

JACKING LOADS FOR SU.1		
CASE	OUTSIDE JACK POSITION	INSIDE JACK POSITION
UNFACTORED DEAD LOAD PER-JACK	770 kN	610 kN
MAXIMUM FACTORED DEAD LOAD PER JACK	1001 kN	793 kN

JACKING LOADS FOR SU.5	
CASE	VERTICAL LOAD (kN)
UNFACTORED DEAD LOAD PER-JACK	1387 kN
MAXIMUM FACTORED DEAD LOAD PER JACK	1803 kN


1. THE BRIDGE SHALL BE CLOSED TO TRAFFIC THROUGH JACKING AND WHILE THE BRIDGE IS SUPPORTED ON TEMPORARY BLOCKING. TEMPORARY BLOCKING SHALL BE DESIGNED BY THE CONTRACTOR AND BE CAPABLE OF SUPPORTING THERMAL MOVEMENTS AND PROVIDE LATERAL STABILITY TO THE STRUCTURE.
2. THE MAXIMUM PERMITTED BRIDGE CLOSURE FOR JACKING AND BEARING REPLACEMENT IS A TOTAL OF ONE WEEK. NO VEHICULAR TRAFFIC IS PERMITTED ON THE STRUCTURE DURING JACKING AND WHILE IN THE BLOCKED STATE.
3. THE CONTRACTOR SHALL ACCOUNT FOR LATERAL LOADS IN THEIR JACKING PROCEDURE AND TEMPORARY SUPPORT PLAN OF THE TRUSS.
4. THE CONTRACTOR SHALL SUPPLY AND USE A SYNCHRONIZED JACKING SYSTEM AND CONSIST OF EITHER A PROGRAMMABLE LOGIC CONTROLLER (PLC) CONTROLLED SYSTEM OR A VOLUMETRIC CONTROLLED SYSTEM. THE SYSTEM SHALL BE CAPABLE OF ADJUSTING PRESSURES AND HYDRAULIC VOLUMES IN ORDER TO ACHIEVE A UNIFORM LIFT AND / OR LOWERING TO A TOLERANCE OF LESS THAN OR EQUAL TO 1.5mm from the LEADING TO LAGGING CYLINDERS.
5. ALL JACKS SHALL BE RAISED IN ONE SYNCHRONIZED OPERATION, WHILE MAINTAINING THE MAXIMUM ALLOWABLE DIFFERENCE BETWEEN ANY TWO JACKING POINTS OF 1.5mm.
6. JACKS SHALL BE CAPABLE OF SUPPORTING THE MAXIMUM FACTORED DEAD LOAD PER JACK LISTED IN THE JACKING LOG TABLE FOR ALL SU.5 AND SU.5.5.
7. MAXIMUM BEARING STRESS ON SUBSTRUCTURE TOP UNDER JACKING LOCATIONS SHALL BE LIMITED TO 15MPa. BEARING PLATES TO BE SIZED APPROPRIATELY BY THE CONTRACTOR.
8. PERFORM JACKING SETUP AT SU.5 (SEE SHEET 7 FOR DETAILS) SHALL BE COMPLETED PRIOR TO BRIDGE JACKING.
9. MAXIMUM CALCULATED VERTICAL JACKING HEIGHT AT SU.1 OR SU.5.5 10mm.
10. INSTALL NEW BEARINGS CENTERED UNDER EXISTING BEARING STIFFENERS
11. THE CONTRACTOR SHALL PERFORM ALL WORKS REQUIRED TO INSTALL THE BEARINGS SHOWN ON SHEET 7 & 8. WORK WILL ALSO INCLUDE FIELD WELDING POT ASSEMBLY TO MASONRY / SEAT PLATES AND INSTALLATION OF MASONRY / SEAT PLATES TO STRUCTURE. SUPPLY OF STRUCTURE ATTACHMENT BOLTS BY CONTRACTOR.


1. POT BEARING ASSEMBLIES DEPICTED ON THESE PLANS WILL BE SUPPLIED BY THE CITY OF WINNIPEG AND BE AVAILABLE ON MARCH 1, 2026 PROCURED UNDER SEPARATE CONTRACT.
2. BEARINGS SHOWN IN THESE PLANS ARE FOR ILLUSTRATION PURPOSES ONLY.
3. DESIGN AND FABRICATION OF THESE BEARINGS SHALL MEET THE REQUIREMENTS OF THE CSA S6-25 CANADIAN HIGHWAY BRIDGE DESIGN CODE.
4. SUPPLIER TO DESIGN THE BEARINGS FOR THE LOADS, MOVEMENTS, AND ROTATIONS AS NOTED IN THE BEARING DATA TABLE. THE SUPPLIER SHALL CONFIRM THE SEAT PLATE AND MASONRY PLATE DIMENSIONS WITH THE CONTRACT ADMINISTRATOR. ALLOWANCES HAVE BEEN MADE ON DRAWINGS.
5. ALL GUIDES, RESTRAINTS, BOLTED CONNECTIONS AND ANCHOR RODS SHALL BE DESIGNED FOR VERTICAL AND HORIZONTAL LOADS IN ACCORDANCE WITH THE PROVISIONS OF THE CSA S6-25 BRIDGE CODE.
6. THE FINAL BEARING DESIGN FRICTION FORCES SHALL BE PROVIDED TO THE CONTACT ADMINISTRATOR FOR VERIFICATION OF THE MASONRY PLATE CONNECTION TO EXISTING CAST IRON PEDESTAL AS WELL AS SEAT PLATE CONNECTION TO EXISTING FLOOR BEAM.
7. DESIGN THE BEARINGS FOR AN OPERATING TEMPERATURE RANGE OF -40 DEGREES CELSIUS TO +40 DEGREES CELSIUS.
8. MASONRY SEAT PLATES AND STEEL SHIMS SHALL BE CSA G40.21 GRADE 350W. ALL OTHER STEEL FOR THE BEARINGS SHALL BE CSA G40.21 GRADE 300W. ALL STEEL OTHER THAN THE STAINLESS STEEL SLIDING PLATE, SHALL BE HOT DIP GALVANIZED TO A SMOOTH FINISH TO CSA G164.
9. STAINLESS STEEL MATING SURFACES SHALL CONFORM TO ASTM A240 TYPE 304 AND SHALL HAVE A MINIMUM THICKNESS OF 3mm. THE ROUGHNESS OF THE CONTACT SURFACE (AS MEASURED BY CSA B95) SHALL BE NOT GREATER THAN 0.20 MICROMETRES ARITHMETIC AVERAGE FOR PLANE SURFACES.
10. WELDING OF STAINLESS STEEL PLATES SHALL BE CONTINUOUS WITH STAINLESS STEEL WELDING RODS.
11. PTFE SHALL BE MADE FROM VIRGIN RESIN SATISFYING THE REQUIREMENTS OF ASTM D4894.
12. BEARING FIXING BOLTS SHALL BE ASTM F3125 GRADE A325. 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 10mm.
14. PROVIDE PROTECTION TO BEARINGS AND ITS COMPONENTS DURING SHIPPING, HANDLING, AND INSTALLATION.
15. BEARINGS SHALL BE LABELED / IDENTIFIED FOR LOCATION AND ORIENTATION AS AN AIDE FOR INSTALLATION.

BEARING LOADS AND MOVEMENTS TABLE FOR SU.1 AND SU.5														
LOCATION	BEARING TYPE	SLS DESIGN LOADS						ULS DESIGN LOADS						TOTAL LONGITUDINAL MOVEMENT DESIGN RANGE ⁽⁴⁾ (mm)
		VERTICAL ⁽¹⁾ (kN)		LONGITUDINAL ⁽²⁾ (kN)	TRANSVERSE ⁽³⁾ (kN)	LIVE LOAD ROTATIONS (RADIANs)		VERTICAL ⁽¹⁾ (kN)		LONGITUDINAL ⁽²⁾ (kN)	TRANSVERSE ⁽³⁾ (kN)	LIVE LOAD ROTATIONS (RADIANs)		
		DEAD	TOTAL	TOTAL	TOTAL	RX	RY	DEAD	TOTAL	TOTAL	TOTAL	RX	RY	
SOUTH ABUTMENT SU.1	UNIDIRECTIONAL	1778	2416	-	242	0.00065	0.00239	2094	3298	-	330	0.001105	0.004063	+55/-55
	UNIDIRECTIONAL	1778	2416	-	242	0.00065	0.00239	2094	3298	-	330	0.001105	0.004063	+55/-55
PIER SU.5	UNIDIRECTIONAL	1778	2416	-	242	0.00065	0.00239	2094	3298	-	330	0.001105	0.004063	+55/-55
	UNIDIRECTIONAL	1778	2416	-	242	0.00065	0.00239	2094	3298	-	330	0.001105	0.004063	+55/-55

1. VERTICAL LOADS PROVIDED INCLUDE A 25% ADDITIONAL DEAD LOAD ALLOWANCE FOR FUTURE BRIDGE REHABILITATION. ACTUAL DEAD LOADS IN THE SHORT TERM WILL BE LESS.
2. LONGITUDINAL LOADS SHALL BE DETERMINED BY THE BEARING SUPPLIER AS A FUNCTION OF BEARING FRICTION. BEARING FRICTION SHALL NOT BE MORE THAN 5% WITHIN THE DESIGN TEMPERATURE RANGE.
3. UNIDIRECTIONAL GUIDED BEARINGS SHALL BE DESIGNED TO RESIST THE LARGER OF THE GIVEN LOADS OR 10% THE FINAL VERTICAL LOAD CAPACITY OF THE BEARINGS.
4. LONGITUDINAL MOVEMENT DESIGN RANGE INCLUDES A 25mm EXTRA ALLOWANCE IN THE DIRECTION OF EXPANSION AND CONTRACTION.
5. DESIGN POT BEARINGS WITH MAXIMUM ECCENTRICITY OF +/-55mm.



B.M. ELEV.				<div>TETRA TECH</div>					
0	ISSUED FOR TENDER	25.11.14	ZM	DESIGNED BY ZM		REVIEWED BY TN / SA			
				DRAWN BY GI / AM		APPROVED BY MB			
				SCALE: AS NOTED		ACCEPTED BY DATE			
						CAM WARD, P.ENG. 25.11.14			
NO.	REVISIONS	DATE	BY	DATE	25.11.14				

	 <div> THE CITY OF WINNIPEG PUBLIC WORKS DEPARTMENT </div>	
	LOUISE BRIDGE SUBSTRUCTURE REHABILITATION WORKS - PHASE 1	CITY DRAWING NUMBER B107-25-006 <hr/> SHEET 6 OF 23
	SOUTH ABUTMENT SU.1 AND SU.5 BEARING PLAN AND JACKING PROCEDURE	6
CONSULTANT DRAWING NO. 704-INF-MBI03029.01-DWG-S'1006		