" x 18'	60	240	100
	4" x 10" x 20'	67	268	122
	4" x 10" x 22'		293	133
-	4" x 10" x 24'		320	145
	4" x 10" x 26'		347	157

Weight of Bridg Type 4" x 12" x 8'	F.B.M. 32	LBS 128	KG 58 73 87 102 116 130 145 160 174
12" x 12" x 8'		480 576 672 768 864 960 1056 1152 1248 1344	217 261 304 348 391 435 479 522 566
12" x 14" x 8'		560 672 784 896 1008 1120 1232 1344 1456 1568	254 304 355 406 457 508 559 609 660

	Weight	of Bridge	Materials -	— Treated	Timber
	Type	_		LBS.	
_	6" x 12" x 8'		48	192	87
	6" x 12" x 10'		60	240	108
	6" x 12" x 12'		72	288	130
	6" x 12" x 14"		84	336	152
	6" x 12" x 16'	* * * * * * * * * * * *	96	384	174
	6" x 12" x 18'		108	432	196
	6" x 12" x 20'		120	480	218
	6" x 12" x 22'		132		240
	6" x 12" x 24'		144	576	261
	6" x 12" x 26'			624	283
	6" x 14" x 8'		56	224	102
	6" x 14" x 10"	******	70	280	127
	6" x 14" x 12'		84		152
	6" x 14" x 14'		98	392	178
	6" x 14" x 16'		112	448	203
	6" x 14" x 18"		126	504	229
	6" x 14" x 20'		140	560	254
	6" x 14" x 22'		154	616	279
	6" x 14" x 24'		168	672	304
	6" x 14" x 26'		182	728	330
	6" x 16" x 8'		64	256	110
	6" x 16" x 10"	* * * * * * * * * * * * *	80	320	1/5
	6" x 16" x 12'		96	384	174
	6" x 16" x 14'		112	448	203
	6" x 16" x 16'		128	512	232
	6" X 16" X 18"		144	576	261
	6" x 16" x 20'		160	640	290
	6" x 16" x 22'		176	704	319
	6" x 16" x 24'		192	768	348
	6" x 16" x 26'		208	832	377
	Weight (of Bridge I	Materials –	Trooted 3	Timbor
	Туре	or bridge i	F.B.M.		
	8" x 20" x 8'			A 100 TO	
	8" x 20" x 10'		134	522	2/12
	8" x 20" x 12"		160	640	290
	8" x 20" x 14"		187	747	339
	8" x 20" x 16'		213	853	387

Weight of Bridge		eated Timber
Туре	F.B.M.	LBS. KG.
8" x 20" x 18'	240 267 294 320 346 373	1066
Weight of Bridge M	aterials — Untr	eated Timber
	F.B.M.	
3" x 8" x 10'	24 28 32 36 40 44	72
3" x 10" x 10'	30	90
3" x 12" x 10'	36	108 49 126 57 144 65 162 74 180 82 198 90
12" x 12" x 10'	144	432 196

Weight of Bridge		
Туре	F.B.M.	LBS. KG.
12" x 12" x 16'		
12" x 12" x 18'		
12" x 12" x 20'		
12" x 12" x 22'		
12" x 12" x 24'		
12" x 12" x 26'		
12" x 12" x 28'		
12" x 12" x 30'		
12" x 12" x 32'	384	.1152523

Bailey Bridge Components and Their Weights

	LBS.	KG.
Standard Panel	603	. 274.00
Panel Pin		
End Posts	130	. 59.00
Transom (floorbeams)	470	. 213.63
Interior Stringers	183	. 83.20
Edge Stringers	190	. 86.40
Sway Brace	65	. 29.50
Chord Reinforcing	210	. 95.45
Chord Bolts		
Bracing Frame	40	. 18.20
Raker	18	. 8.20
Transom Clamp	6	. 2.72
Bearing	70	. 31.80
Base Plate		
Mark I Link	12	. 5.45
Mark II Link	28	. 12.72
Rocking Roller	202	. 91.80
Plain Roller	105	. 47.70

SECTION IV

Weights of Precast Units

Calculated Weights of Standard VS Units With Semi-Light Weight Aggregate

Weights	in	Tonnes	
Interior			Curb

Ler	ıç	jt	h									I	n	teric	r						Curb)()5	its	3
20'		•								p				4.76	3	4 4					6.264								. 4	1
																					7.791									
																					9.359									
35'														8.33	6		*			1	0.905	*							. (3

SM Units Semi-Light Weight Aggregates

Length	Interior	Curb	Posts
6 m			
8 m			
10 m			
11 m	8.67	. 11.61	5

Calculated Weights of Precast Units in Tonnes. Standard Weight Aggregate

66B 1	0	E 2	
"" PH		Units"	
		VIIII	

Length Interior 20' 3.435 28' 4.728 33' 5.517 38' 6.352	6.897 8.067
"G Units"	
Length Interior	Curbs
20'	4.383 6.260
"VH Units"	
Length Interior	Curbs
20'	5.336
28' 4.147	5.309
33'	9.342

Calculated Weights of Precast Units in Tonnes. Standard Weight Aggregate - Con't.

A COULT OF CIT OF	Weight Aggrega	
"E Units"		
Length	Interior	Curbs
30'	7.963	10.694
35'		12.464
40'		
42'	10.998	14.868
"M Units"	l-Ai	Curbs
Length	Interior	Curbs
40'	44.000	
40		15.839
42'		
	12.234	16.636
42'		
42'		
42'		
42'		

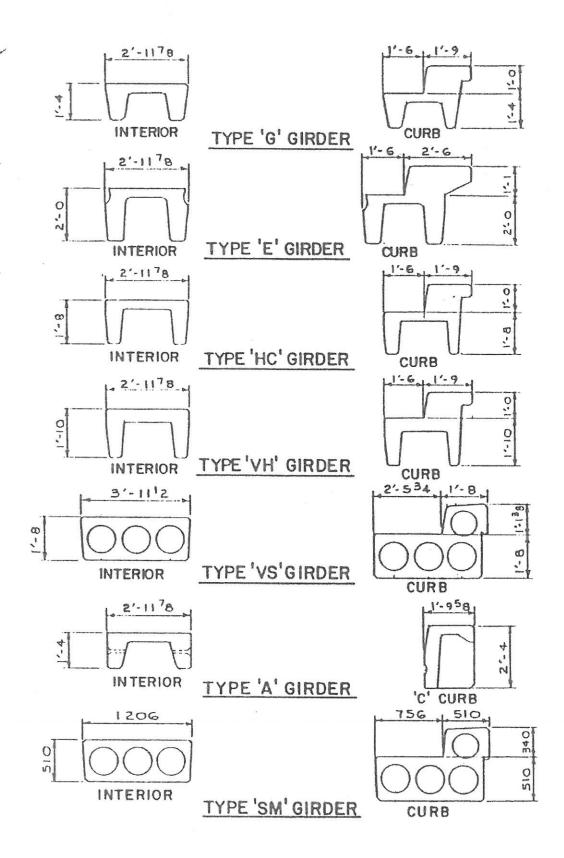
"FC" Units - Standard Weights

Length	Tonnes	Length	Tonnes
40'	16.924	80'	32.668
45'	18.874	85'	34.619
50'	20.917	90'	35.345
55'	22.868	95'	38.612
60'	24.773	100'	
65'	26.724	105'	50.363
70'	28.766	110'	52.722
75'	30.717	115'	55.127

"FC" Units - Semi-Light Weight

Length	Tonnes	Length	Tonnes
85'	26.679	110'	42.123
90'	28.448	115'	44.038
95'	30.036	120'	45.917
100'	38.294	125'	47.866
105'	40.209		

Sketch of Precast Units



Rope Specification Table

All Weights, Footage and Tensile Strength Figures shown on this list are approximate and are subject to the **STANDARD** 5% **TOLERANCE**.

Size	9	Т	ensile Stre	ength	Wei	ght lbs/	100 ft
Dia.	Circ.	Manila	Nylon	Poly- propylene	Manila	Nylon	Poly- propylene
3/16"	9/16"	450	960	725	1.5	1.2	.75
1/4"	3/4"	600	1500	1250	2	1.8	1.1
5/16"	1"	1000	2400	1925	2.9	2.9	1.8
3/8"	1-1/8"	1350	3400	2550	4.1	4.1	2.5
1/2"	1-1/2"	2650	6200	4150	7.5	6.7	4.9
5/8"	2"	4400	10,000	6500	13.1	11.3	8.1
3/4"	2-1/4"	5400	14,000	8700	16.7	14.7	12
7/8"	2-3/4"	7700	19,000	11,000	22.5	23.5	15
1"	3"	9000	24,000	14,400	27	27	17.6
1-1/8"	3-1/2"	12,000	31,500	18,750	36	37	27.6
1-1/4"	3-3/4"	13,500	36,000	21,000	41.8	42	31
1-5/16"	4"	15,000	42,000	24,000	48	48	36
1-1/2"	4-1/2"	18,500	51,000	30,250	60	57	43
1-5/8"	5"	22,500	62,000	36,400	75	72	52
1-3/4"	5-1/2"	26,500	75,000	43,600	90	85	56
2"	6"	31,000	89,500	52,000	108	103	63

Note — Weights and strengths vary with different constructions.

The following tables of loads are included to provide an indication of what can be expected from a hook based on its throat opening. Refer to the manufacturers' ratings for specific values of specific hooks.

Eye Hooks, Shank Hooks, Swivel Hooks Forged Alloy Steel (Safety Factor = 5)

Maximum Safe Working Load
(Pounds)
600
800
1,500
2,000
2,500
4,000
4,500
5,000
5,500
6,000
6,800
8,000
8,400
10,000
10,400
11,000
12,500
13,000
16,000
18,000
19,200
20,000
24,000
26,000
33,400



Chain Slip Hooks

(Clevis Type and Eye Type)
Forged Alloy Steel
(Safety Factor = 4)



Clevis Type

Eye Type

Throat Opening (Inches)	For Size of Chain (Inches)	Maximum Safe Working Load (Pounds)
15/16 11/16 15/16 15/16 19/16 111/16 2 21/8 23/4 3	1/ ₄ 5/ ₁₆ 3/ ₈ 7/ ₁₆ 1/ ₂ 5/ ₈ 3/ ₄ 7/ ₈ 1	2,750 4,300 5,250 7,000 9,000 13,500 19,250 26,000 34,000

Typical Sorting Hook Forged Alloy Steel



I.D. of Eye Opening at Top of Hook Safe Working Load 2½" From Tip Safe Working Load at Bottom of Hook 1½" 2¹³/₁₆" 2 Tons 7½ Tons

Chain Grab Hooks

(Clevis Type and Eye Type) Forged Alloy Steel



Eye Type

Type **Throat** For Size Maximum Safe Opening of Chain Working Load (Inches) (Inches) (Pounds) 2,750 11/32 7/16 1/2 9/16 21/32 25/32 15/16 1/4 5/16 3/8 7/16 1/2 5/8 3/4 7/8 4,300 5,250 7,000 9,000 13,500 19,250 11/16 26,000 34,000 13/16

Sliding Choker Hooks

Forged Alloy Steel (Safety Factor = 5)



Throat	For Rope	Maximum Safe
Opening	Size	Working Load
(Inches)	(Inches)	(Pounds)
1/2 5/8 7/8 11/8 11/8 17/16 13/4 23/16	1/4 - 5/16 3/8 1/2 5/8 3/4 7/8 - 1 11/8 - 11/4 13/8 - 11/2	1,500 2,600 3,400 5,100 8,000 15,000 23,000 30,000

SAFE WORKING LOADS FOR WIRE ROPE

[-			1 = 1	
V	Mpo	3	9	S		B
1	8	\cup		1	^	
	VERTICAL		BASKET	60°	90°	120°
EYE LOOP	LIFT	НІТСН	HITCH	W.L.L. 2 LEGS	W.L.L 2LEGS	W.L.L. 2 LEGS
ROPE SIZE (Inches)	TONS (2000 lbs)	TONS (2000 lbs)	TONS (2000 lbs)	TONS (2000 lbs		TONS (2000 lbs)
1/4	.60	.45	1.20	1.00	.84	.60
3/8	1.34	1.00	2.65	2.30	1.85	1.34
1/2	2.40	1.80	4.80	4.10	3.35	2.40
5/8	3.50	2.60	7.00	6.20	5.00	3.50
3/4	5.40	4.00	10.80	9.20	7.50	5.40
7/8	7.00	5.20	14.00	12.00	9.80	7.00
	9.10	6.80	18.20	16.00	13.00	9.10
11/8	11.30	8.40	22.60	19.40	15.80	11.30
11/4	13.50	10.10	27.00	23.20	18.90	13.50
13/8	16.40	12.30	32.80	28.20	22.90	16.40
11/2	19.40	15.00	38.80	34.00	27.10	19.40
15/8	23.50	17.60	47.00	40.40	32.90	23.50
13/4	27.00	20.20	54.00	46.40	37.80	27.00
17/8	30.50	22.80	61.00	52.40	47.70	30.50
2	35.00	26.00	70.00	60.00	49.00	35.00

CALCULATED ON THE BASIS OF 5-1 WORKING LOAD FACTOR

Using Wire Rope Industries Ltd. 6×19 or 6×37 classification. The regular lay is preformed improved plow steel with independent wire rope centre.

Safe Working Loads for Chain Slings

Nominal	Single	Double Chain Slings			Doub		ings	
Chain Size	Chain 90°		△ ser•		•		-	
mm 7 10 13 16 19/20	kg 1500 3200 5400 8000 11,500	1	kg 2500 5500 9300 3,800 9,900	4500 7600 11,300 16,200	0	kg 1500 3200 5400 8000 11,500		
inch 1/4 3/8 1/2 5/8 3/4	lbs 3300 7040 11,880 17,600 25,300	20 30	lbs 5500 2,100 0,460 0,360 3,780	16,726 24,866 35,646	0 0 0 0	lbs 3300 7040 11,880 17,600 25,300		
Nominal Chain Size	T Au	Triple and Quad			n Sli	ings ඌ් ტ්		
mm 7 10 13 16 19/20	kg 3800 3800 14,000 20,700 29,800		6 11, 16,	kg 100 700 400 900 300		kg 2250 4800 8100 12,000 17,200		
inch 1/4 3/8 1/2 5/8 3/4	lbs 8360 18,260 30,800 45,540 65,560		14, 25, 37,	lbs 820 740 080 180 460		lbs 4950 10,560 17,820 26,400 37,840		

Calculated on the basis of a 4 – 1 working load factor.

Miscellaneous

Bolted Connection

Bolt tension	
Bolt Size	
(A325 Bolts)	

(A020 B0115)	(kilonewtons)
M16 x 2	250 L.
M20 x 2.5	94.2
M24 x 3	147
100 mm	212
M30 x 3.5	337
M36 x 4	490

Refer to Construction Specifications Section 6 "Structural Steel Erection" for details and methods of checking bolt tension.

Minimum Edge Distance For Drilled Holes in Members

		In	IAI	er	r	1	C
Rolt	Sizo						

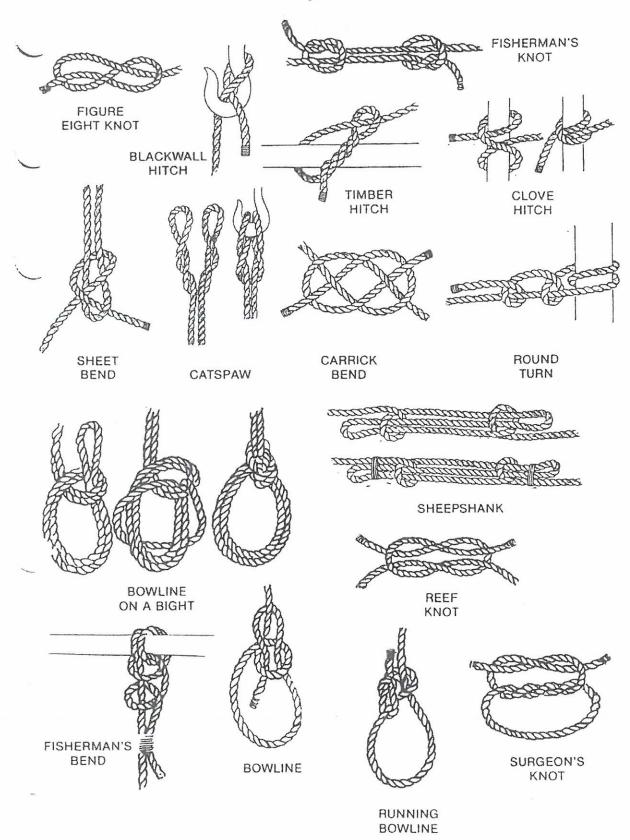
Minimum distance center of hole to edge of material

Minimum Bolt Tension

10	to day of material
19 mm	32 mm
22 mm	02 IIIII
ZZ 111111	40 mm
	70 11111

Minimum bolt spacing center to center 3 times bolt dia, preferred minimum spacing 76 mm

Rope Knots

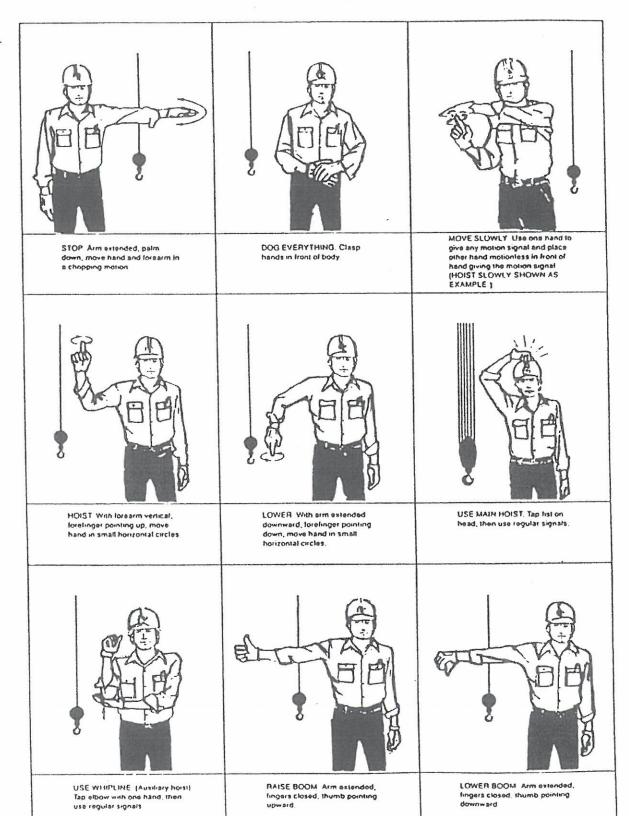


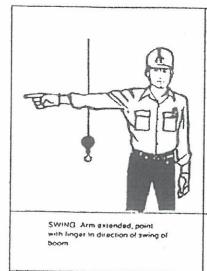
Metric Conversion Table

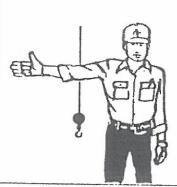
In an effort to familiarize readers with the metric system, at least two project features in this issue have measurements entirely in metric. This conversion table is provided as an aid to those who have difficulty in coping with the new system.

When you know	Multiply by	To find	
centimetres (cm) decimetres (dm) metres (m) kilometres (km)	Length 0.3937 0.3281 3.281 1.094 0.6214	inches feet feet yards miles	
square centimetres (cm²) square metres (m²) square kilometres (km²) hectares (ha)	Area 0.155 10.76 1.196 0.386 2.471	square inches square feet square yards square miles acres	
grams (g) kilograms (kg) tonnes (t)	Mass 0.035 2.205 1.102	ounces pounds tons	
litres (L) cubic metres (m³)	Volume 0.220 35.315 1.308	gallons cubic feet cubic yards	
kilopascals (kPa)	Pressure 0.1450	pounds/square inch	_
kilowatts (kW)	Power 1.34	horsepower	
joules (J)	Energy 0.7375	foot-pounds	
Newton 1KIP = 1KIP =	9.80665 1000 lbs 4.448 KN	kilogram FORCE	w s

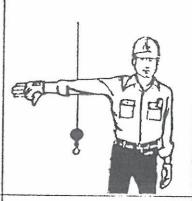
Crane & Hoist Signals







RAISE THE BOOM AND LOWER THE LOAD, With arm extended, thumb pointing up, flat lingers in and out as long as load movement is desired.



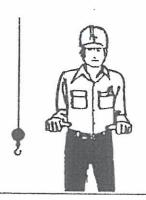
LOWER THE BOOM AND RAISE THE LOAD. With aim extended, thumb pointing down, flex lingers in and out as long as load movement is desired.



TRAVEL, Arm extended forward, hand open and slightly raised, making pushing motion in direction of travel.



EXTEND BOOM (Telescoping booms) Both fists in front of body with thumbs pointing outward.



RETRACT BOOM (Telescoping booms) Both fists in front of body with thumbs pointing toward such other.



TRAVEL (Crawler Crane, Both Tracks) Arm extended lowerd, hand open and slightly raised, making pushing motion in direction of travel.



TRAVEL (Crawler Crane, One Track)
Lock the track on side indicated by taised list. Travel opposite track in direction indicated by circular motion of other fist rotated vertically in front of body (for crawler cranes only).

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SECTION VIII

Working Limits from Power Lines

Safe Limits of Approach in Metres from Power Lines for Persons and Equipment

Voltages (Line to Ground)	Distance
kv	m
0 - 5	2.0
5 - 50	3.0
50 - 250	4.5
over 250	6.0

Table 1.

Ice Strength For Continuous Travel

These tables are for clear, blue ice on lakes and on rivers. This table does not apply for parked loads, or where ice faults are evident.

Effective Ice Thickness In Millimetres		
Lake	River	
50	60	
80	90	
180	210	
200	230	
260	300	
350	405	
380	435	
630	725	
800	920	
1000	1150	
1250	1440	
	In Milli Lake 50 80 180 200 260 350 380 630 800 1000	

Table 2.

Ice Strength for Stationary Loads and Working on Ice

This table applies to loads to be stationary on ice for more than two hours.

Permissible load	Effective Ice Thickne In Millimetres			
(clear, blue ice)	Lake	River		
1,000 kg	200	230		
2,000 kg	300	350		
4,000 kg	450	520		
8,000 kg	600	1270		
25,000 kg	1100	1730		
45,000 kg	1500	1725		
70,000 kg	1800	2070		
110,000 kg	2300	2650		

How to Calculate Effective Thickness

The effective thickness of a base of clear blue ice plus white ice or snow ice is a thickness of clear blue ice of equivalent load bearing strength. The formula to calculate total effective ice thickness is:

Clear + 1/2 T White = T Effective

Example: 400 mm of clear ice plus 200 mm of snow ice = 400 mm clear $+ \frac{1}{2}$ of 200 mm snow ice = 500 mm effective.

Where water lies between layers, use only the depth of the top layer of ice.

Temperature Variations

Daily air temperatures must be constant over a given period so that ice thickness will withstand the permissible loads at outlined in the tables.

When ice is

- Less than 500 mm thick, temperature must be constant for three
 (3) days.
- Between 500 and 1000 mm thick, temperature must be constant for four (4) days.
- Over 1000 mm thick, temperature must be constant for five days.

During a sudden drop in temperature and for three to five days following such a decline, the minimum ice thickness should be adjusted. If the temperature drop is excessive, severe thermal stressing or cracking of the ice will require caution and temporary load restrictions.

If drop is

5° or less - multiply 1.4 X minimum ice thickness

5° to 10° - multiply 2.0 X minimum ice thickness

10° + - multiply 2.4 X minimum ice thickness

Under thawing temperatures where the average air temperature exceeds 0 °C, increase the required ice thickness given in the tables by 20 per cent or, reduce the allowable weight by one-third.

Additional Necessary Precautions

Continuous Use Areas

Construction of flooded areas for ice crossings, parking areas or bridge erection requires daily measurement for ice thickness, air temperature and ice cracks. Currents can create wear to the underside of the ice and reduce its thickness.