MAJOR BRIDGE INSPECTION FORMS

0

Inspection Form Types

- Each form has a unique identification or form ID
- 9 different inspection report forms for bridges with a single span type
- 1 report for sign bridges
- Custom forms can be generated to suit the number & type of spans

1

1

Standard Bridge Inspection Form

Form ID	Span Description	Span Types
TT	Timber Bridges	TT, UT, UX
PCS	Standard Precast Bridges	HH, GC, VH, PG, GR, PE, PPS, VS, SM, SMC, SC, SCC
CUL1	Single Culvert	RS, SP, FP, MP, WP, TP, CP, BP, AP, XP, RPA, RPO, RPP, RPE, MPL
CULM	Multiple Culverts	Same as CUL1 in any combination
CULE	Culvert extended with a different material or size	RPX, APX, CPX, MPX

2

2

Major Bridge Inspection Forms

Form ID	Span Description	Span Types
TH	Trough Truss Bridges	TH
PT	Pony Truss Bridges	PT
DT	Deck Truss Bridges	DT
SG	Steel Girder Bridges	RB, RG, WG, FR
PSR	Regular Prestressed Girder Bridges	RD, FC, VF, PM, VM, PB, DBT, PQ, PO, LF, FM, RM, PJ
CON	All Cast-In-Place Concreate Concrete Tee Girders Bridges Concrete Flat Slab Bridges	CA, CB, CF, CV, CX, CC CT CS
SS	Other Trusses and Arches	SS
SIGN	Sign Structures	Z

3

3

Common Major Bridge Form Sections

- Bridge Site Inventory
- Bridge Inspection Details
  - Name, Date, Arrive/Depart times
- Approach Road
- Posting Information
  - Vertical clearance
  - Posted loading
  - Utilities

Common Major Bridge Form Sections

- Channel
- Grade Separation
- Structural Condition Rating
- Sufficiency Rating
- Special Comments for Next Inspection
- ERY
- Next Inspection Date and Inspection Cycle

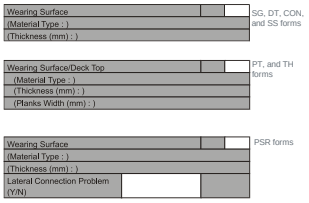
Unique Major Bridge Form Sections

- Superstructure
- Substructure
- Maintenance Recommendations

Superstructure Section

- Common Elements
  - Special Features
  - Deck Rideability
  - Bridge Rail
  - Sidewalk
  - Span Alignment Problems
  - General Rating

Wearing Surface



8

8

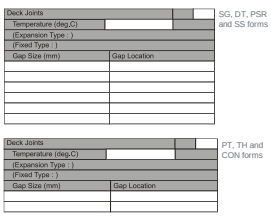
Deck Top

- PT, TH and SS have no Deck Top Element

9

9

Deck Joints



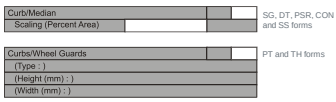
10

10

Deck Drainage

PT, TH form - No Drainage Element

Curbs/ Medians / Wheel / Guards



11

11

Truss Members

Pony and Through Trusses (PT & TH)

Wide Load Damage (Y/N)			
High Load Damage (Y/N)			TH only
Top Chord			
Batter Posts			
Sway Bracings			TH only
Diagonals			
Verticals			
Portals			TH only
Connections			
Floor Beams			
Bottom Chord			
(No. of Stringers :)			
Stringer Detail Ratings			

	N (count)	1 (count)	2 (count)	3 (count)
Last				
Now				

Stringers		
(Type :)		
(Width (mm) :)		
(Depth (mm) :)		
(Spacing (mm) :)		

12

Deck Truss, Other Trusses & Arches (SS)

Top Chord		
Diagonals		
Verticals		
Connections		
Floor Beams		
Bottom Chord		
Stringers		

13

Girders/ Beams

Girders			PSR only
Cracking (Y/N)			
Spalling (Percent Area)			

Girder/Beam			SG only
Cover Plate			
Flange			
Web			
Stiffeners			
Splice			
Weld			

Girders			CON and SS

14

Diaphragm / Cross Frames

Diaphragms/Cross Frame			SG, DT, PSR, CON, SS none on PT, TH

Paint

Paint Condition			SG, DT, PT, TH, SS others none
(Colour Description :)			
(Colour Code :)			

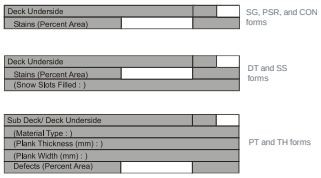
15

Bearings

16

16

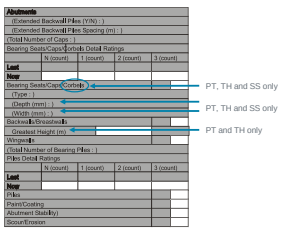
Deck Underside



17

17

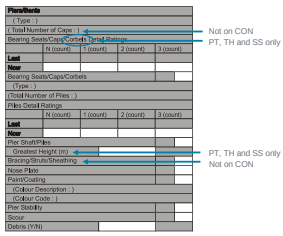
Substructure - Abutments



18

18

Substructure - Piers



19

19

Form Review

- Inventory items
  - Shaded fields on form (TIMS)
  - Verify/revise data on form
- Element Ratings
  - fill all blank fields
  - use N or X if necessary
- Data on LH Side of Form or Explanation of Condition
  - Verify & check off if visible
  - Carry over if not visible

Reason for Inspection

- Safety
- Maintenance
- Management

Rating Considerations

- Condition
- Functionality

Maintenance Recommendations (Table 11.1)

LEVEL1 INSPECTION	CORE TIMBER CAPS/CORBELS
CONCRETE DECK INSPECTION	REPAIR/REPLACE TIMBER CAPS
CONCRETE GIRDER INSPECTION	REPAIR ABUTMENT SCOUR/EROSION
VERTICAL CLEARANCE MEASUREMENT	PLACE ADDITIONAL RIP RAP
CHLORIDE TESTING	REMOVE DRIFT ACCUMULATION
COPPER SULPHATE ELECTRODE TESTING	INSTALL CATHODIC PROTECTION
PAINT INSPECTION	INSTALL CONCRETE/STEEL LINING
STEEL CULVERT BARREL MEASUREMENT	INSTALL STRUTS
SPECIAL STRUCTURE MONITOR	INSTALL CONCRETE COLLAR/CUTOFF
ULTRASONIC TRUSS INSPECTION	REPAIR SEAMS
SCOUR SURVEY INSPECTION	OBTAIN CORROSION ANALYSIS DATA
REPAIR/REPLACE BRIDGERAIL	REPAIR/REPLACE SIGNING
GALVANIZE/PAINT BRIDGERAIL	PATCH/REPAIR ACCESS PLATFORM
RETROFIT BRIDGERAIL	ADJUST/PAINT PEDESTAL BEARING AREA
SEAL CURBS	OTHER ACTION
PATCH DECK	REPAIR/REPLACE TIMBER CORBELS
SEAL DECK	REPAIR/REPLACE TIMBER PILES
OVERLAY DECK	LOAD POST BRIDGE
REPAIR/REPLACE DECK JOINTS	REPLACE MEMBERS
REPLACE STRIP DECK	STRAIGHTEN MEMBERS
REPLACE SUB DECK	REPAIR MEMBERS
RESET/ PAINT BEARINGS	INSTALL BOLTS
REPAINT SUPERSTRUCTURE	REPAIR BEARINGS
STRAIGHTEN/REPLACE MEMBERS	CRACK REPAIRS/TREATMENT
WASHING	PATCH CURBS/FAIRPETS
FILL BOLT HOLES	REPAIR STRUTS
SHOTCRETE REPAIRS	REPLACE CULVERT

Table 11.1 – Maintenance work types

Maintenance Priority

Rating	Maintenance Priority
5	No maintenance required
4	Low priority Recommended is not required If made – not likely before next inspection
3	Medium priority Before next inspection (6 mo. To 3 years)
2	High priority Monitor until work is done (within 6 months)
1	Immediate action

Road Classification

- Indicates current desirable standard (Refer to Table 4.2)

Current Departmental standards are:

Highway Type	Road Classification
Local Roads (graveled)	RUL 207G-60 RUL 208G-60 RUL 208G-90 RUL 209G-90 RUL 210G-90 RUL 210G-100
Local Roads (Paved)	RUL 208-100 RUL 208-110
Secondary Highways	RCU 208-110 RCU 209-110 RCU 210-110

Road Classification (cont'd)

- Indicates current desirable standard (Refer to Table 4.2)

Current Departmental standards are:

Highway Type	Road Classification
Primary Highways (undivided)	RAU 209-110 RAU 210-110 RAU 211.8-110 RAU 213.4-110 RAU 213.4-120
Primary Highways (divided)	RAD 412.4-120 RFD 412.4-130 RAD 616.6-130 RFD 616.6-130 RFD 820.8-110 RFD-1024.5-110

Major Bridges – Concrete (Table 11.3)

	Life Expectancy		
Type	**Low**	**Ave**	**high**
Prestressed Girder**	45	55*	70*
Precast Girder**	30	35	50
Cast-in-Place**	40	50	60

- Use maximum of 50 years for timber sub-structure
- Add 5 years if overlaid with concrete
- Add 5 years if strengthened or laterally stressed

Major Bridges – Steel (Table 11.3)

	Life Expectancy		
Type	**Low**	**Ave**	**High**
Ridge Frame	60	70	80
Welded Girder	60	70	80
Deck Truss	60	70	80
Rolled Beams	50	60*	80*
Riveted Plate Girder	40	50	70*
Through Truss	40	50	70*
Pony Truss	40	50	70*
Bailey and Other Types	30	40	50

- Use maximum of 50 years for timber substructure

Estimated Remaining Life

Major Bridges

- **Considerations**
  - Traffic characteristics
    - volume, amount of truck traffic, log haul
  - Salt usage
    - road surfacing, traffic, climatic conditions
  - Deck drainage, leakage
  - Decay favorable conditions
  - Design or rated load capacity

Questions?