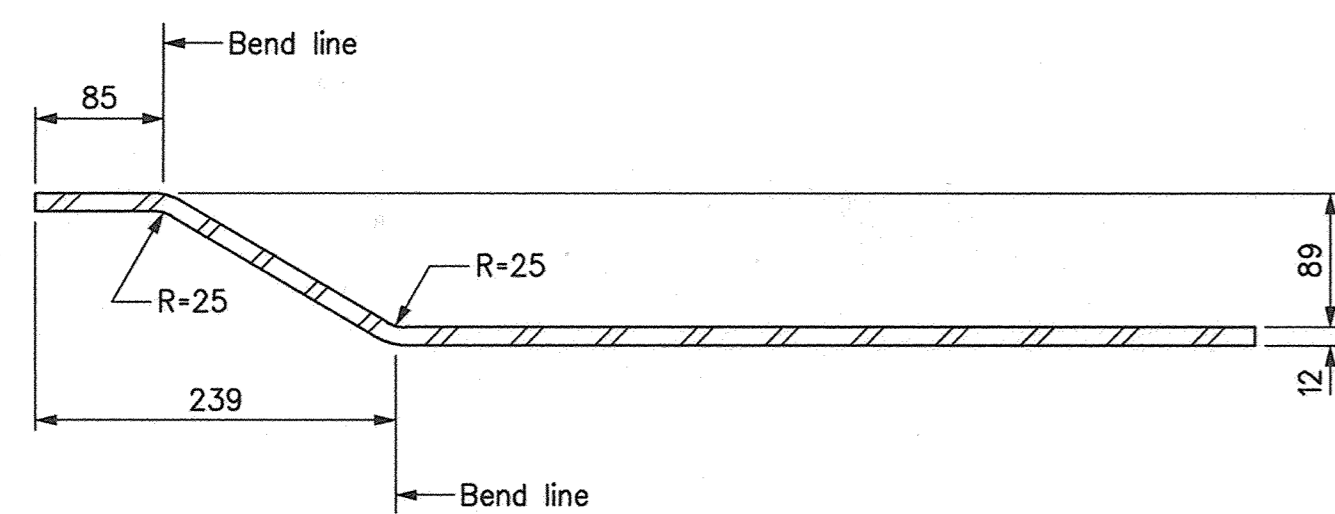


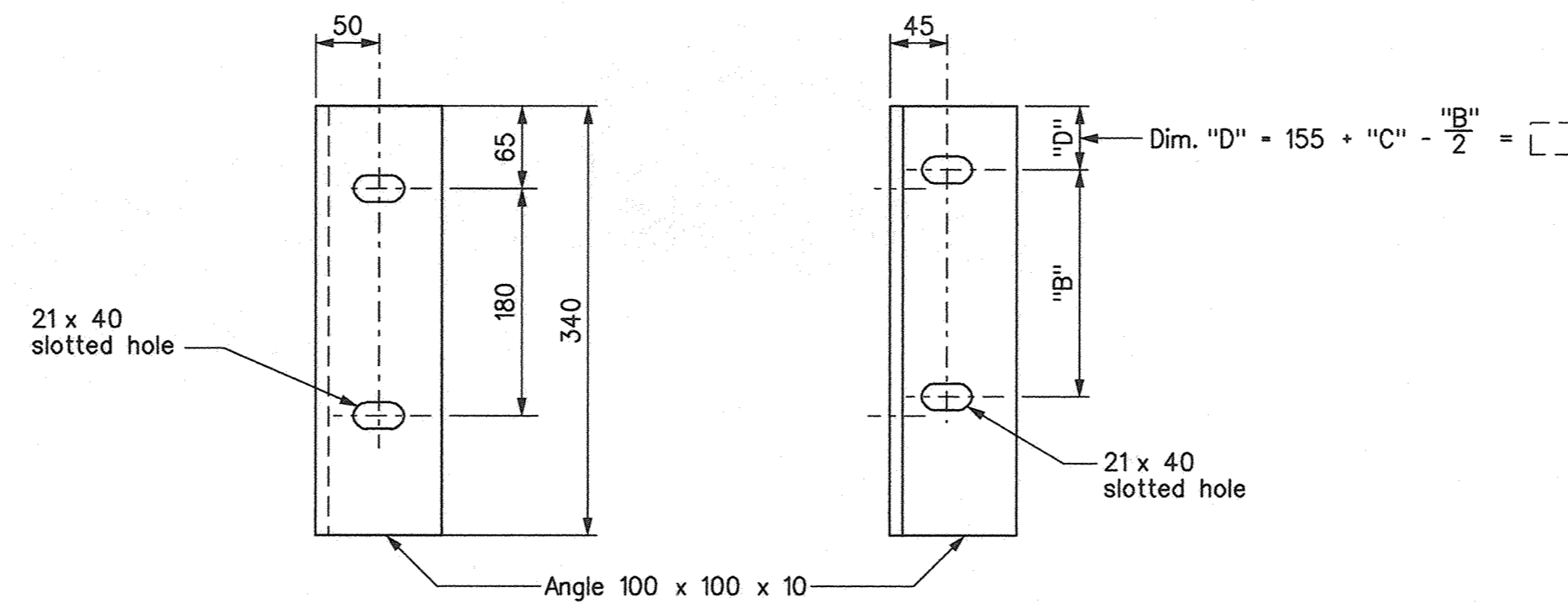
ELEVATION



SECTION A-A

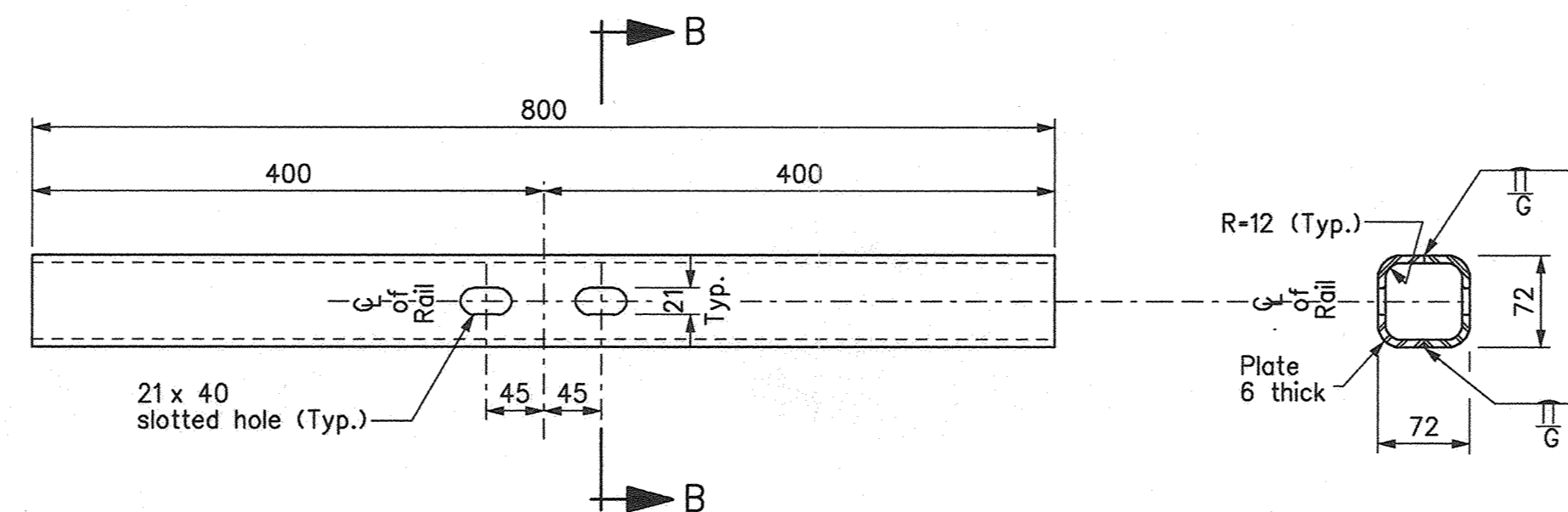
CONNECTION PLATE MK. "AP1" & "AP2"

NOTE: Mk. "AP1" shown, Mk. "AP2" opposite hand.



CONNECTION ANGLE MK. "BA1" & "BA2"

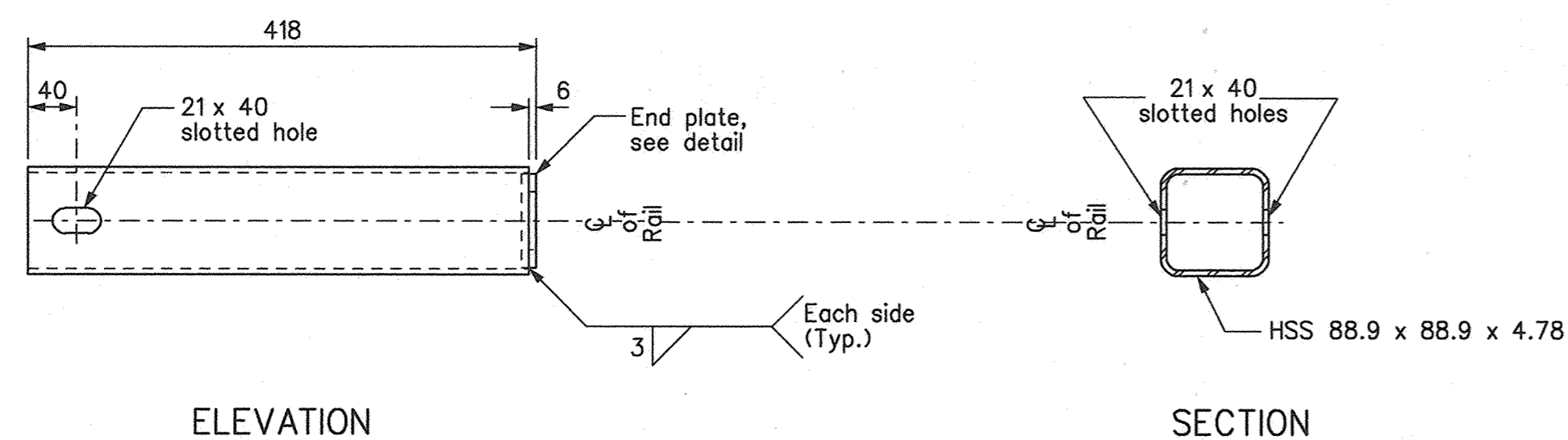
NOTE: Mk. "BA1" shown, Mk. "BA2" opposite hand.



ELEVATION

SECTION B-B

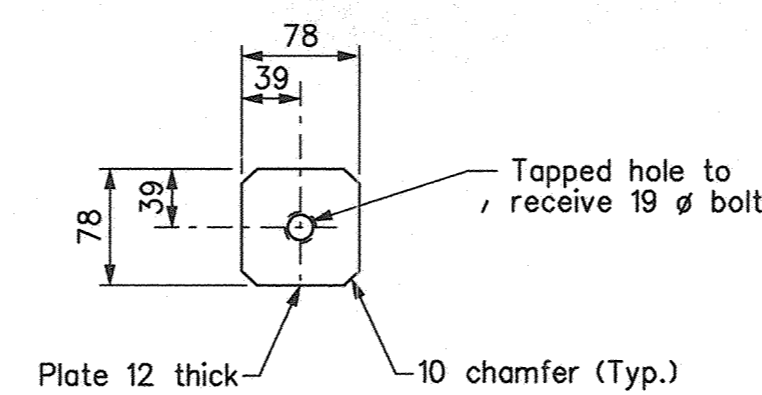
SLEEVE MK. "GR7"



ELEVATION

SECTION

RAIL MK. "GR4"



END PLATE

BILL OF MISCELLANEOUS METAL					Site No.
MARK	No.	DESCRIPTION	SIZE	MASS PER UNIT	TOTAL MASS
AP1		Connection plate	Plate, 12 thick As detailed	25.841	
AP2		Connection plate	Plate, 12 thick As detailed	25.841	
BA1		Connection angle	Angle, 100 x 100 x 10 As detailed	4.956	
BA2		Connection angle	Angle, 100 x 100 x 10 As detailed	4.956	
GR4		Rail - Each unit to be fabricated from:			
		Rail	HSS 88.9 x 88.9 x 4.78, 412 long - As detailed	4.971	
		End plate	Plate, 12 thick As detailed	0.541	
				4.971	
GR7		Sleeve - each unit to be fabricated from:			
		Plates	2 plates, 6 thick As detailed	9.576	
C15		Hex bolts	22 ø x 165 hex. bolt c/w all metal lock nut	0.739	
C16		Hex bolts	22 ø x 65 hex. bolt c/w all metal lock nut	0.429	
C17		Hex bolts	22 ø x 50 hex. bolt c/w all metal lock nut	0.391	
C18		Hex bolts	19 ø x 38 hex. bolt - no nut	0.145	
		Plate washers	For 19 ø bolts, one per bolt Mk. C15, C16, C17 & C18	0.045	
		Lock washers	For 19 ø bolts, one per bolt Mk. C18	0.019	
				Total mass	kg

NOTES:

- All angles and plates shall conform to the requirements of CAN/CSA-G40.21-M95 Grade 300W.
- All structural tubing shall conform to CAN/CSA-G40.21-M92 Grade 350W.
- Welding shall meet the current requirements of the American Welding Society, Structural Welding Code ANSI/AASHTO/AWS D15.
- All material in the above Bill shall be galvanized in accordance with CAN/CSA-G164-M92. No punching, drilling, cutting or welding will be permitted after galvanizing.
- All bolts shall conform to the requirements of ASTM A325 unless noted otherwise.
- For location of dimensions "A", "B" & "C" see sheet No. 1.
- Dimensions shown thus: [ ] to be filled in using field measurements.
- Field drilled holes, where previously approved by the Engineer, shall be touched up using Galvalloy.

NOTE: Original drawing sealed by J. Lukashenko P.Eng., Feb.23, 2000. It is filed in the Bridges and Structures Branch.

REVISIONS	
DATE	DESCRIPTION

CONNECTION PLATE DETAILS  
W-BEAM TO 2 RAIL TL-2 RAILING

DATE		BY	DESCRIPTION	Manitoba Highways and Government Services Bridges and Structures Branch	RELEASED FOR CONSTRUCTION BY: Original signed by Greg Hamilton Feb.23, 2000
			TSTB11		
DESIGN	BY:	J.L.	DIRECTOR OF BRIDGES AND STRUCTURES	DATE	
	CHECKED:		SCALE:	1:5	SHEET No. 2 of 2
DETAILS	BY:	E.F.			
	CHECKED:	J.L.			SITE No.