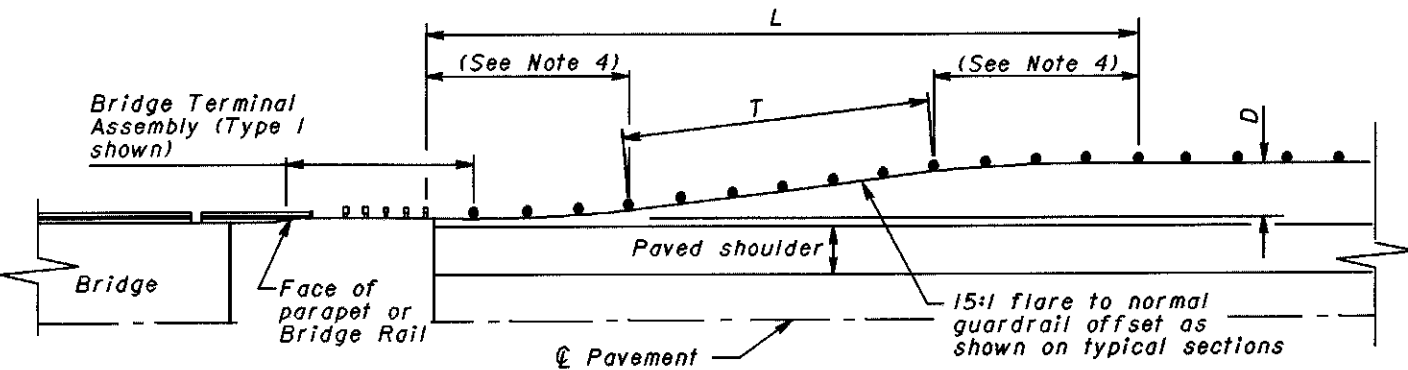


Recommended Lengths for Guardrail Offset Transitions		
D	L	T
Difference In Offset	Total Length	Tangent Length on Flares
0.6	19.05	3.81
1.2	26.67	11.43
1.8	38.10	22.86
2.4	45.72	30.48
3.0	53.34	38.10



## GUARDRAIL OFFSET TRANSITION

## NOTES

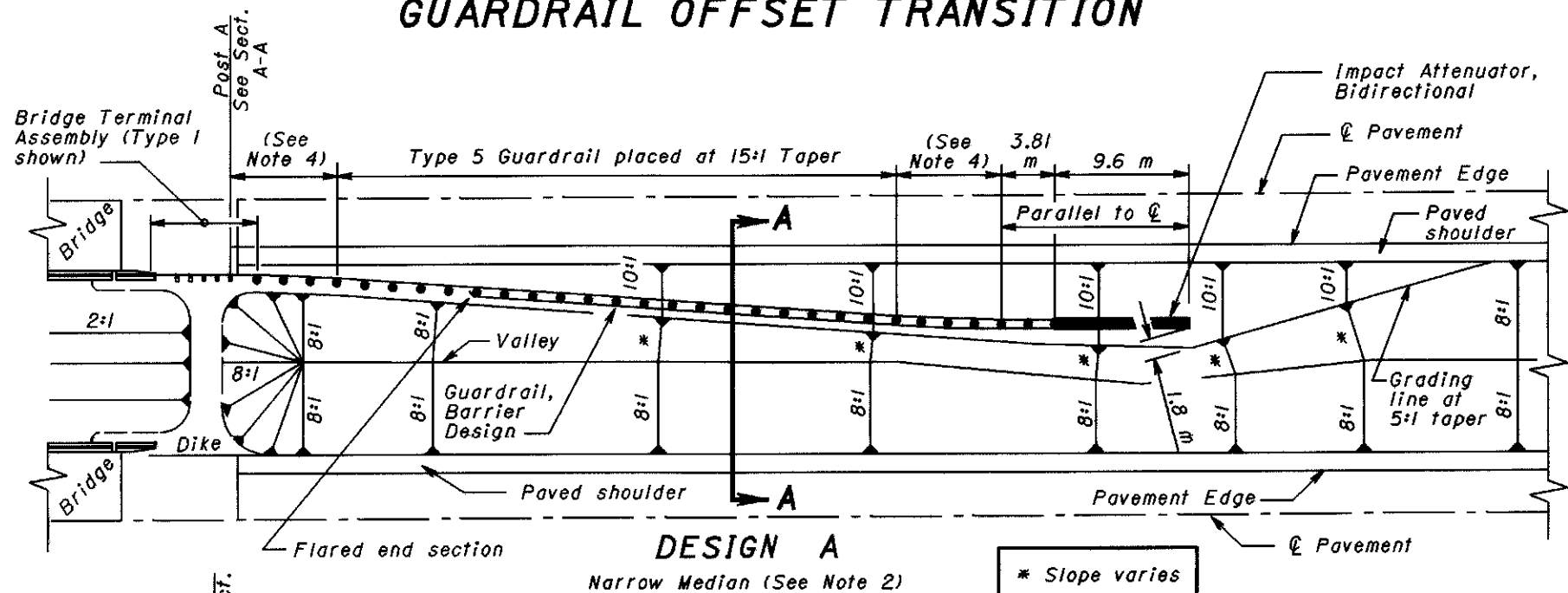
1) The length of guardrail needed shall be determined according to methods contained in Section 601 of the Location and Design Manual. Quantities shown on this sheet are based on these methods, using a lateral offset of 9 m for the hazard, a runoff length of 144m, and a guardrail taper rate of 15:1.

2) Design "A" shall be used in narrow medians where the end of the guardrail run extends into the clear zone of the opposite side traffic. In medians where the guardrail run would otherwise extend beyond the centerline of the median, the guardrail run should be turned to follow the centerline using a standard flare arc. The plans shall clearly indicate what portion of the flared guardrail run is to be constructed using barrier guardrail.

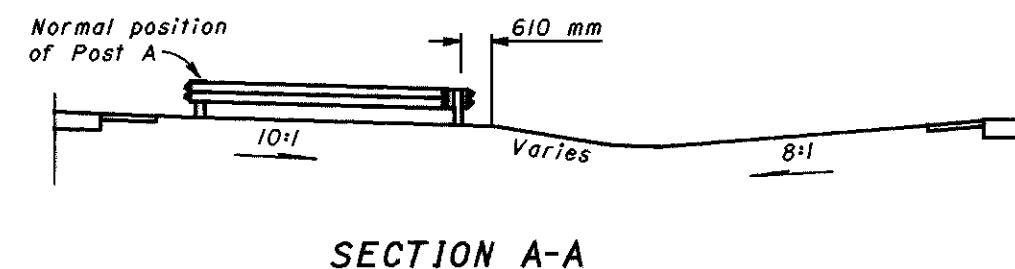
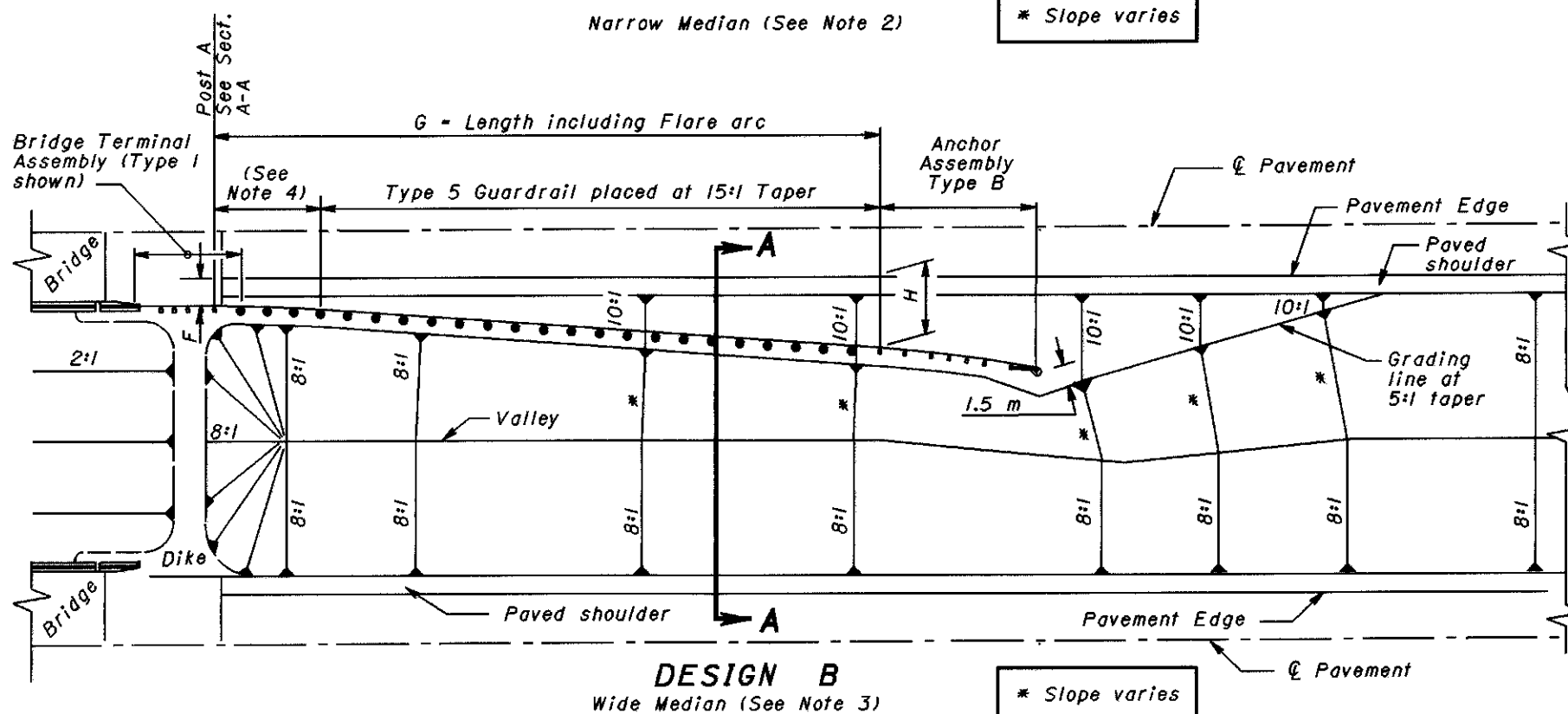
3) Design "B" shall be used where the guardrail run lies outside the clear zone of the opposite side traffic. In this case, the design of the guardrail flare in the median would be similar to that of the guardrail approach on the outside shoulder. Estimated quantities are provided in the box below.

4) Use a 7.62 m Standard Flare Arc as per Std. Constr. Dwg. GR-5.1M.

5) Cross-slopes in front of guardrail must be 10:1 or flatter. The 8:1 slopes shown in the median at other locations are the recommended practice, although other slopes may be designated in the plans.



Recommended Lengths <sup>(1)</sup> For Guardrail Flares at Bridge Approaches <sup>(2)</sup>			Table Notes
F	G	H	
Guardrail Offset of Bridge	Length of Need <sup>(3)</sup>	Offset at End of Run	1 Including the 7.62 m flare arc coming off the bridge, but excluding the anchor assembly/attenuator device. 2 For use with a Design "B" median or on the outside shoulder approach to the bridge. 3 Lengths are based on using whole numbers of guardrail panels (3.81 m long).
1.2	64.77	5.26	
1.8	60.96	5.61	
2.4	53.34	5.70	
3.0	49.53	6.05	
3.6	45.72	6.39	
4.2	41.91	6.74	
4.8	38.10	7.09	



## INTRODUCED GUARDRAIL APPROACH INSTALLATIONS

This Drawing Replaces GR-6.

OFFICE OF ROADWAY ENGINEERING  
OHIO DEPARTMENT OF TRANSPORTATION

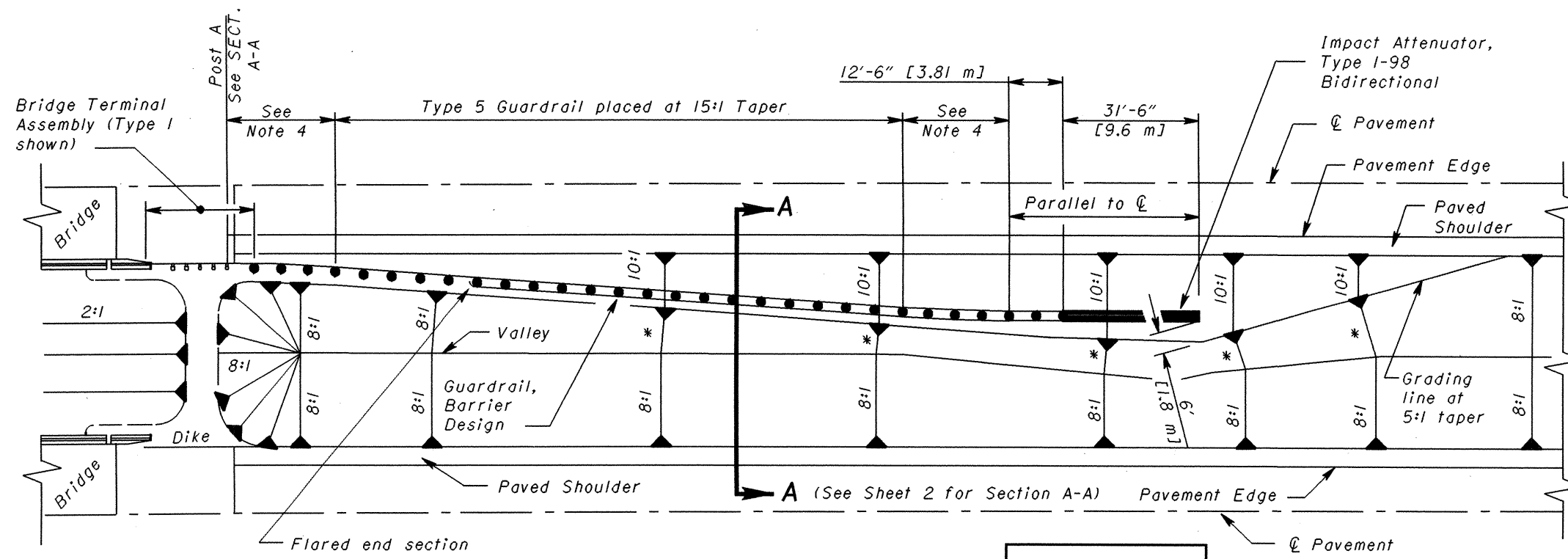
**GUARDRAIL AT BRIDGES**

DATE  
1-3-96

STANDARD CONSTRUCTION DRAWING **GR-6.1M**

APPROVED B.K. Hullman, P.E.  
ADMINISTRATOR

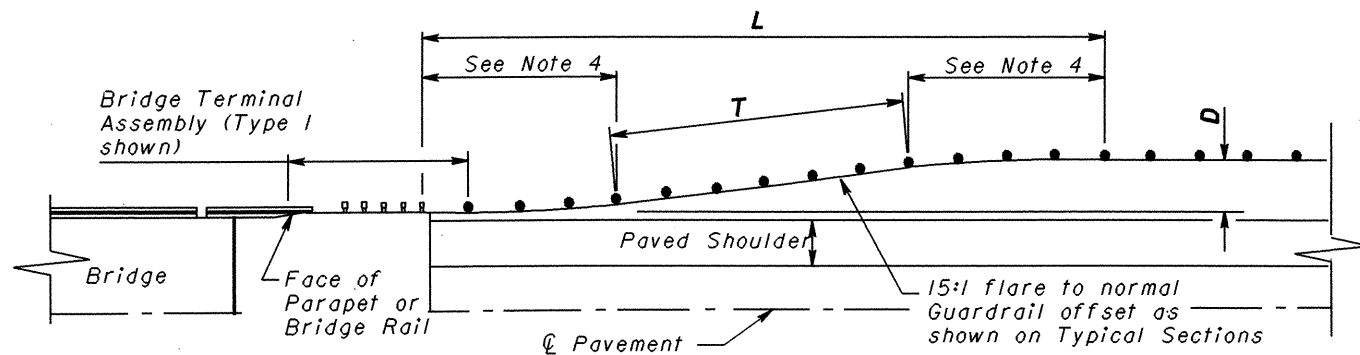




**DESIGN A**

Narrow Median (See NOTE 2)

**INTRODUCED GUARDRAIL APPROACH INSTALLATIONS**



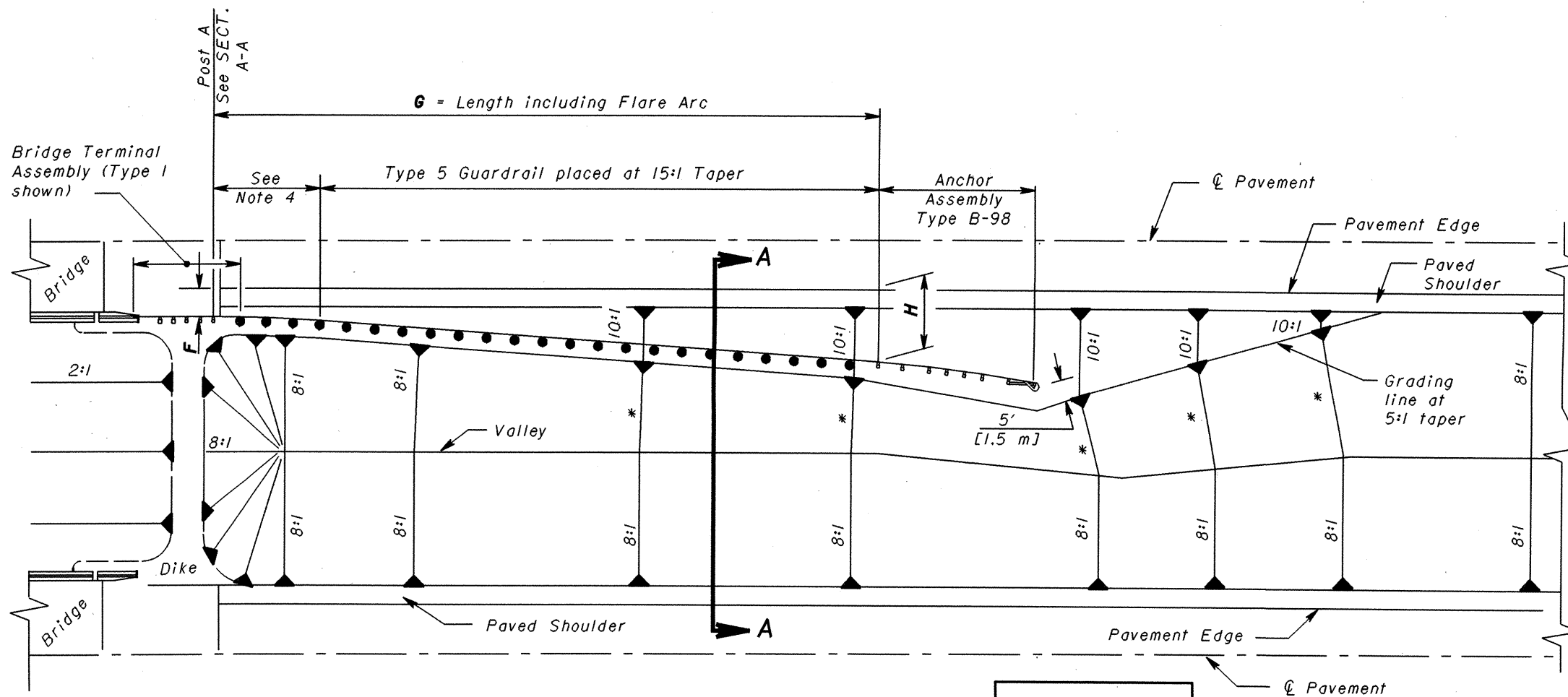
**NOTES**

- 1) The length of guardrail needed shall be determined according to methods contained in the **Location and Design Manual, Volume 1, Section 602**. Quantities shown on this sheet are based on these methods, using a lateral offset of 30' [9 m] for the area of concern, a runout length of 472' [144 m], and a guardrail flare rate of 15:1.
- 2) Use **DESIGN "A"** in narrow medians where the end of the guardrail run extends into the clear zone of the opposite side traffic. In medians where the guardrail run would otherwise extend beyond the centerline of the median, turn the guardrail flare to follow the centerline using a standard flare arc. The plans shall clearly indicate what portion of the flared guardrail run is to be constructed using barrier guardrail.
- 3) Use **DESIGN "B"** (see Sheet 2 of 2) where the guardrail run lies outside of the Clear Zone of the opposite side traffic. In this case, the design of the guardrail flare in the median would be similar to that of the guardrail approach on the outside shoulder. Estimated quantities are provided in the box below.
- 4) Use a 25'-0" [7.62 m] Standard Flare Arc per **SCD 6R-5.I**.
- 5) Provide 10:1 or flatter cross-slopes in front of guardrail. The 8:1 slopes shown in the median at other locations are the recommended practice, although other slopes may be designated in the plans.

RECOMMENDED LENGTHS FOR GUARDRAIL OFFSET TRANSITIONS					
English (ft)			Metric (m)		
D Difference in Offset	L Total Length	T Tangent Length on Flares	D Difference in Offset	L Total Length	T Tangent Length on Flares
2	62.5	12.5	0.6	19.05	3.81
4	87.5	37.5	1.2	26.67	11.43
6	125.0	75.0	1.8	38.10	22.86
8	150.0	100.0	2.4	45.72	30.48
10	175.0	125.0	3.0	53.34	38.10

**GUARDRAIL OFFSET TRANSITION**

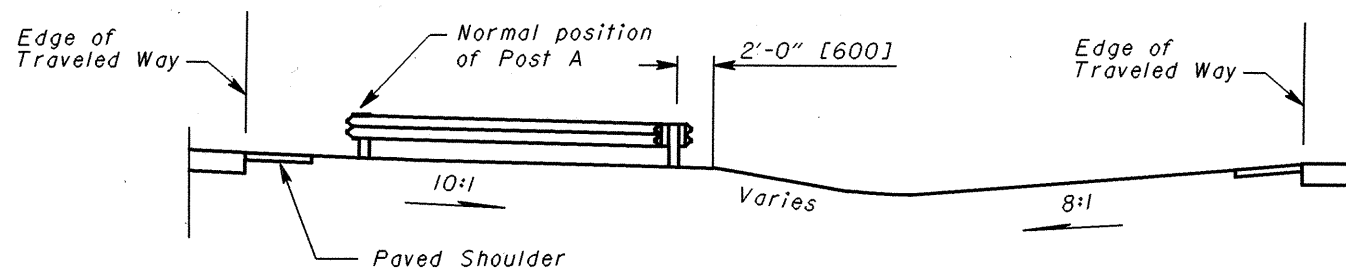
OHIO DEPARTMENT OF TRANSPORTATION  
 ROADWAY ENGINEERING SERVICES  
 STANDARD ROADWAY CONSTRUCTION DRAWING  
 GUARDRAIL AT BRIDGES  
 GR-6.I  
 1/2  
 THIS DRAWING REPLACES GR-6.I.M DATED 1-3-96.  
 STDS. ENGR. D. Focke  
 ROADWAY DESIGN ENGINEER  
 DATE 4-18-03



**DESIGN B**

Wide Median (See NOTE 3 on Sheet 1)

**INTRODUCED GUARDRAIL APPROACH INSTALLATIONS**



**SECTION A-A**

**RECOMMENDED LENGTHS<sup>(1)</sup> FOR GUARDRAIL FLARES AT BRIDGE APPROACHES<sup>(2)</sup>**

English (ft)			Metric (m)		
F Guardrail Offset at Bridge	G Length of Need (3)	H Offset at End of Run	F Guardrail Offset at Bridge	G Length of Need (3)	H Offset at End of Run
4	212.5	17.3	1.2	64.77	5.26
6	200.0	18.4	1.8	60.96	5.61
8	175.0	18.7	2.4	53.34	5.70
10	162.5	19.8	3.0	49.53	6.05
12	150.0	21.0	3.6	45.72	6.39
14	137.5	22.1	4.2	41.91	6.74
16	125.0	23.3	4.8	38.10	7.09

- 1 Including the 25'-0" [7.62 m] Standard Flare Arc coming off the Bridge, but excluding the Anchor Assembly/Attenuator device.
- 2 For use with a DESIGN "B" Median (see this sheet) or on the outside Shoulder approach to the Bridge.
- 3 Lengths are based on using whole numbers of Guardrail panels (12'-6" [3.81 m] long).

THIS DRAWING REPLACES GR-6.1M DATED 1-3-96.

STANDARD ROADWAY CONSTRUCTION DRAWING

**GUARDRAIL AT BRIDGES**

**ROADWAY ENGINEERING SERVICES**

All metric dimensions (in brackets [ ]) are in millimeters unless otherwise noted.

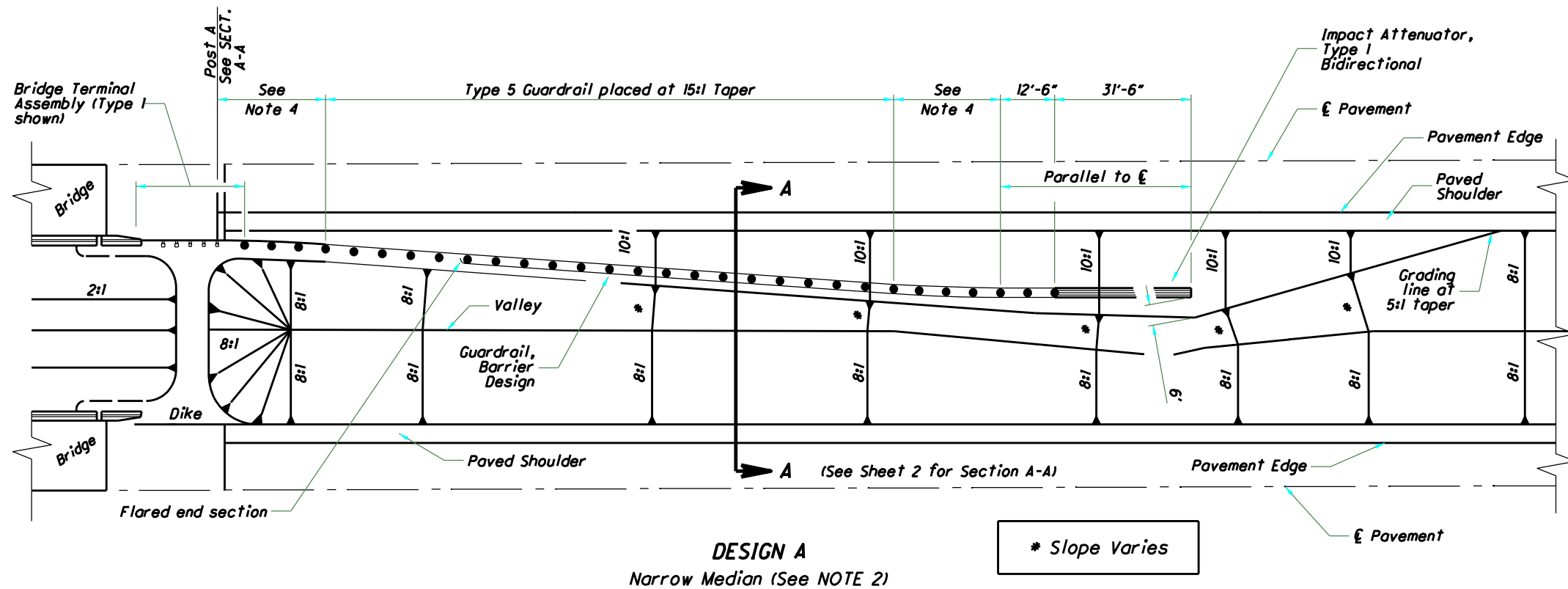
STDS. ENGR.  
D. Focke

OHIO DEPARTMENT OF TRANSPORTATION  
*Raymond J. Sauter*  
ROADWAY DESIGN ENGINEER

4-18-03  
DATE

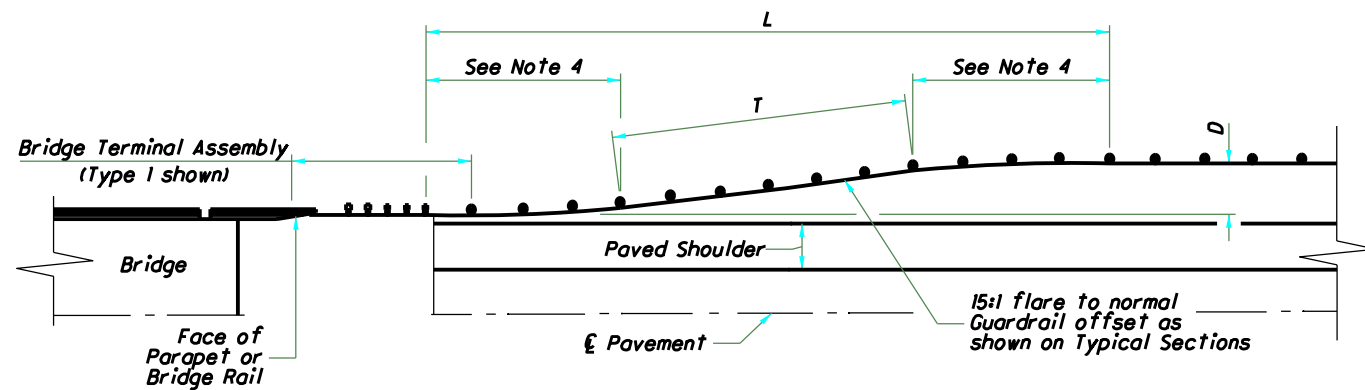
NUMBER  
**GR-6.1**

2 / 2



**DESIGN A**  
Narrow Median (See NOTE 2)

**INTRODUCED GUARDRAIL APPROACH INSTALLATIONS**

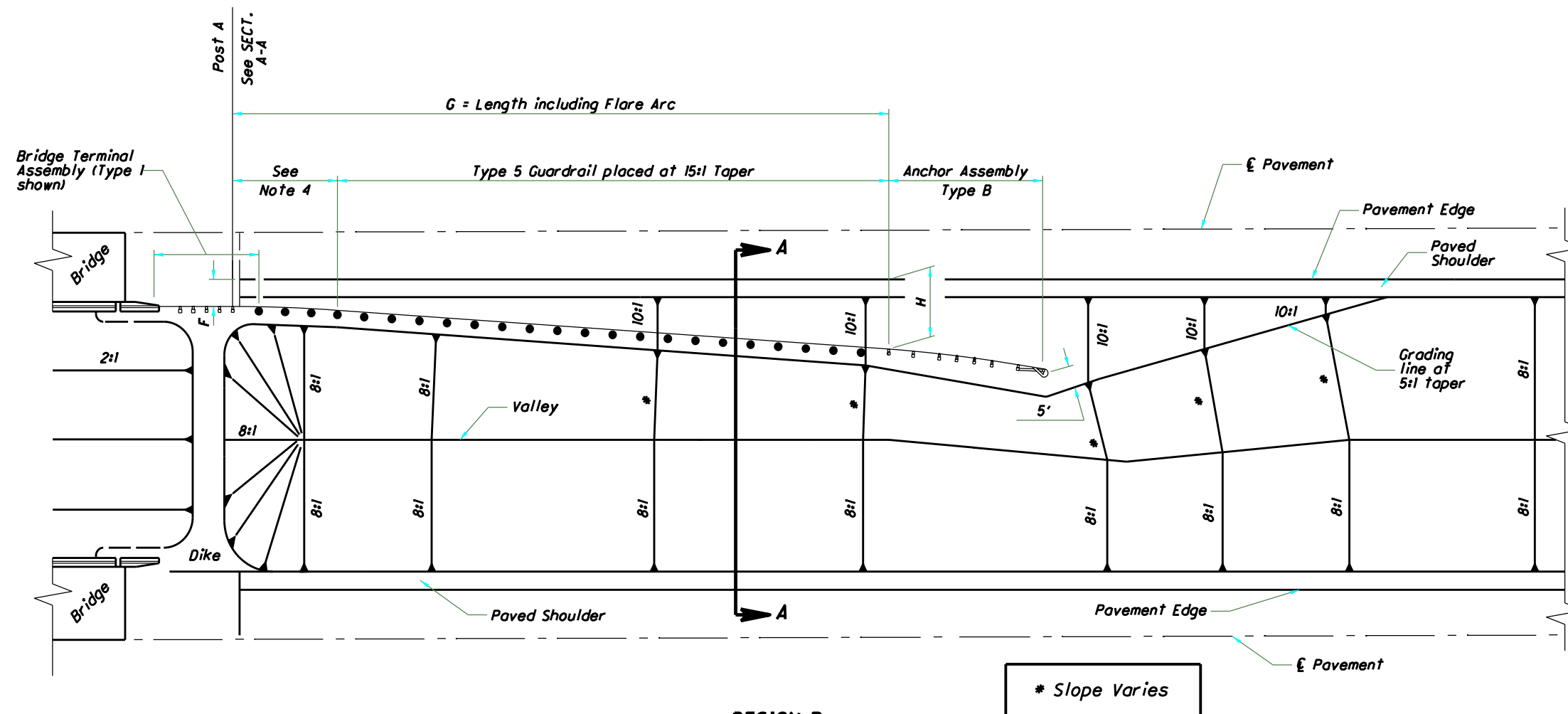


RECOMMENDED LENGTHS FOR GUARDRAIL OFFSET TRANSITIONS		
English (ft)		
D Difference in Offset	L Total Length	T Tangent Length on Flares
2	62.5	12.5
4	87.5	37.5
6	125.0	75.0
8	150.0	100.0
10	175.0	125.0

**GUARDRAIL OFFSET TRANSITION**

**NOTES**

- 1) The length of guardrail needed shall be determined according to methods contained in the Location and design Manual, Volume 1, Section 602. Quantities shown on this sheet are based on these methods, using a lateral offset of 30' for the area of concern, a runout length of 472', and a guardrail flare rate of 15:1.
- 2) Use DESIGN "A" in narrow medians where the end of the guardrail run extends into the clear zone of the opposite side traffic. In medians where the guardrail run would otherwise extend beyond the centerline of the median, turn the guardrail run to follow the centerline using a standard flare arc. The plans shall clearly indicate what portion of the flared guardrail run is to be constructed using barrier guardrail.
- 3) Use DESIGN "B" (see Sheet 2 of 2) where the guardrail run lies outside of the Clear Zone of the opposite side traffic. In this case, the design of the guardrail flare in the median would be similar to that of the guardrail approach on the outside shoulder. Estimated quantities are provided in the box below.
- 4) Use a 25'-0" Standard Flare Arc per SCD GR-5.1.
- 5) Provide 10:1 or flatter cross-slopes in front of guardrail. The 8:1 slopes shown in the median at other locations are the recommended practice, although other slopes may be designated in the plans.

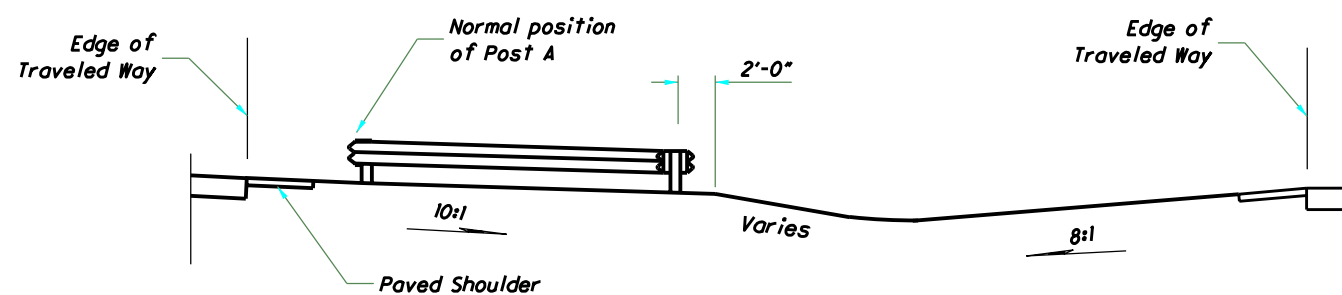


**DESIGN B**

Wide Median (See NOTE 3 on Sheet 1)

**INTRODUCED GUARDRAIL APPROACH INSTALLATIONS**

\* Slope Varies



**SECTION A-A**

RECOMMENDED LENGTHS FOR <sup>(1)</sup> GUARDRAIL FLARES AT BRIDGE APPROACHES <sup>(2)</sup>		
English (ft)		
F Guardrail Offset At Bridge	G Length of Need (3)	H Offset At End of Run
4	212.5	17.3
6	200.0	18.4
8	175.0	18.7
10	162.5	19.8
12	150.0	21.0
14	137.5	22.1
16	125.0	23.3

1. Including the 25'-0" Standard Flare Arc coming off the Bridge, but excluding the Anchor Assembly/Attenuator device.
2. For use with a DESIGN "B" Median (see this sheet) or on the outside Shoulder approach to the Bridge.
3. Lengths are based on using whole numbers of Guardrail panels (12'-6" long).

THIS DRAWING REPLACES GR-6-IM DATED 4-18-03.

STANDARD ROADWAY CONSTRUCTION DRAWING

GUARDRAIL AT BRIDGES

SCD NUMBER  
GR-6.1

OFFICE OF  
ROADWAY  
ENGINEERING

STATE  
ENGINEER

M. Blaine

STATE OF OHIO DEPARTMENT OF TRANSPORTATION

David B. Brown

ADMINISTRATOR

4-16-10

DATE