

CHAPTER 6

# MGB DESIGN PRO FORMA

(all measurements are in meters)

## SS 4 Through 12 Bays

Grid \_\_\_\_\_  
 Recon Officer \_\_\_\_\_  
 Map Ref \_\_\_\_\_  
 Unit \_\_\_\_\_ MLC \_\_\_\_\_

3. Bridge length \_\_\_\_\_

4. R distance \_\_\_\_\_

5. Nose construction \_\_\_\_\_

1. Measure AR gap A to A' \_\_\_\_\_

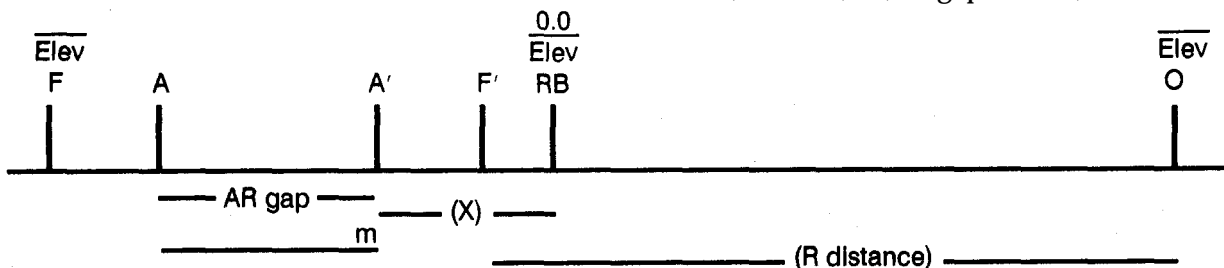
6. Key construction points, dimensions, and elevations. Calculate the distance from the RB to the A' peg (X), where -

**NOTE:** Use Tables 18 or 19 (page 28) to obtain the answers to the following:

*Push launch:*  
 $X = (\text{bridge length} + 0.23\text{m}) - (\text{AR gap} + 0.9\text{m})$

2. Select bridge \_\_\_\_\_

*Jack launch:*  
 $X = (L - 0.23\text{m}) - (\text{AR gap} + 0.9\text{m})$



Min 0.9m

Min 0.9m

For push launch, RB is positioned 0.23m behind F'.

Max 2.1m

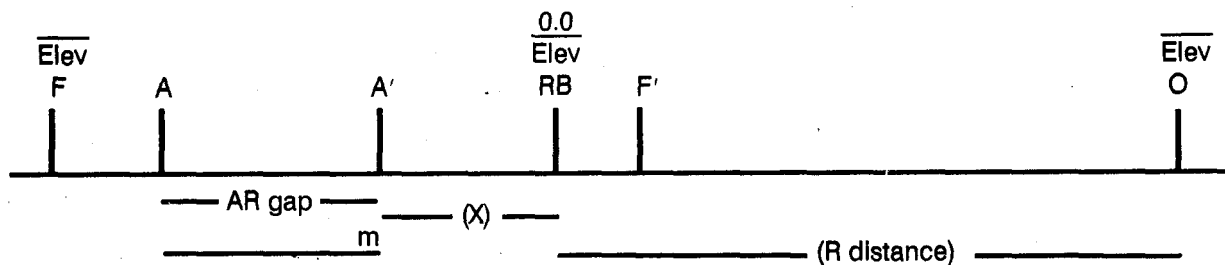
Max 2.1m

Note: Push launches are to be performed only in an actual wartime operation.

\_\_\_\_\_ m

\_\_\_\_\_ m

(Enter actual bearing above)



Min 0.9m

Min 0.9m

For jack launch, RB is positioned 0.23m in front of F'.

Max 2.1m

Max 2.1m

\_\_\_\_\_ m

\_\_\_\_\_ m

(Enter actual bearing above)

Table 18. Bridges 4 through 8 bays SS

Site Dimensions						Launch Design			
AR Gap (a)	L (b)	Bays (c)	MLC (d)	Nose (e)	R Dist (f)	RB BP Only (g)	RB BP + DU Only (h)	N BP Only (i)	N BP + DU Only (j)
3.7-6.1	7.9	4	60	LLN Only	5.8	0.43	0.60	1.30	1.75
5.6-8.0	9.8	5			6.7			1.14	1.68
7.4-9.8	11.6	6	40		7.6			1.07	1.60
9.2-11.6	13.4	7	30		9.5			0.76	0.91
11.0-13.4	15.2	8			11.3			0.38	0.84

Table 19. Bridges 9 through 12 bays SS

Site Dimensions						Dimension N above line through ground at RB & O when rear BSB is on ground. The RB is on BP or BP & DU, & LNCG is on 4, 2, or 1.					
						LNCG Settings					
						4		2		1	
AR Gap (a)	L (b)	Bays (c)	MLC (d)	Nose (e)	R Dist (f)	BP Only (g)	BP + DU (h)	BP Only (i)	BP + DU (j)	BP Only (k)	BP + DU (l)
12.9-15.3	17.1	9	24	5N1	10.4	-0.76	-0.08	0.61	1.14	1.83	2.36
14.7-17.1	18.9	10	20		12.2	-0.99	-0.61	0.38	0.76	1.60	1.98
16.5-18.9	20.7	11	16	6N1	12.2	-1.37	-1.07	0.15	0.48	1.83	2.44
18.4-20.8	22.6	12			14.0	-2.13	-1.60	-0.46	0.08	1.07	1.60

Notes:

1. An extra 0.075m of clearance can be obtained by lifting on the nose to remove the pin sag. Where levels are estimated, this should not be taken into account during design but left to compensate for any errors in calculating the value of H (for SS 4 through 8 bays).
2. An extra 0.6m of clearance can be obtained by lifting on the nose to remove the pin sag (for SS 9 through 12 bays).
3. Any additional packing under the RB will increase the vertical interval N by three times the thickness of the packing, for example if the packing is 0.075m thick, N will be increased by 0.225m.
4. The table incorporates an allowance to ensure that the nose clears the LR when it is positioned 0.230m in front of point F.

7. Slope check.

Ensure that the difference in elevation between the F' and F peg does not exceed one-tenth of the actual bridge length. If it does, you will have to crib up, undertake a major construction project, or find another centerline.

8. Calculate H:

for push launch -  

$$H = HtF + \frac{[HtO \times (L + 0.23)]}{R \text{ distance}}$$

for jack launch -  

$$H = HtF + \frac{[HtO \times (L - 0.23)]}{R \text{ distance}}$$

9. Launch design:

<b>4 through 8 bays (from Table 18)</b>
Choose a packing where N > H from columns (i) or (j)  Packing _____ from columns (g) or (h)

<b>9 through 12 bays (from Table 19)</b>
Choose an LNCG setting where N > H from columns (g), (h), (i), (j), (k), or (l)  LNCG setting _____ Packing _____

10. Loads required.

From Table 20, determine the truck and trailer loads required for the bridge.

11. From Table 21, extract the following information:

Construction time \_\_\_\_\_

Manpower requirements \_\_\_\_\_

12. Final design:

Bays \_\_\_\_\_

LNCG setting \_\_\_\_\_

Packing required \_\_\_\_\_

Bearing: NB \_\_\_\_\_ FB \_\_\_\_\_

Truck and trailer loads \_\_\_\_\_

Manpower required \_\_\_\_\_

Time to construct \_\_\_\_\_

**Table 21. Work parties and building times on good sites(firm dry ground)**

	Single-Story		
	5 Bays 9.8m MLC 60 (b)	8 Bays 15.2m MLC 60 (c)	12 Bays 22.6m MLC 60 (d)
	(a)		
Work party	1 + 8	1 + 16	1 + 16
Time by day (hours)	1/2	3/4	1
Time by night (hours)	3/4	1	1 1/4

**Note:** For disposition of work parties, see Table 32, page 40.

**Table 20. MGB pallets SS**

Pallet Type	Number of Bays								
	4	5	6	7	8	9	10	11	12
Erection	1	1	1	1	1	1	1	1	1
Bridge	2	2	3	3	4	4	5	5	5
Total	3	3	4	4	5	5	6	6	6

**Note:** More vehicles are required to transport personnel. Erection pallets may only be partial depending on bridge being constructed.

**DS 2E + 1 Through 2E + 12 Bays**

Grid \_\_\_\_\_ Recon Officer \_\_\_\_\_

Map Ref \_\_\_\_\_

Unit \_\_\_\_\_ MLC \_\_\_\_\_

1. Measure AR Gap A to A' \_\_\_\_\_

**NOTE:** Use Table 22 to obtain the answers to the following:

2. Select bridge \_\_\_\_\_

3. Bridge length \_\_\_\_\_

4. R distance \_\_\_\_\_

5. Nose construction \_\_\_\_\_

6. Key construction points, dimensions, and elevations (as shown below).

7. Slope check.

Ensure that the difference in elevation between the F and F' pegs does not exceed one-tenth of the total bridge length. If it does, you will have to crib up, undertake a major construction project, or find another centerline.

8. Calculate C, H, and G:

$$C = \frac{HtWL - HtF \times W \text{ distance}}{(L - 0.5)}$$

$$H = HtF + \frac{HtRRB \times (L - 0.5)}{4.6}$$

$$G = HtO - \frac{HtRRB \times R \text{ distance}}{4.6}$$

9. **RULE 1.** (if both bank heights > 0.6m, go to RULE 2.)

Choose an LNCG setting that ensures depth of C > depth of D.

LNCG settings permitted — — —

10. **RULE 2.** LNCG setting to give N > H and T > G.

Choose an LNCG setting so that N > H.

LNCG setting chosen \_\_\_\_\_

**NOTE:** The setting chosen cannot be lower than that chosen in RULE 1.

if N > H and/or T > G, go to RULE 3

11. **RULE 3.** Raise the FRB and RRB by 0.69m

$$N \text{ RULE 3} = N \text{ RULE 2} + 0.69m \quad N = \underline{\hspace{2cm}}$$

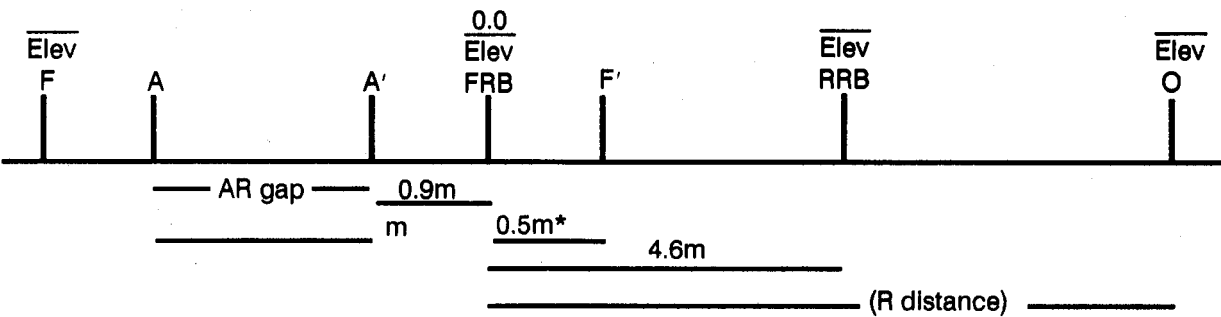
Check N Rule 3 > H - Yes/No

$$\text{Check } T > G \text{ Yes/No - column (p) } T = \underline{\hspace{2cm}}$$

If Yes, design is OK.

if N RULE 3 > H, go to RULE 4a.

if T RULE 3 > G, go to RULE 4b.



Min 0.9m

Min 1.4m

Max 2.3m

Max 2.3m

\_\_\_\_\_ m

\_\_\_\_\_ m

(Enter actual bearing above)

Check bearing:

$$\text{Bearing FB} + \text{AR gap} + \text{Bearing NB} = L$$

**Note:** \* Minimum

Table 22. DS MGB design 2E + 1 through 2E + 12 bays  
(all measurements are in meters)

Site Dimensions										Rule 1 D for given LNCG setting with FRB in lowest position					Rule 2 Nose lift N using various LNCG settings and FRB in lowest position					Launch design			
																				Other methods of adjusting N & T			
AR Gap (a)	Brg Lgth (b)	2E + # of Bays (c)	MLC (d)	Nose* Const (e)	R Dist (f)	W Dist (g)	Hole #6** (h)	Hole #4** (i)	Hole #2** (j)	Tail Lift T (k)	Hole #6** (l)	Hole #4** (m)	Hole #2** (n)	N (o)	T (p)	Rule 3 Raise FRB & RRB by 0.69m	Rule 4a Lower RRB to increase N	Rule 4b Lower FRB to increase T					
6.7 - 9.0	11.3	1	All DS MGB are MLC 60	2N1	10.0	-	-	-	-	-	1.02	1.48	2.04	N Rule 3 = N Rule 2 + 0.69m	1.24	1.75(1.24-G)	0.2 (N Rule 3 -H)						
8.5 - 10.8	13.1	2		3N1	11.9	-	-	-	-	0.55	0.89	1.53	2.30		1.24	1.75(1.24-G)	0.2 (N Rule 3 -H)						
10.3 - 12.6	14.9	3		4N1	12.2	-	-	-	-	0.86	1.50	2.28	2.23		1.24	1.75(1.24-G)	0.2 (N Rule 3 -H)						
12.2 - 14.5	16.8	4		5N1	13.1	-	-	-	-	0.81	1.45	2.23	2.51		1.24	1.75(1.24-G)	0.2 (N Rule 3 -H)						
14.0 - 16.3	18.6	5		6N1	14.9	-	-	-	-	0.70	1.52	2.51	2.47		1.24	1.75(1.24-G)	0.2 (N Rule 3 -H)						
15.8 - 18.1	20.4	6				-	-	-	-	0.65	1.48	2.47	2.36		1.24	1.75(1.24-G)	0.2 (N Rule 3 -H)						
17.7 - 20.0	22.3	7				15.8	13.1	0.70	0.31	-0.09	0.52	0.53	2.36		1.24	1.75(1.24-G)	0.2 (N Rule 3 -H)						
19.5 - 21.8	24.1	8				16.8	15.0	0.67	0.25	-0.20		0.49	2.69		1.24	1.75(1.24-G)	0.2 (N Rule 3 -H)						
21.3 - 23.6	25.9	9				17.7	16.5	0.64	0.21	-0.30	0.46	0.33	2.55		1.24	1.75(1.24-G)	0.2 (N Rule 3 -H)						
23.1 - 25.4	27.7	10				19.5	17.6	0.60	0.12	-0.40		0.25	2.49		1.24	1.75(1.24-G)	0.2 (N Rule 3 -H)						
25.0 - 27.3	29.6	11				20.4	18.5	0.50	0.04	-0.43		0.16	2.63		1.24	1.75(1.24-G)	0.2 (N Rule 3 -H)						
26.8 - 29.1	31.4	12				21.6	19.2	0.46	-0.06	-0.58	0.40	-0.20	2.47		1.24	1.75(1.24-G)	0.2 (N Rule 3 -H)						

\* Each nose includes a complete light nose.

\*\* Nose cross girder setting 6, 4, and 2 is the position of the cross girder resting on the 6th, 4th, and 2d hole from the bottom of the LNCG post.

12. **RULE 4a. Lower RRB**  
 N RULE 4a = N RULE 3 + answer to column (q). Check N > H

13. **RULE 4b. Lower FRB**  
 T RULE 4b = T RULE 3 + answer to column (r). Check T > G

14. **Loads required.**  
 From Table 23, determine the truck and trailer loads required for the bridge.

15. **From Table 24, extract the following information:**  
 Construction time \_\_\_\_\_  
 Manpower requirements \_\_\_\_\_

16. **Final design:**  
 2E + \_\_\_\_\_ bays  
 LNCG setting \_\_\_\_\_  
 FRB setting \_\_\_\_\_  
 RRB setting \_\_\_\_\_  
 Bearing: NB \_\_\_\_\_ FB \_\_\_\_\_  
 Truck and trailer loads \_\_\_\_\_  
 Manpower required \_\_\_\_\_  
 Time to construct \_\_\_\_\_

**Table 23. MGB pallets DS**

Pallet Type	Bays											
	1	2	3	4	5	6	7	8	9	10	11	12
Erection	1	1	1	1	1	1	1	1	1	1	1	1
Bridge	5	5	5	6	6	6	7	7	7	8	8	8
Total	6	6	6	7	7	7	8	8	8	9	9	9

**Note:** More vehicles are required to transport personnel.

**Table 24. Work parties and building times on good sites (firm dry ground)**

(a)	Double-Story		
	4 Bays 16.8m MLC 60 (b)	8 Bays 24.1m MLC 60 (c)	12 Bays 31.4m MLC 60 (d)
Work party	1 + 24	1 + 24	1 + 24
Time by day (hours)	3/4	1	1 1/2
Time by night (hours)	1 1/4	1 1/2	2

**Notes:**  
 1. All timings exclusive of work on approaches.  
 2. Add 20 percent for untrained personnel.  
 3. Add 30 percent for adverse site conditions.  
 4. For disposition of work parties, see Table 32, page 40.

**DS 2E + 13 Through 2E + 22 Bays  
Without LRS  
(where water level or any obstructions  
are at least 2.7m below bank heights)**

Grid \_\_\_\_\_  
 Recon Officer \_\_\_\_\_  
 Map Ref \_\_\_\_\_  
 Unit \_\_\_\_\_  
 MLC \_\_\_\_\_

1. Measure AR gap A to A' \_\_\_\_\_

**NOTE:** Use Table 25 to obtain the answers to the following:

2. Select bridge. 2E + \_\_\_\_\_ bays

3. Bridge length \_\_\_\_\_

4. R distance \_\_\_\_\_

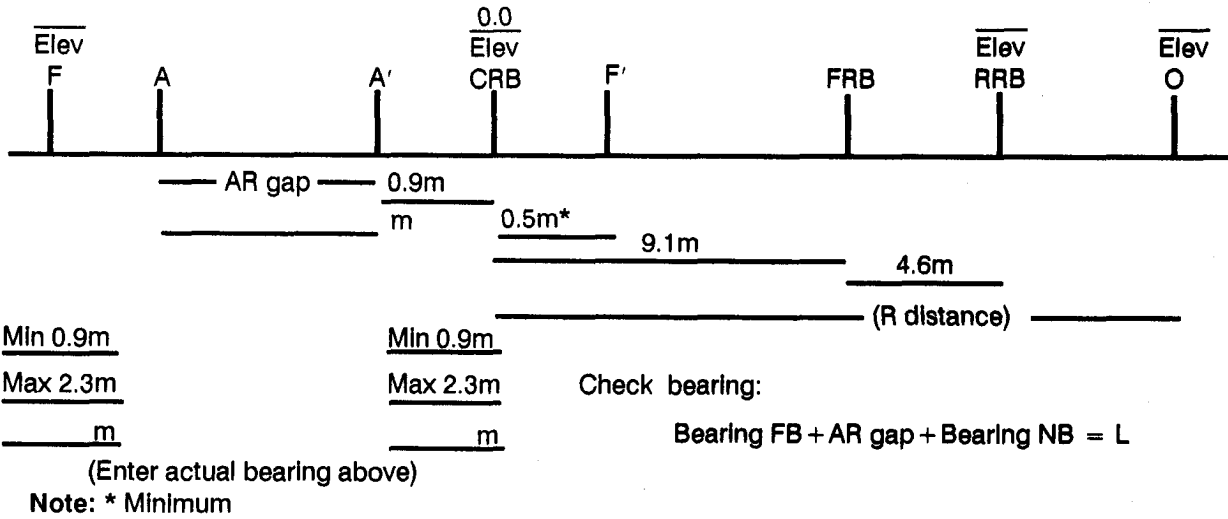
5. Nose construction \_\_\_\_\_

**Table 25. DS MGB 2E + 13 through 2E + 22 bays without LRS (where water or any obstructions are at least 2.7m below bank heights)**

Site Dimensions						Launch Design							
						Rule 1 Nose lift N with nose cross girder at -				Other methods of adjusting N & T			
AR Gap (a)	Brg Lgth (b)	2E + # of Bays (c)	MLC (d)	Nose Const * (e)	R Dist (f)	Tail Lift T (g)	Hole #6 ** (h)	Hole #4 ** (i)	Hole #2 ** (j)	Rule 2 Raise RRB & CRB by 0.25m		Rule 3a Lower RRB to Increase N	Rule 3b Lower CRB to Increase T
										N (k)	T (l)	N (m)	T (n)
28.6-30.9	33.2	13	50	6N1	27.4	0.40	-0.07	1.49	2.68	2.93	0.65	1.9 (0.82-G)	0.2 (2.93-H)
30.5-32.8	35.1	14		7N1	28.7	0.37	-0.38	1.00	2.65	2.90	0.62	1.9 (0.70-G)	0.2 (2.90-H)
32.3-34.6	36.9	15	40			29.6	0.34	-0.49	0.90	2.55	2.80	0.59	1.9 (0.76-G)
34.1-36.4	38.7	16		30	8N1		29.3	0.27	-0.15	0.75	2.69	2.94	0.52
35.9-38.2	40.1	17	24			6N1 + 3N2	34.8	0.24	-1.33	0.54	2.54	2.79	0.49
37.8-40.1	42.4	18		20	38.4			0.21	-2.04	-0.19	1.72	1.97	0.46
39.6-41.9	44.2	19	16			40.1	0.18	-1.93	-0.31	1.61	1.86	0.2 (1.86-H)	
41.4-43.7	46.0	20		16	40.1		0.15	-2.65	-0.52	1.17	1.42	0.43	1.9 (0.60-G)
43.3-45.6	47.9	21	16			40.1	0.15	-2.58	-0.68	1.04	1.29	0.40	1.9 (0.57-G)
45.1-47.4	49.7	22											

\* Each nose includes a complete light nose.  
 \*\* Nose cross girder setting 6, 4, and 2 is the position of the cross girder resting on the 6th, 4th, and 2d hole from the bottom of the LNCG post.

6. Key construction points, dimensions, and elevations.



7. Slope check.

Ensure that the difference in elevation between the F' and F pegs does not exceed one-tenth of the total bridge length. If it does, you will have to crib up, undertake a major construction project, or find another site.

8. Calculate H and G:

$$H = \frac{HtF + HtRRB \times (L - 0.5)}{13.7}$$

$$G = \frac{HtO - HtRRB \times R \text{ distance}}{13.7}$$

9. RULE 1. LNCG setting to give  $N > H$  and  $T > G$ .

Choose an LNCG setting so that  $N > H$ .

LNCG setting chosen \_\_\_\_\_

Then check if  $T > G$

If  $N > H$  and/or  $T > G$ , go to RULE 2.

10. RULE 2. Raise the CRB and RRB by 0.253m

Check  $N > H$  - Yes/No column (k)

Check  $T > G$  - Yes/No column (l)

If Yes, design is OK.

If  $N \nrightarrow H$ , go to RULE 3a.

If  $T \nrightarrow G$ , go to RULE 3b.

11. RULE 3a. Lower RRB

N RULE 3a = N RULE 2 + answer to column (m) Check  $N > H$

12. RULE 3b. Lower CRB

T RULE 3b = T RULE 2 + answer to column (n) Check  $T > G$

13. Loads required.

From Table 26, determine the truck and trailer loads required for the bridge.

Table 26. MGB pallets without LRS

Pallet Type	Bays									
	13	14	15	16	17	18	19	20	21	22
Erection	1	1	1	1	1	1	1	1	1	1
Bridge	9	9	9	10	10	10	11	11	11	12
Total	10	10	10	11	11	11	12	12	12	13
<p>Note: More vehicles are required to transport personnel.</p>										

14. From Table 27, extract the following information:  
 Construction time \_\_\_\_\_  
 Manpower requirements \_\_\_\_\_
15. Final design:  
 2E + \_\_\_\_\_ bays  
 LNCG setting \_\_\_\_\_  
 CRB setting \_\_\_\_\_  
 RRB setting \_\_\_\_\_  
 Bearing: NB \_\_\_\_\_ FB \_\_\_\_\_  
 Truck and trailer loads \_\_\_\_\_  
 Manpower required \_\_\_\_\_  
 Time to construct \_\_\_\_\_

**Table 27. Work parties and building times on good sites (firm dry ground)**

(a)	Double-Story Single-Span 13-22 Bays Without LRS		
	13 Bays 33.2m MLC 50 (b)	18 Bays 42.4m MLC 30 (c)	22 Bays 49.7m MLC 16 (d)
Work party	1 + 24	1 + 24	1 + 24
Time by day (hours)	1 1/2	1 3/4	2
Time by night (hours)	3	2 3/4	3
<b>Notes:</b> 1. All timings exclusive of work on approaches. 2. Add 20 percent for untrained personnel. 3. Add 30 percent for adverse site conditions. 4. For disposition of work parties, see Table 32, page 40.			

**DS 2E + 13 Through 2E + 22 Bays  
With LRS  
(where water level or any obstructions  
are at least 3.7m below bank heights)**

Grid \_\_\_\_\_  
 Recon Officer \_\_\_\_\_  
 Map Ref \_\_\_\_\_  
 Unit \_\_\_\_\_  
 MLC \_\_\_\_\_

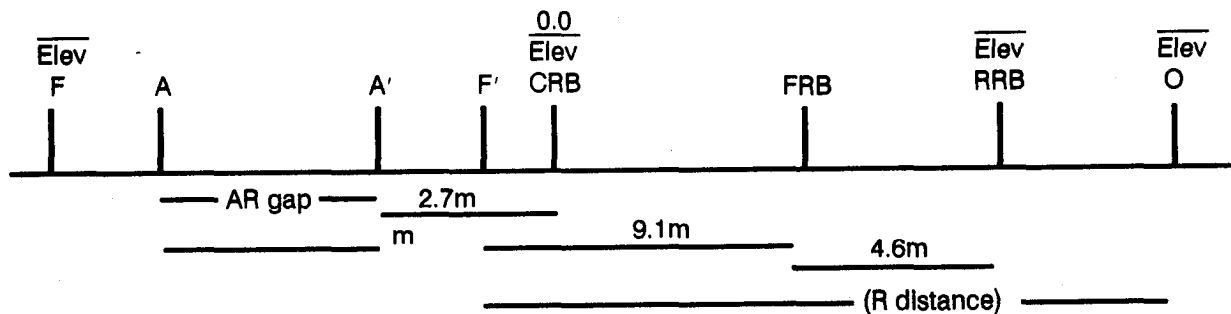
1. Measure AR gap A to A' \_\_\_\_\_
- NOTE:** Use Table 28 to obtain the answers to the following:
2. Select a bridge \_\_\_\_\_
3. Bridge length \_\_\_\_\_
4. R distance \_\_\_\_\_
5. Nose construction \_\_\_\_\_

**Table 28. DS MGB 2E + 13 through 2E + 22 bays with LRS( where water or any obstructions are at least 3.7m below bank heights)**

Site Dimensions						Launch Design				
						Rule 1 Nose lift N with nose cross girder at -				Rule 2 Lower RRB to increase N
AR Gap (a)	Brg Lgth (b)	2E + # of Bays (c)	MLC (d)	Nose Const * (e)	R Dist (f)	Tail Lift T (g)	Hole #6 ** (h)	Hole #4 ** (i)	Hole #2 ** (j)	N (k)
28.6-31.4	33.2	13	All MLC 60	7N1	27.4	0.40	0.48	1.87	3.52	1.9 (0.82-G)
30.5-33.3	35.1	14			28.7	0.37	0.31	1.72	3.35	1.9 (0.79-G)
32.3-34.7	36.9	15				0.34	0.25	1.64	3.29	1.9 (0.76-G)
34.1-36.9	38.7	16		8N1	29.6	0.30	-0.62	1.27	3.25	1.9 (0.72-G)
35.9-38.7	40.6	17			29.3	0.27	-0.77	1.12	3.10	1.9 (0.69-G)
37.8-40.6	42.4	18		6N1 + 3N2		34.8	0.21	-1.06	0.80	2.71
39.8-42.4	44.2	19			-1.46			0.40	2.32	
41.4-44.2	46.0	20			38.4	0.18	-1.75	0.11	2.03	1.9 (0.63-G)
43.3-45.6	47.9	21					-2.08	0.05	1.75	
45.1-46.5	49.7	22		40.1	0.15	-2.44	-0.31	1.40	1.9 (0.57-G)	

\* Each nose includes a complete light nose.  
 \*\* Nose cross girder setting 6, 4, and 2 is the position of the girder resting on the 6th, 4th, and 2d hole from the bottom of the post.

6. Key construction points, dimensions, and elevations.



Min See A-F                      Min See A'-F'  
 Max 2.3m                          Max 2.3m  
 \_\_\_\_\_ m                      \_\_\_\_\_ m

(Enter actual bearing above)

Check bearing:

$$\text{Bearing FB} + \text{AR gap} + \text{Bearing NB} = L$$

Number of Bays	Minimums	
	A to F	A' to F'
13, 14, 16 thru 20 bays	0.9m	0.9m
15 bays	1.1m	1.1m
21 bays	1.14m	1.14m
22 bays	1.6m	1.6m

7. Slope check.

Ensure that the difference in elevation between the F' and F peg does not exceed one-twentieth of the total bridge length. If it does, you will have to crib up, undertake a major construction project, or find another centerline.

8. Calculate H and G

$$H = HtF + \frac{HtRRB \times (L - 0.5)}{13.7}$$

$$G = HtO - \frac{HtRRB \times R \text{ distance}}{13.7}$$

9. RULE 1. LNCG setting to give N > H and T > G. Choose an LNCG setting to give N > H.

If N > H, go to RULE 2. If T > G, choose another site, or prepare to dig out under NB end of bridge prior to launch.

10. RULE 2. Lower RRB

N Rule 2 = N RULE 1 + answer to column (k)                      Check N > H

11. Loads required.

From Table 29, determine the truck and trailer loads required for the bridge.

Table 29. MGB DS with LRS

Type	Bays									
	13	14	15	16	17	18	19	20	21	22
Erection	1	1	1	1	1	1	1	1	1	1
Bridge	9	9	9	10	10	10	11	11	11	12
Link	2	2	2	2	2	2	2	2	2	2
Total	12	12	12	13	13	13	14	14	14	15

12. From Table 30, extract the following information:  
 Construction time \_\_\_\_\_  
 Manpower requirements \_\_\_\_\_

**Table 30. Work parties and building times on good sites (firm dry ground)**

(a)	Double-Story Single -Span 13-22 Bays With LRS		
	13 Bays 33.2m MLC 60 (b)	18 Bays 42.4m MLC 60 (c)	22 Bays 49.7m MLC 60 (d)
Work party	2 + 32	2 + 32	2 + 32
Time by day (hours)	2	2 3/4	3
Time by night (hours)	3	4	4 1/2
<b>Notes:</b> 1. All timings exclusive of work on approaches. 2. Add 20 percent for untrained personnel. 3. Add 30 percent for adverse site conditions. 4. For disposition of work parties, see Table 32, page 40.			

13. Final design:  
 2E + \_\_\_\_\_ bays  
 LNCG setting \_\_\_\_\_  
 CRB setting \_\_\_\_\_  
 RRB setting \_\_\_\_\_  
 Bearing: NB \_\_\_\_\_ FB \_\_\_\_\_  
 Truck and trailer loads \_\_\_\_\_  
 Manpower required \_\_\_\_\_  
 Time to construct \_\_\_\_\_

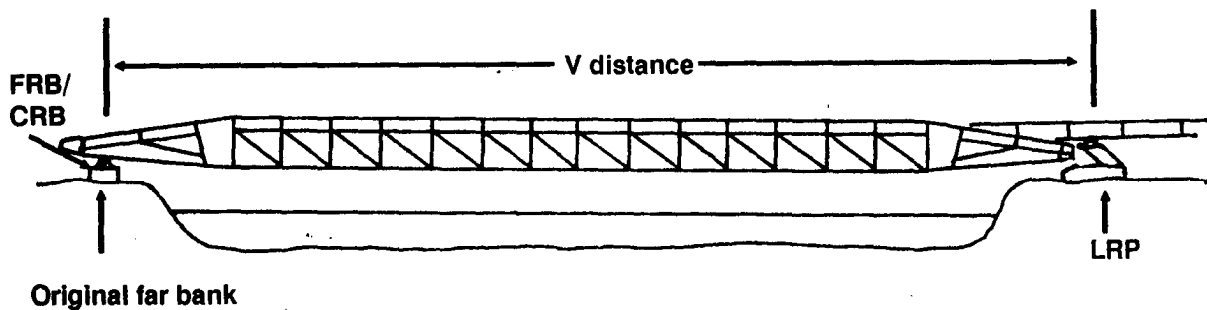
**V Distance.** The V distance, for delaunching purposes, is the distance from the FRB/CRB to the LRP for DS bridges requiring a launching nose. The V distance must never exceed the distance given in Table 31. Exceeding the V distance may result in failure of the launching nose.

Table 31. V distance for all double-story bridges

	Length of Bridge 2E + Number of Bays											
	1	2	3	4	5	6	7	8	9	10	11	12
Brg Lgth (m)	11.3	13.1	14.9	16.8	18.6	20.4	22.3	24.1	25.9	27.7	29.6	31.4
<b>Normal Site</b>												
Nose Conf	2N1	3N1		4N1			5N1			6N1		
V Distance	11.6	13.7	15.5	17.0	19.2	21.0	22.6	24.7	26.5	28.0	30.2	32.0
<b>Restricted Site</b>												
Nose Conf	3N1	4N1		4N1/ 5N1	5N1 or 6N1			6N1 or 7N1			7N1 or 8N1	
V Distance	11.9	13.7	15.5	17.4	19.2	21.0	22.9	24.7	26.5	28.3	30.2	32.0

	Length of Bridge 2E + Number of Bays Without LRS											
	13	14	15	16	17	18	19	20	21	22		
Brg Lgth (m)	33.2	35.1	36.9	38.7	40.5	42.4	44.2	46.0	47.9	49.7		
<b>Normal Site</b>												
Nose Conf	6N1	7N1			8N1			6N1 + 3N2				
V Distance	33.5	35.7	37.5	39.0	41.1	43.0	48.3	49.1	49.7	50.3		
<b>Restricted Site</b>												
Nose Conf	8N1								6N1 + 3N2			
V Distance	33.4	35.2	37.0	38.9	40.7	42.5	44.3	46.2	48.0	49.8		

	Length of Bridge 2E + Number of Bays With LRS										
	13	14	15	16	17	18	19	20	21	22	
Brg Lgth (m)	33.2	35.1	36.9	38.7	40.5	42.4	44.2	46.0	47.9	49.7	
<b>Normal Site</b>											
Nose Conf	7N1			8N1			6N1 + 3N2				
V Distance	34.6	36.4	37.6	39.9	42.4	43.7	45.5	47.5	48.6	49.5	



**Table 32. Disposition of work parties**

Bridge Length	Work Party	Main Tasks	Performed by Numbers
4 and 5 Bays SS	1 + 8	Supervisor Left hand side panels and launching nose. Right hand side panels and roller beam.	NCO 1*, 2, 3, and 4 5*, 6, 7, and 8
6 – 8 Bays SS	1 + 16	Supervisor Left hand side panels and launching nose. Right hand side panels and roller beam. Left hand side panels. Right hand side panels.	NCO 1*, 2, 3, and 4 5*, 6, 7, and 8 9*, 10, 11, and 12 13*, 14, 15, and 16
9 – 12 Bays SS	1 + 16	Supervisor Left hand side panels. Right hand side panels. Near and far bank bankseat beam and launching nose. Miscellaneous tasks.	NCO 1*, 2, 3, and 4 5*, 6, 7, and 8 9*, 10, 11, 12, 13, and 14 15 and 16
* Party Leader, responsible for inserting pins and locking rollers.			
All Double-Story 2E + 1 through 2E + 22 Bays, with or without LRS	1 + 24	Supervisor Left hand side party leader, responsible for all pins and left side jacks. Left hand side girder and building frame (FRB). Numbers 1 through 4–top panels, 5 through 8–bottom panels. Near and far bank bankseat beam and launching nose. Right hand side party leader, responsible for all pins and right side jacks. Right hand side girder and building frame (RRB). Numbers 17 through 20–top panels, 21 through 24–bottom panels.	NCO 15 1*, 2, 3, 4, 5*, 6, 7, and 8 9*, 10, 11, 12, 13, and 14 16 17*, 18, 19, 20, 21*, 22, 23, and 24
* Party Leader, responsible for inserting all pins.			
Link Reinforcement Party	1 + 8	Supervisor Left hand side reinforcement. Right hand side reinforcement.	NCO 25*, 26, 27, and 28** 29*, 30, 31, and 32**
<p>* Responsible for all pins, his side.                  ** Responsible for opening jacks and locking CRB rollers.                  LRS party under supervision of NCO will download, unstrap, unload, and position all LRS components on site in preparation for use.</p>			