

BEARING SETTING TABLE (REFER TO DETAIL) -10 20 X' DISPLACEMENT -15 AT N-0 (mm) X' DISPLACEMENT 15 12 10 -10 -15 AT N-1 (mm) X' DISPLACEMENT 0 AT N-2 (mm) X' DISPLACEMENT AT N-4 (mm) X' DISPLACEMENT -20 -17 -15 -10 10 -12 15 17 AT N-5 (mm)

LOCATION			SLS DESIGN LOADS				ULS DESIGN LOADS				LIVE LOAD		
	BEARING MK.	MAX AVAILABLE BEARING HEIGHT	VERTICAL		LONGITUDINAL	TRANSVERSE	VERTICAL		I ROTAT		IOAD IONS**	MOVEMENT***	
			DEAD	TOTAL TOTAL TOTAL		TOTAL	Dead	TOTAL TOTAL		TOTAL	SLS	ULS	
		[mm]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[kN]	[rad]	[rad]	[mm]
N-0 (EXP)	2	180	530	1060		106 (*)	640	1350		134 (*)	0.0014	0.028	-30 / +30
N-1 (EXP)	2	180	1050	1835		184 (*)	1265	2315		232 (*)	0.009	0.019	-20 / +20
N-2 (EXP)	2	180	930	1690		169 (*)	1115	2140		214 (*)	0.008	0.017	-10 / +10
N-3 (FXD)	2	190	930	1690	190 (*)	169 (*)	1115	2140	235 (*)	214 (*)	0.008	0.017	0
N-4 (EXP)	2	180	1050	1835		184 (*)	1265	2315		232 (*)	0.009	0.019	-10 / +10
N-5 (EXP)	2	180	530	1060		106 (*)	640	1350		134 (*)	0.0014	0.028	-20 / +20

NOTES:

- LONGITUDINAL DIRECTION IS PARALLEL TO THE GIRDER LINE AT THE BEARING LOCATIONS. TRANSVERSE DIRECTION IS PERPENDICULAR TO THE GIRDER LINE.
- * FIXED AND GUIDED BEARING SHALL BE CAPABLE OF RESISTING THE LARGER OF THE GIVEN LOADS OR 10% OF THE VERTICAL LOAD CAPACITY OF THE BEARINGS. ** FABRICATION AND INSTALLATION TOLERANCES ARE NOT INCLUDED IN THE GIVEN LIVE LOAD ROTATION COLUMN SHOWN ON THE ABOVE BEARING LOAD TABLE.
- *** THESE ARE ACTUAL MAXIMUM MOVEMENTS ALONG THE CENTERLINE OF THE BRIDGE ASSUMING BEARINGS ARE ZEROED AT 0°C. DESIGN MOVEMENTS OF BEARINGS SHALL ALLOW FOR AN ADDITIONAL MINIMUM OF 25±mm OF LONGITUDINAL MOVEMENT.

MANITOBA Certificate of Authorization Tetra Tech Canada Inc. No. 6499

B.M. ELEV.					TET!	DA TECU			THE CITY OF WINNIPEG			
					It 'E'	REVIEWED SA		ORIGINAL DRAWING REVISION " 0 " SEALED BY S.Y.I. AWAD 25.08.07	Winnipeg	PUBLIC WORKS DEPARTED	, , , , , , , , , , , , , , , , , , ,	
				DESIGNE BY	ED RL				LAGIMODIERE TV		CITY DRAWING NUMBER B123-25-2215	
				DRAWN BY	EV	APPROVED KA			OVER CPKC KEEWA' REHABILITATION AN		SHEET OF 48	
				SCALE:		ACCEPTED BY	DATE		NODTUDOUND CT	DUCTUDE		
1	ISSUED FOR ADDENDUM 7	25.10.02	RL	AS NOTED				CONSULTANT DRAWING NO.	NORTHBOUND ST		0045	
0	ISSUED FOR TENDER	25.08.07	SA			CAM WARD, P.ENG. 25.08.07		704-INF.MBI03007.01-DWG-S2215	BEARING LAYOUT		2215	
NO.	REVISIONS	DATE	BY	DATE	25.08.07			704-INF.IVIDIU3007.01-DVVG-52215				

'X' IS POSITIVE WHEN MEASURED FROM CENTERLINE OF

BEARING AWAY FROM PIER N-3, AND NEGATIVE WHEN

MEASURED TOWARD PIER N-3.

POT BEARING -

- EXIST GIRDER

- SOLE PLATE

- SLIDER PLATE

U/S OF GIRDER

- SEAT PLATE

TOP OF ABUTMENT

PEDESTAL OR PIER

DATA TABLE

DEGREES CELSIUS.

6. BEARINGS SHOWN IN THESE PLANS ARE FOR ILLUSTRATION PURPOSES ONLY. 7. ALL STEEL FOR THE BEARINGS SHALL BE CSA G40.21 GRADE 300W AND SHALL BE HOT DIPPED GALVANIZED TO CSA G164. 8. STAINLESS STEEL MATING SURFACES SHALL CONFORM TO ASTM A240 AND SHALL HAVE A

4. IT IS THE SOLE RESPONSIBILITY OF THE SUPPLIER TO DESIGN THE BEARINGS FOR THE

MOVEMENTS INCLUDE FOR ADDITIONAL REQUIREMENTS AND ARE THE MINIMUM TO BE PROVIDED. BEARING HEIGHTS MAY VARY ±10mm FROM THAT INDICATED IN THE BEARING

LOADS, MOVEMENTS, AND ROTATIONS AS NOTED IN THE BEARING DATA TABLE.

5. DESIGN THE BEARINGS FOR AN OPERATING RANGE OF -40 DEGREES CELSIUS TO +40

CANADIAN HIGHWAY BRIDGE DESIGN CODE, CAN/CSA-\$6-06.

- MINIMUM THICKNESS OF 3mm. THE ROUGHNESS OF THE CONTACT SURFACE SHALL BE NOT GREATER THAN 0.25 MICROMETRES ARITHMETIC AVERAGE FOR PLANE SURFACES. 9. WELDING OF STAINLESS STEEL PLATES SHALL BE CONTINUOUS WITH STAINLESS STEEL
- WELDING RODS. 10. PTFE SHALL BE MADE FROM VIRGIN RESIN SATISFYING THE REQUIREMENTS OF ASTM
- 11. ELASTOMER SHALL BE NATURAL RUBBER, LOW TEMPERATURE, GRADE 4 OR 5 WITH A 50 DUROMETER SHORE A HARDNESS.
- 12. BEARING FIXING BOLTS SHALL BE A325/A325M. GALVANIZED BOLTS SHALL BE USED WHEN FIXING GALVANIZED PLATES.
- 13. BEARING DESIGN SHALL ALLOW REMOVAL/REPLACEMENT OF BEARINGS BY JACKING THE BRIDGE TO A MAXIMUM OF 6mm.
- 14. PROVIDE PROTECTION TO BEARINGS AND ITS COMPONENTS DURING SHIPPING, HANDLING,
- 15. BEARING SUPPLIER SHALL DESIGN BOLTED CONNECTION BEARING BEARING AND SOLE PLATE FOR A MINIMUM OF 1.25 TIMES THE COMBINED SPECIFIC HORIZONTAL LOADS.
- ARRANGE CONNECTION TO ALLOW FOR BOLT REMOVAL WITHOUT INTERFERENCE FROM ANCHOR BOLTS OR OTHER OBSTRUCTIONS ONCE BEARING IS INSTALLED.
- 17. TAPERED SOLE PLATE DIMENSIONED SO THAT SLIDING SURFACE IS LEVEL UNDER DESIGN VERTICAL PROFILE
- 18. ANCHOR RODS SHALL CONFORM TO ASTM F1554, GRADE 105, HOT-DIPPED GALVANIZED.

BEARING REPLACEMENT SEQUENCE:

BELOW IS A PROPOSED SEQUENCE OF WORK FOR BEARING REPLACEMENT THAT MAY BE CONSIDERED BY THE CONTRACTOR. THE CONTRACTOR MAY PROPOSE AN ALTERNATE BEARING REPLACEMENT SEQUENCE WITH APPROVAL BY THE CONTRACT ADMINISTRATOR.

AT ABUTMENT BEARINGS:

- 1. PRIOR TO DEMOLITION OF THE DECK, JACK THE GIRDERS FROM THE EXISTING ABUTMENT CONCRETE DIAPHRAGM. NOTE THAT DECK DEMOLITION MAY COMMENCE PRIOR TO JACKING AND BLOCKING, BUT THE LAST 5m OF DECK FROM THE CENTERLINE OF THE ABUTMENT BEARINGS MAY NOT BE DEMOLISHED UNTIL AFTER JACKING IS COMPLETE AND
- BRIDGE IS LOWERED ONTO TEMPORARY BEARINGS. 2. CONSTRUCT ABUTMENT CONCRETE BEARING PEDESTALS.

- 3. INSTALL TEMPORARY BEARINGS ON PEDESTALS AND LOWER BRIDGE.
 4. (COMPLETE BRIDGE DECK DEMOLITION, INCLUDING ABUTMENT END DIAPHRAGMS.)
 5. INSTALL NEW BEARING ANCHOR BOLTS PRIOR TO FORMING AND CASTING NEW CONCRETE DECK AND ABUTMENT END DIAPHRAGMS
- 6. COMPLETE NEW BRIDGE DECK CONSTRUCTION, INCLUDING ABUTMENT END DIAPHRAGMS.
 PERMANENT ABUTMENT BEARING ADDITIONAL DIAPHRAGM PLATE TO BE CAST WITH ABUTMENT END DIAPHRAGM.
- 7. JACK BRIDGE FROM ABUTMENT END DIAPHRAGM, REMOVE TEMPORARY BEARINGS AND INSTALL PERMANENT ABUTMENT BEARINGS. LOWER BRIDGE ONTO BEARINGS.

AT PIER BEARINGS:

- 1. FOLLOWING DEMOLITION OF EXISTING BRIDGE DECK, JACK GIRDERS FROM EXISTING GIRDER END BLOCK, ADJACENT TO LOCATION OF EXISTING BEARINGS. JACKING IS PERMITTED OFF PROPOSED PIER MODIFICATION CONCRETE PROVIDED CONCRETE HAS ATTAINED A MINIMUM OF 75% SPECIFIED CONCRETE STRENGTH.
- 2. INSTALL TEMPORARY BEARINGS IN LOCATION OF EXISTING BRIDGE BEARINGS. TEMPORARY BEARINGS SHALL BE LOCATED SO AS NOT TO INTERFERE WITH INSTALLATION OF PERMANENT PIER BEARINGS.
- 3. INSTALL NEW BEARING ANCHOR BOLTS PRIOR TO FORMING AND CASTING NEW CONCRETE
- DECK AND PIER END DIAPHRAGMS 4. COMPLETE BRIDGE DECK CONSTRUCTION, INCLUDING PIER END DIAPHRAGMS.
 PERMANENT PIER BEARING (ADDITIONAL DIAPHRAGM) PLATE TO BE CAST WITH PIER END
 DIAPHRAGM. BEARINGS MAY BE INSTALLED PROVIDED BRIDGE WEIGHT IS STILL
- SUPPORTED BY TEMPORARY BEARINGS. 5. JACK BRIDGE FROM PIER END DIAPHRAGM, REMOVE TEMPORARY BEARINGS, AND INSTALL PERMANENT PIERS BEARINGS. LOWER BRIDGE ONTO BEARINGS.

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GEOSCIENTISTS