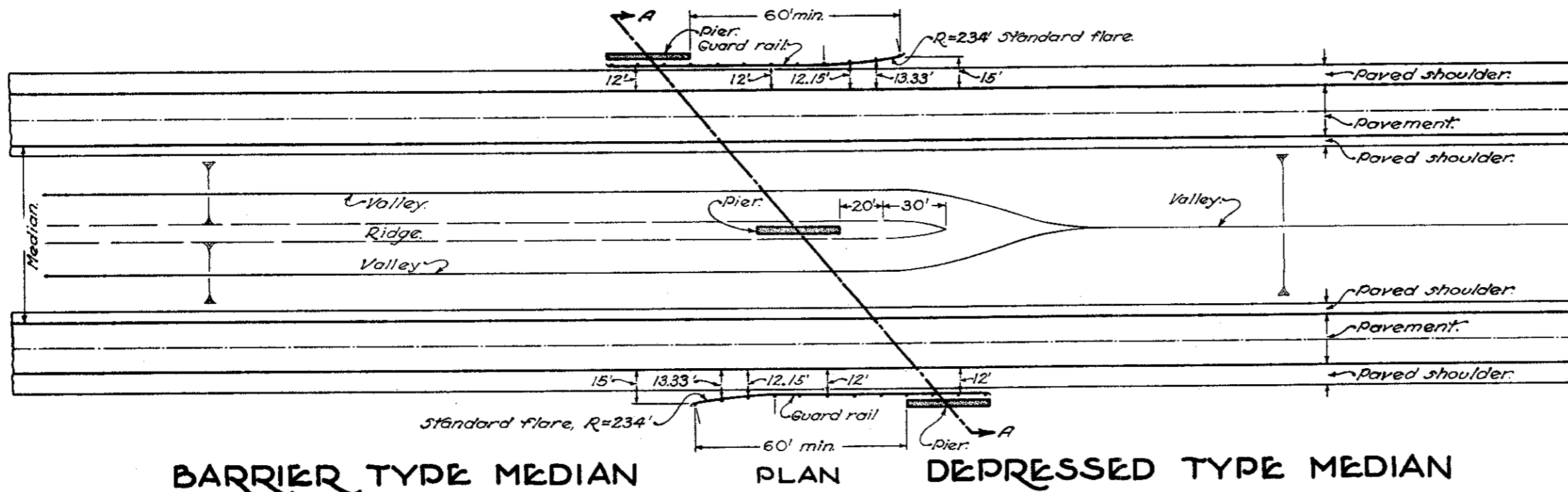
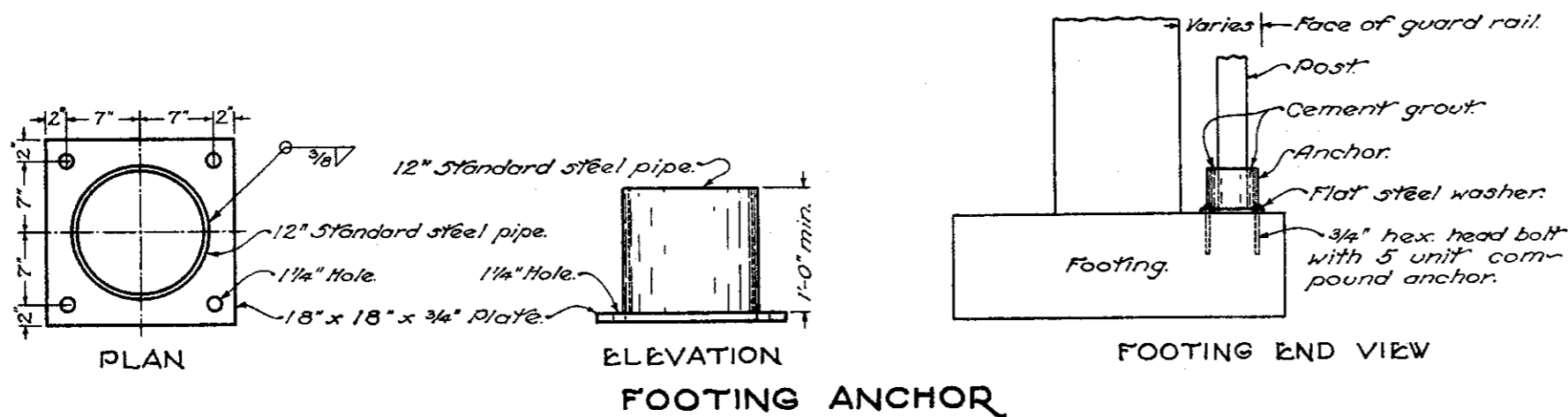
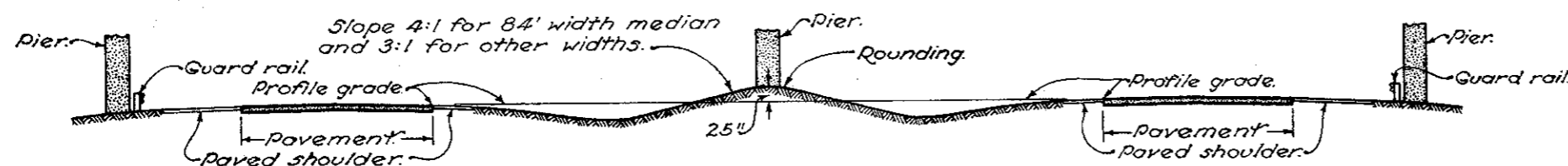


GUARD RAIL PROTECTION AT PIERS



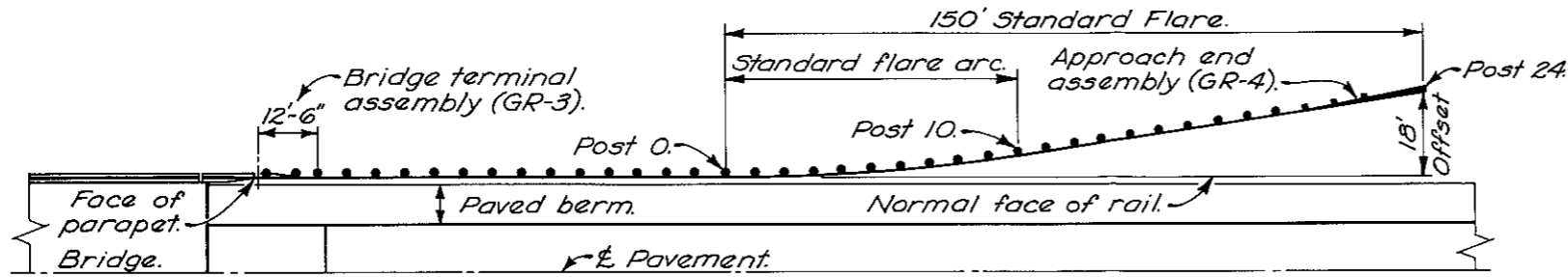
NOTES

GENERAL:— Design details shown hereon shall govern the construction of guard rail at structures and piers unless otherwise shown on the plans.
FOOTING ANCHOR to be used where posts are over footings and less than 3 feet of earth is provided above the top of footing. Cost of anchor, bolts, cement grout, etc. is included in cost of guard rail.

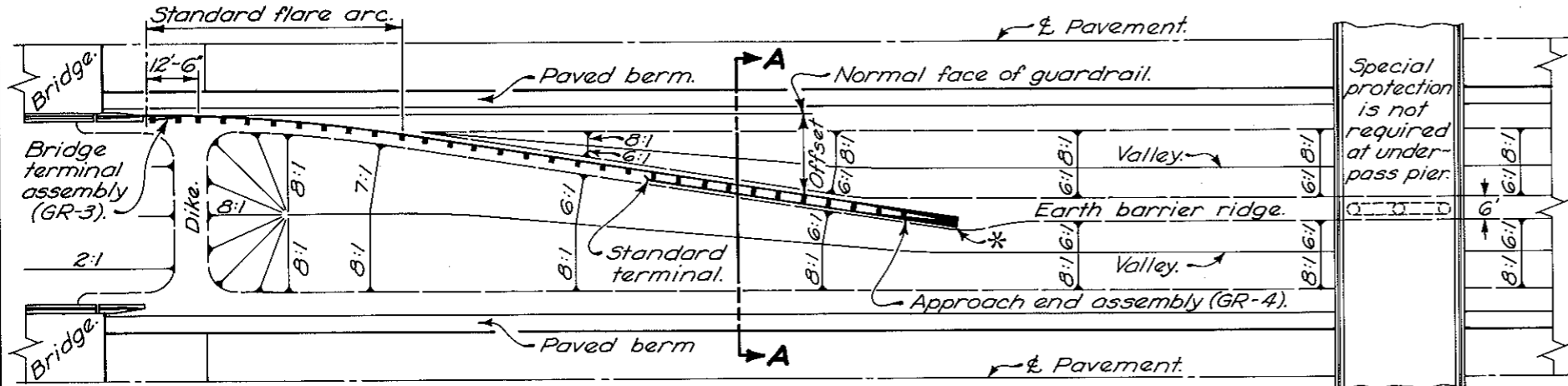


BUREAU OF LOCATION AND DESIGN OHIO DEPARTMENT OF HIGHWAYS		DATE 6-1-65
GUARD RAIL		
STANDARD CONSTRUCTION DRAWING		GR-6
APPROVED <i>[Signature]</i> ENGR. L. & D.		

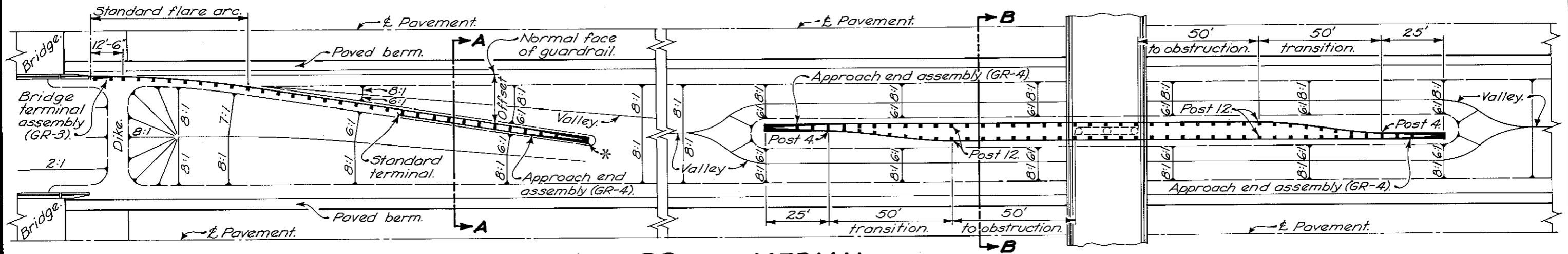
Post No. (6'-3" 9%)	Offset
0	0.00'
1	.05'
2	.19'
3	.43'
4	.76'
5	1.18'
6	1.71'
7	2.32'
8	3.04'
9	3.84'
10	4.74'



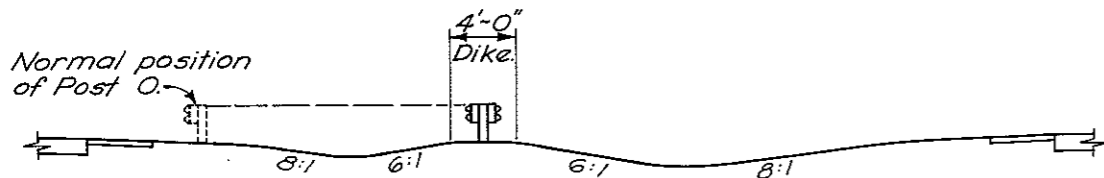
ROADSIDE APPROACH



BARRIER MEDIAN

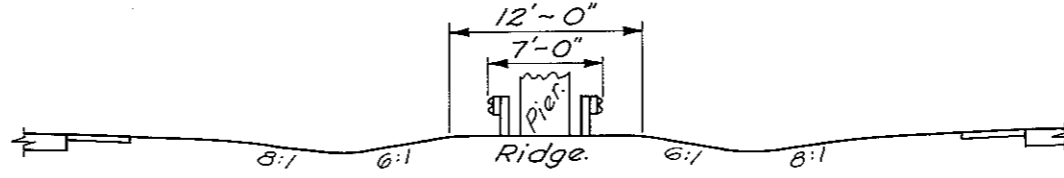


DEPRESSED MEDIAN



Elevation of the top of rail at any point "X" shall be the same distance above the edge of pavement opposite point "X" as the top of rail at post "0" is above the edge of pavement at that point. Elevation of the top of dike shall be 27" below the top of rail at any point on the flare.

SECTION A-A



Elevation of the top of ridge is the same as the elevation at the edge of pavement.

SECTION B-B

NOTES

MEDIAN SLOPES: For 50' wide medians, backslopes shall be 4:1 and inslopes shall be 6:1. For 40' wide medians both backslopes and inslopes shall be 4:1.

When median slopes away from the bridge, the transverse slope shall be flattened in order to eliminate the need for a catch basin.

PIER PROTECTION

Post No.	Space between faces of barrier rail
4	2.30'
5	3.00'
6	3.67'
7	4.33'
8	5.00'
9	5.67'
10	6.33'
11	6.83'
12	7.00'

TERMINAL POST OFFSET & RAIL LENGTHS REQUIRED FOR VARIOUS MEDIAN WIDTHS

Median Width	* Terminal Post No.	Offset from normal face of rail	Length of Standard rail	Length of Barrier rail
40'	20	14.21'	87.50'	37.50'
50'	26	19.89'	112.50'	50.00'
55'	28	21.79'	112.50'	62.50'
60'	32	25.58'	125.00'	75.00'
84'	44	36.94'	175.00'	100.00'

BUREAU OF LOCATION AND DESIGN
OHIO DEPARTMENT OF HIGHWAYS

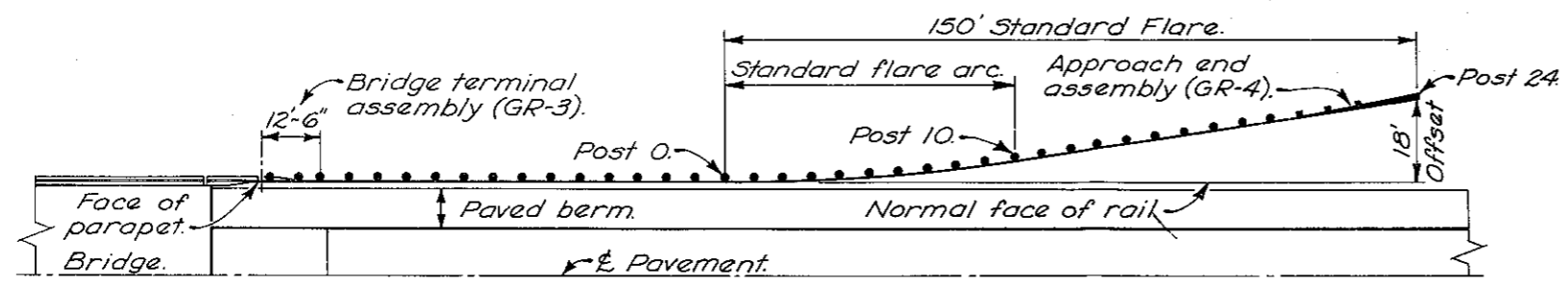
DATE
2-15-68

GUARDRAIL AT BRIDGES

STANDARD CONSTRUCTION DRAWING GR-6

APPROVED *R. L. Smith* ENGR. L. & D.

Post No. (6'-3" %)	Offset
0	0.00'
1	.05'
2	.19'
3	.43'
4	.76'
5	1.18'
6	1.71'
7	2.32'
8	3.04'
9	3.84'
10	4.74'



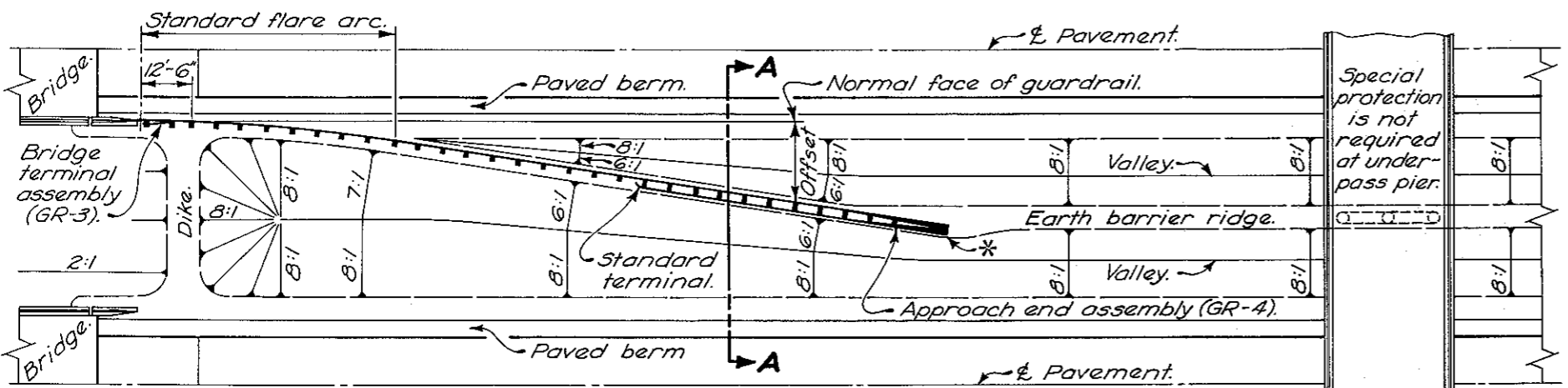
ROADSIDE APPROACH

NOTES

MEDIAN SLOPES: For 50' wide medians, backslopes shall be 4:1 and inslopes shall be 6:1. For 40' wide medians both backslopes and inslopes shall be 4:1.

When median slopes away from the bridge, the transverse slope shall be flattened in order to eliminate the need for a catch basin.

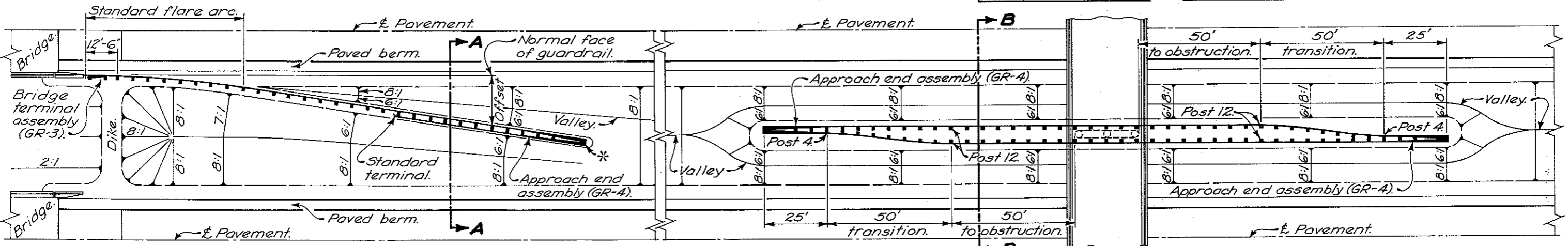
Details shown for pier protection in depressed median are designed to protect a pier 36 inches in width. If a wider pier is to be protected, face of barrier rail at the pier shall be offset 24 inches on each side. Space between faces of barrier rail tabulated for the 50-foot transition shall be adjusted as required.



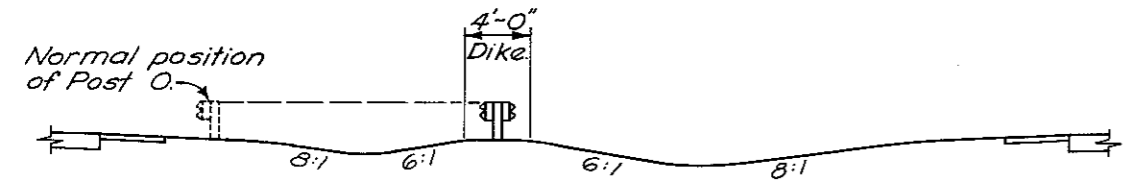
BARRIER MEDIAN

Post No.	Space between faces of barrier rail
4	2.30'
5	3.00'
6	3.67'
7	4.33'
8	5.00'
9	5.67'
10	6.33'
11	6.83'
12	7.00'

Median Width	* Terminal Post No.	Offset from normal face of rail	Length of Standard rail	Barrier rail
40'	20	14.21'	87.50'	37.50'
50'	26	19.89'	112.50'	50.00'
55'	28	21.79'	112.50'	62.50'
60'	32	25.58'	125.00'	75.00'
84'	44	36.94'	175.00'	100.00'

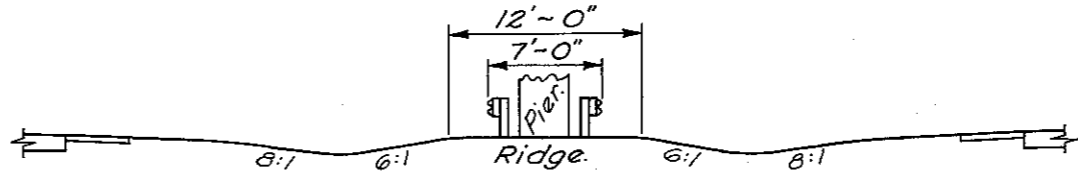


DEPRESSED MEDIAN



Elevation of the top of rail at any point "X" shall be the same distance above the edge of pavement opposite point "X" as the top of rail at post "0" is above the edge of pavement at that point. Elevation of the top of dike shall be 27" below the top of rail at any point on the flare.

SECTION A-A



Elevation of the top of ridge is the same as the elevation at the edge of pavement.

SECTION B-B

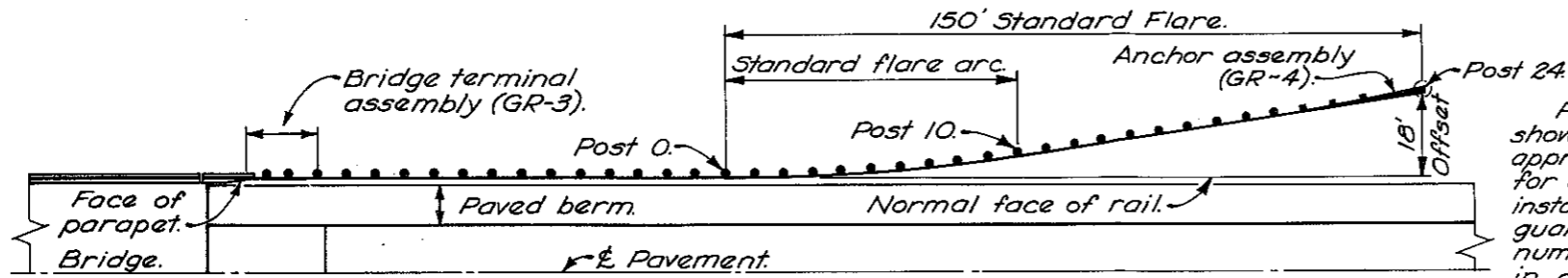
BUREAU OF LOCATION AND DESIGN
OHIO DEPARTMENT OF HIGHWAYS

GUARDRAIL AT BRIDGES

STANDARD CONSTRUCTION DRAWING GR-6
APPROVED *R. L. Sullivan* ENGR, L. & D.

DATE
2-15-68
7-15-68

Post No. (6'-3" 9%)	Offset
0	0.00'
1	.05'
2	.19'
3	.43'
4	.76'
5	1.18'
6	1.71'
7	2.32'
8	3.04'
9	3.84'
10	4.74'



ROADSIDE APPROACH

Post arrangements shown in the roadside approach are designed for application to Type 5 installations. For Type 7 guardrail omit odd numbered posts except in anchor assembly and transition.

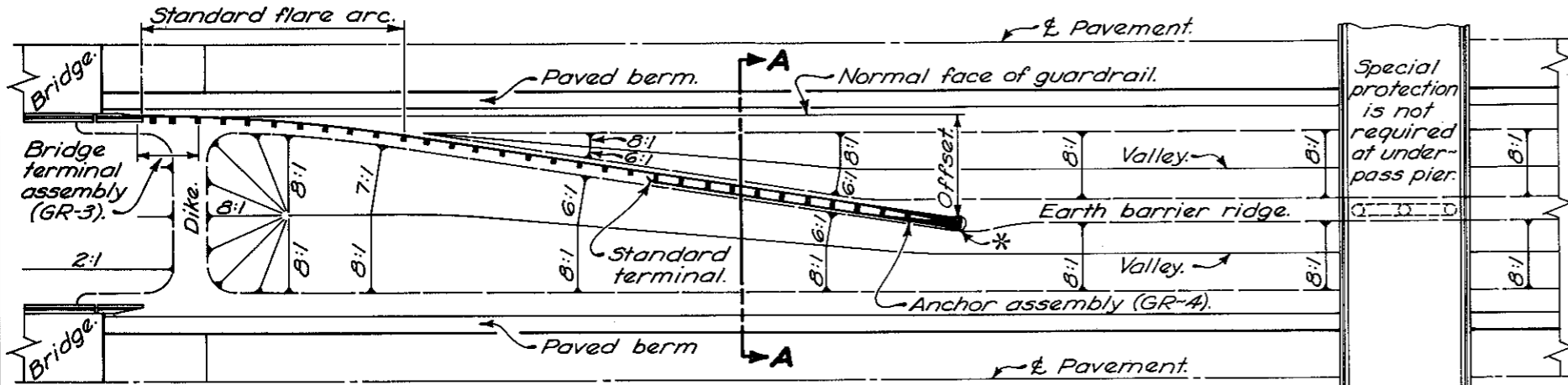
NOTES

MEDIAN SLOPES: For 50' wide medians, backslopes shall be 4:1 and inslopes shall be 6:1. For 40' wide medians both backslopes and inslopes shall be 4:1.

When median slopes away from the bridge, the transverse slope shall be flattened in order to eliminate the need for a catch basin.

Details shown for pier protection in depressed median are designed to protect a pier 36 inches in width. If a wider pier is to be protected, face of barrier rail at the pier shall be offset 24 inches on each side. Space between faces of rails, shown in the table, shall be adjusted as required.

Type 5 guardrail and barrier rail shall be used for all median installations.



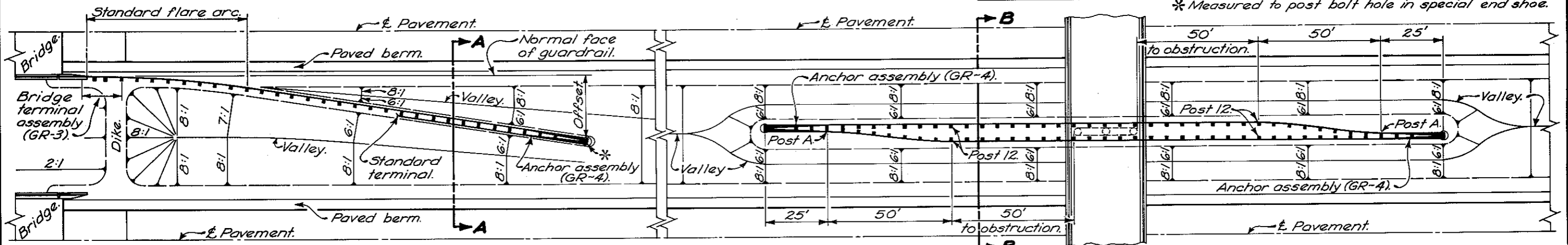
BARRIER MEDIAN

Post No.	Space between faces of rails.
A	2.30'
5	3.00'
6	3.67'
7	4.33'
8	5.00'
9	5.67'
10	6.33'
11	6.83'
12	7.00'

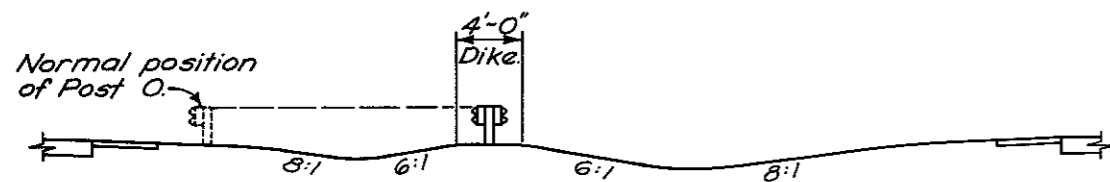
TERMINAL POST OFFSET & RAIL LENGTHS REQUIRED FOR VARIOUS MEDIAN WIDTHS

Median Width	* Terminal Post No.	Offset from normal face of rail	* Length Standard Barrier rail	* Length Barrier rail
40'	20	14.21'	87.50'	37.50'
50'	26	19.89'	112.50'	50.00'
55'	28	21.79'	112.50'	62.50'
60'	32	25.58'	125.00'	75.00'
84'	44	36.94'	175.00'	100.00'

* Measured to post bolt hole in special end shoe.

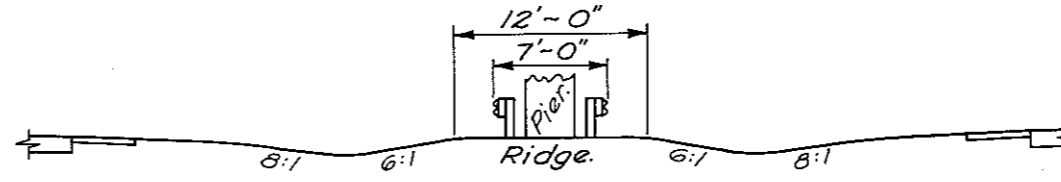


DEPRESSED MEDIAN



Elevation of the top of rail at any point "X" shall be the same distance above the edge of pavement opposite point "X" as the top of rail at post "0" is above the edge of pavement at that point. Elevation of the top of dike shall be 27" below the top of rail at any point on the flare.

SECTION A-A



Elevation of the top of ridge is the same as the elevation at the edge of pavement.

SECTION B-B

BUREAU OF LOCATION AND DESIGN
OHIO DEPARTMENT OF HIGHWAYS

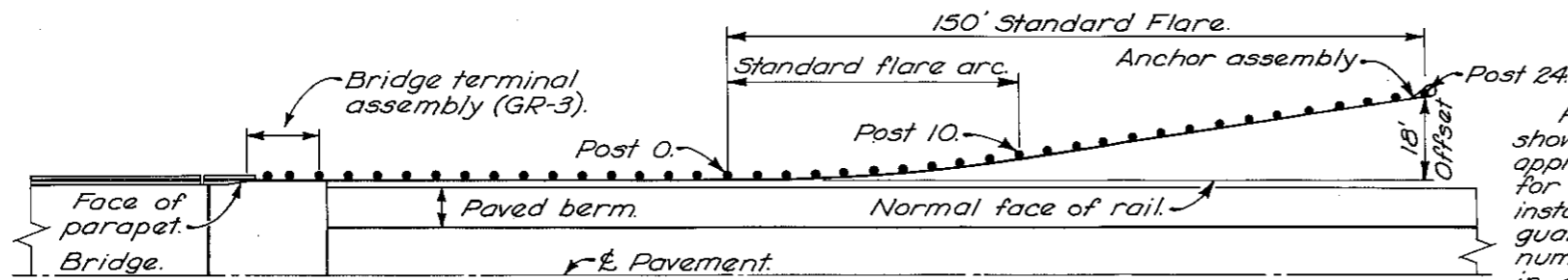
GUARDRAIL AT BRIDGES

STANDARD CONSTRUCTION DRAWING GR-6

APPROVED *[Signature]* ENGR., L. & D.

DATE
2-13-66
7-13-66
1-1-71

Post No. (6'-3" %)	Offset
0	0.00'
1	.05'
2	.19'
3	.43'
4	.76'
5	1.19'
6	1.71'
7	2.33'
8	3.04'
9	3.84'
10	4.74'



ROADSIDE APPROACH
(With 30' benched shoulder).

Post arrangements shown in the roadside approach are designed for application to Type 5 installations. For Type 7 guardrail omit odd numbered posts except in anchor assembly and transition.

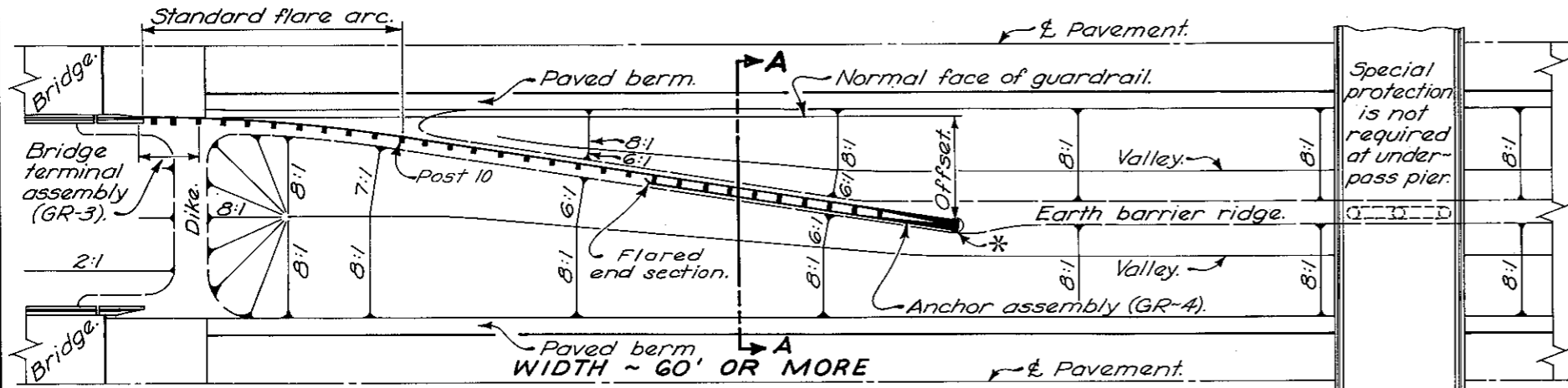
NOTES

MEDIAN SLOPES: For 50' wide medians, backslopes shall be 4:1 and inslopes shall be 6:1. For 40' wide medians both backslopes and inslopes shall be 4:1.

When median slopes away from the bridge, the transverse slope shall be flattened in order to eliminate the need for a catch basin.

Type 5 guardrail and barrier rail shall be used for all median installations.

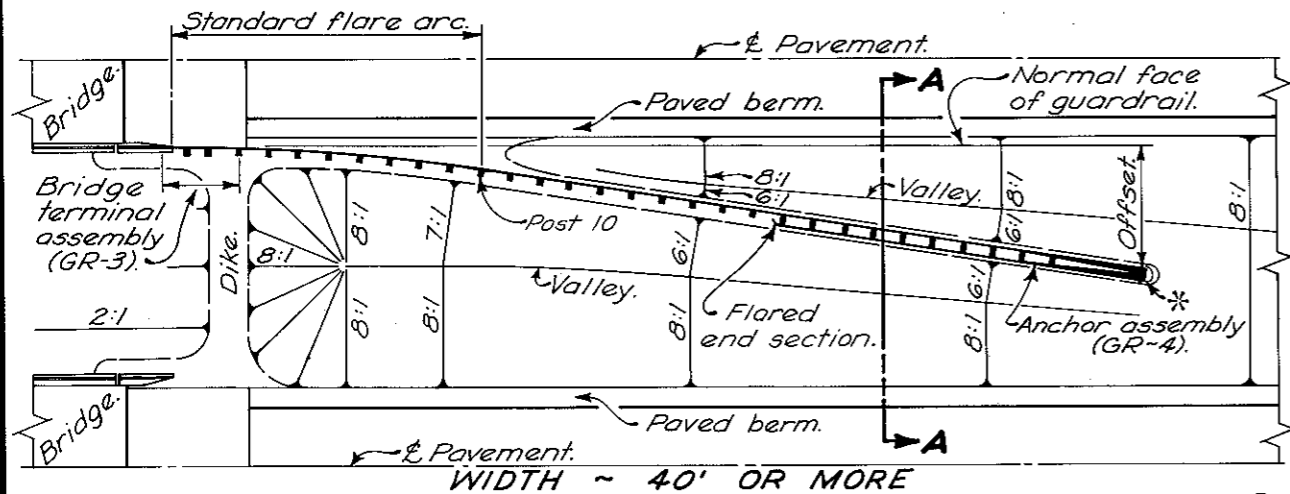
FLARE: The 150' roadside flare shown hereon is for use on a 30' benched shoulder, the actual flare specified in the plans may be different.



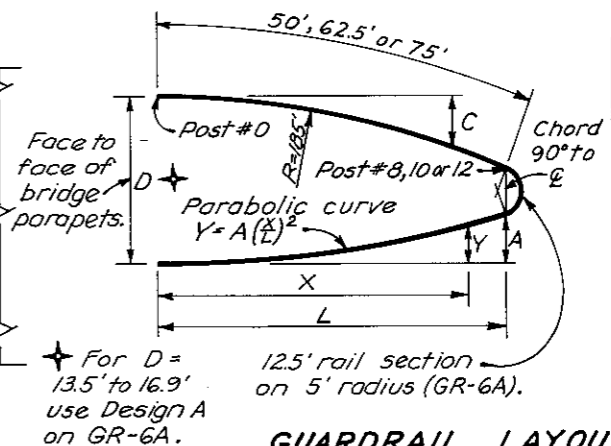
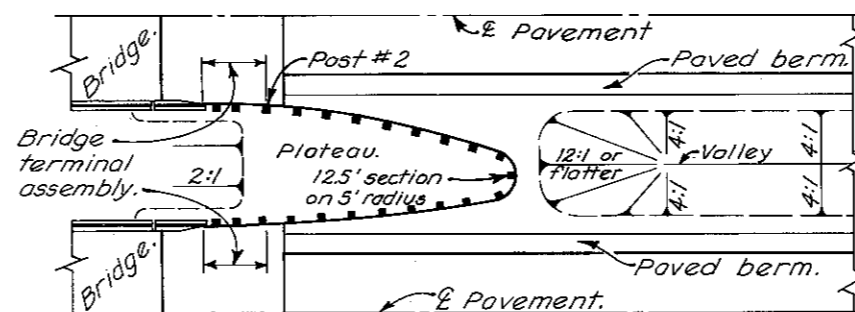
EARTH BARRIER MEDIAN

** Measured along face of rail to post-bolt hole. Barrier rail length indicated includes anchor assembly.

Median Width	* Terminal Post No.	Offset from normal face of rail	** Length	
			Standard rail	Barrier rail
40'	20	14.21'	87.50'	37.50'
50'	26	19.89'	112.50'	50.00'
55'	28	21.79'	112.50'	62.50'
60'	32	25.58'	125.00'	75.00'
84'	44	36.94'	175.00'	100.00'



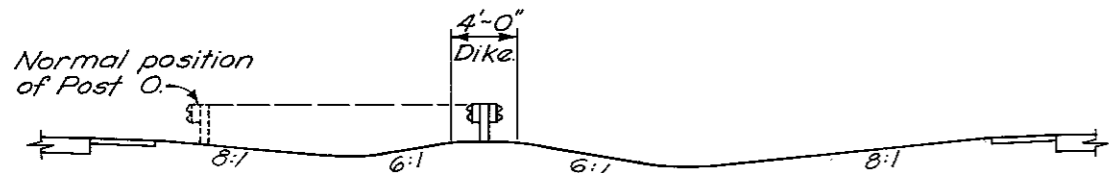
DEPRESSED MEDIAN



* For D = 13.5' to 16.9' use Design A on GR-6A.

GUARDRAIL LAYOUT FOR MEDIANS 39' OR LESS WIDE

Post No. (6'-3" %)	C (ft)	D (ft)
0	0.00	
1	0.11	
2	0.42	
3	0.95	
4	1.69	
5	2.63	
6	3.79	
7	5.15	
8	6.72	17-23
9	8.49	
10	10.46	23-29
11	12.63	
12	15.00	29-35



Elevation of the top of rail at any point "X" shall be the same distance above the edge of pavement opposite point "X" as the top of rail at post "0" is above the edge of pavement at that point. Elevation of the top of dike shall be 27" below the top of rail at any point on the flare.

SECTION A-A

BUREAU OF LOCATION AND DESIGN
OHIO DEPARTMENT OF TRANSPORTATION

GUARDRAIL AT BRIDGES

STANDARD CONSTRUCTION DRAWING **GR-6**
APPROVED: [Signature] ENGR, L. & D.

DATE
2-15-68
7-15-69
1-1-71
2-5-82