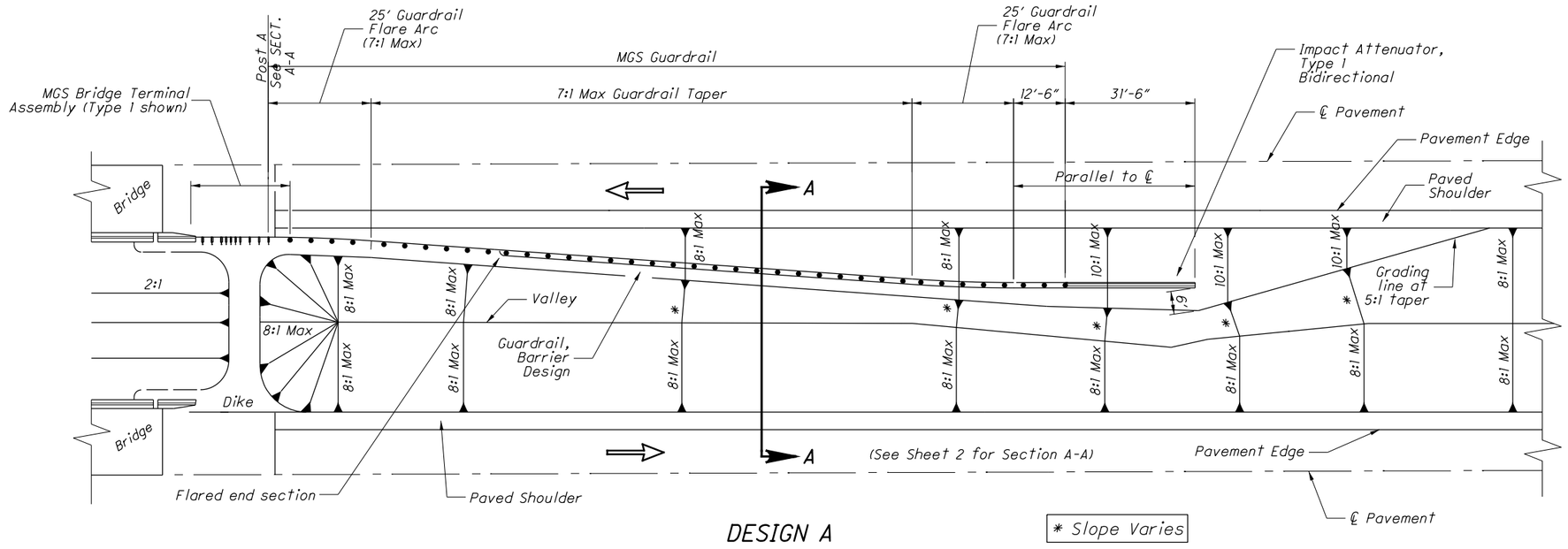
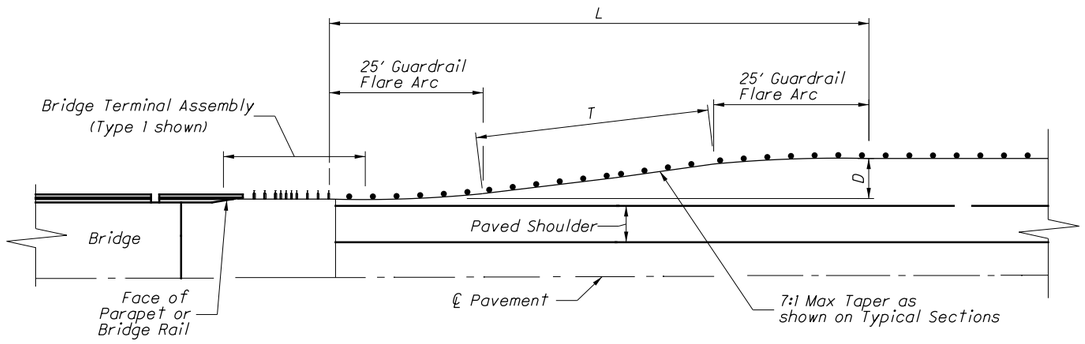


DESIGN A

Narrow Median (See NOTE 2)

INTRODUCED GUARDRAIL APPROACH INSTALLATIONS



RECOMMENDED LENGTHS FOR GUARDRAIL OFFSET TRANSITIONS		
D Difference in Offset (ft)	**L Total Length (ft)**	**T Tangent Length on Flares (ft)**
2	50	0
4	62.5	12.5
6	75	25
8	87.5	37.5
10	100	50

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 360', and a guardrail taper/flare rate of 7:1 Maximum.

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) Provide 8:1 maximum cross-slopes in front of guardrail and in the median.

THIS IS A NEW DRAWING

STATE OF OHIO DEPARTMENT OF TRANSPORTATION
Michael Bline — ADMINISTRATOR
01-18-2013 — DATE

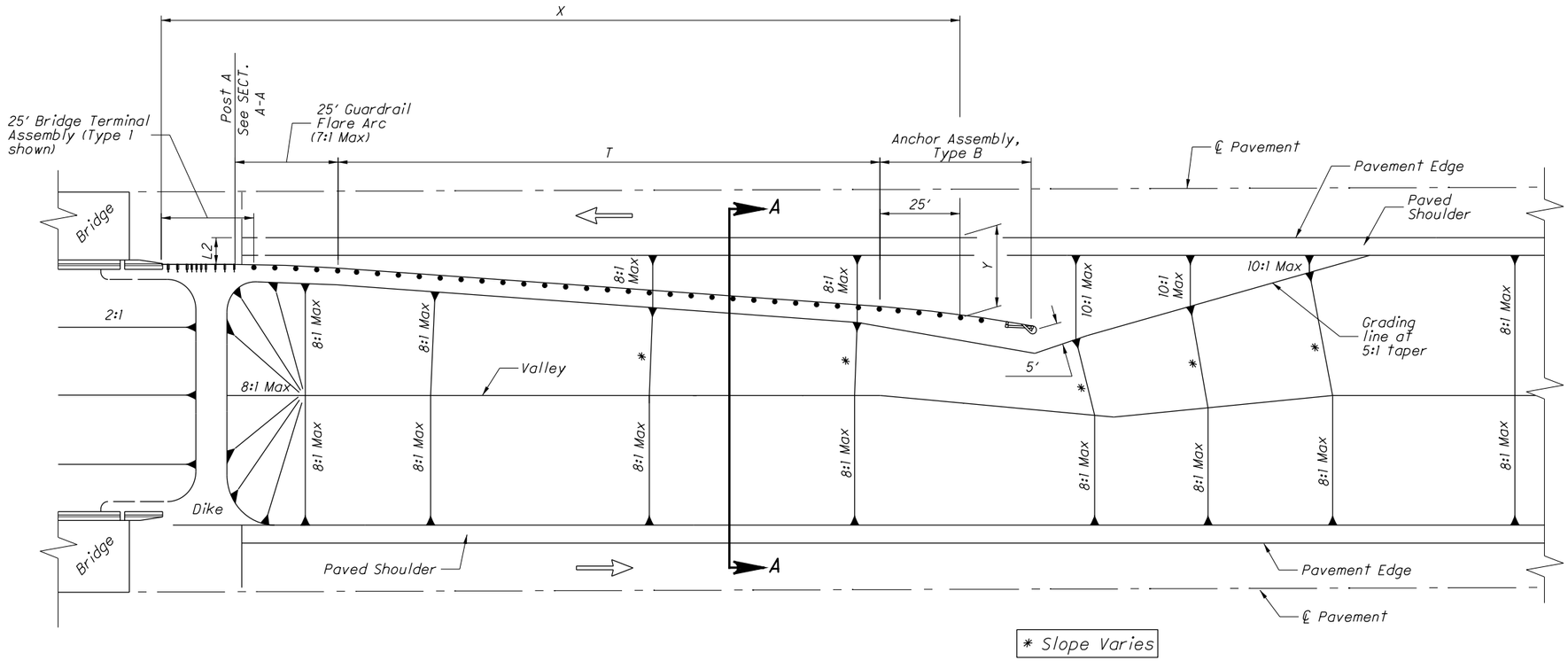
STDS. ENGINEER: M. Ruppe

OFFICE OF ROADWAY ENGINEERING

STANDARD ROADWAY CONSTRUCTION DRAWING

GUARDRAIL AT BRIDGES

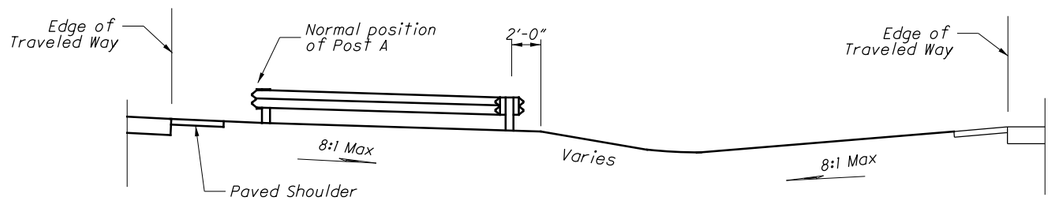
SCD NUMBER: MGS-6.1



DESIGN B

Wide Median (See NOTE 3 on Sheet 1)

INTRODUCED GUARDRAIL APPROACH INSTALLATIONS



SECTION A-A

RECOMMENDED LENGTHS FOR GUARDRAIL FLARES AT BRIDGE APPROACHES			
L2 Guardrail Offset At Bridge (ft)	X Length of Need (3) (ft)	Y Offset At End of Run (ft)	T Taper Length (ft)
4	137.5	19.1	62.5
6	125	19.8	50
8	112.5	20.6	37.5
10	112.5	21.3	37.5
12	100	22.1	25
14	87.5	22.8	12.5
16	87.5	23.5	12.5

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).
4. For the Type B Anchor Assembly, 25' may be deducted from the guardrail Length of Need

THIS IS A NEW DRAWING

STATE OF OHIO DEPARTMENT OF TRANSPORTATION
Michael Bline — ADMINISTRATOR
01-18-2013 DATE

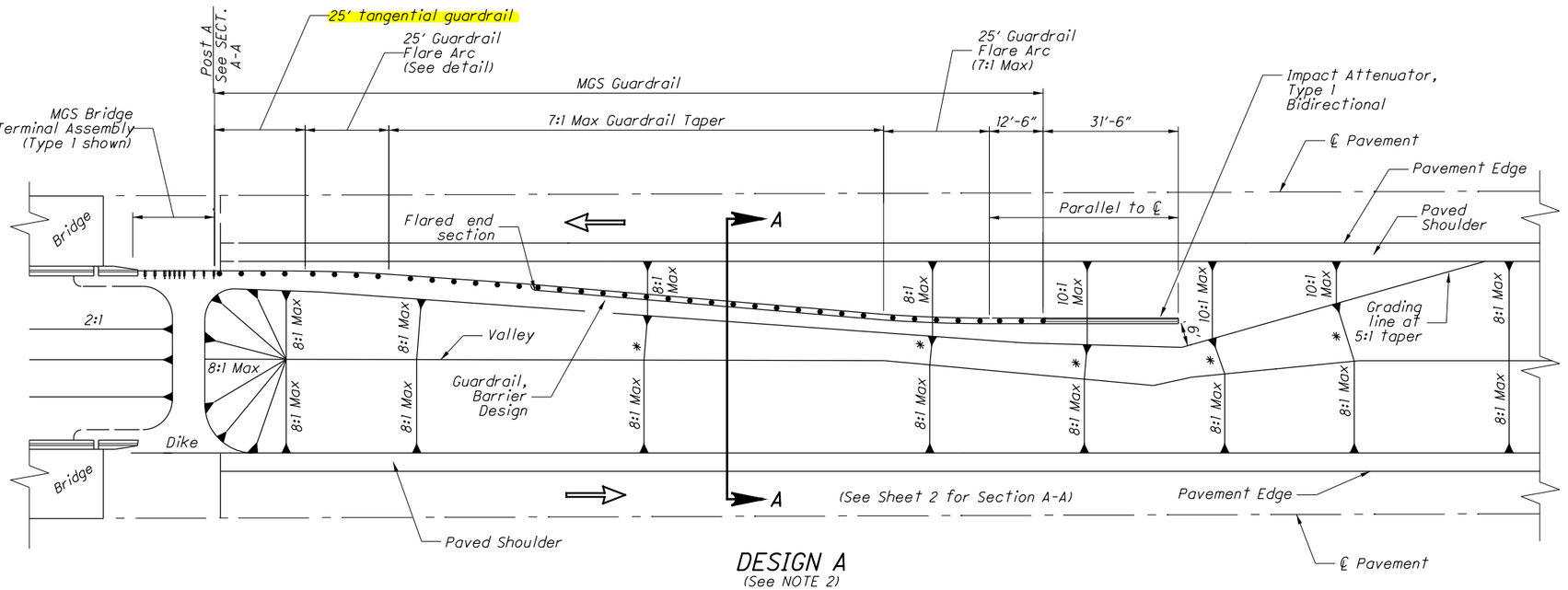
STDS. ENGINEER: M. Ruppe

OFFICE OF ROADWAY ENGINEERING

STANDARD ROADWAY CONSTRUCTION DRAWING

GUARDRAIL AT BRIDGES

SCD NUMBER MGS-6.1



DESIGN A
(See NOTE 2)

INTRODUCED GUARDRAIL APPROACH INSTALLATIONS - NARROW MEDIAN

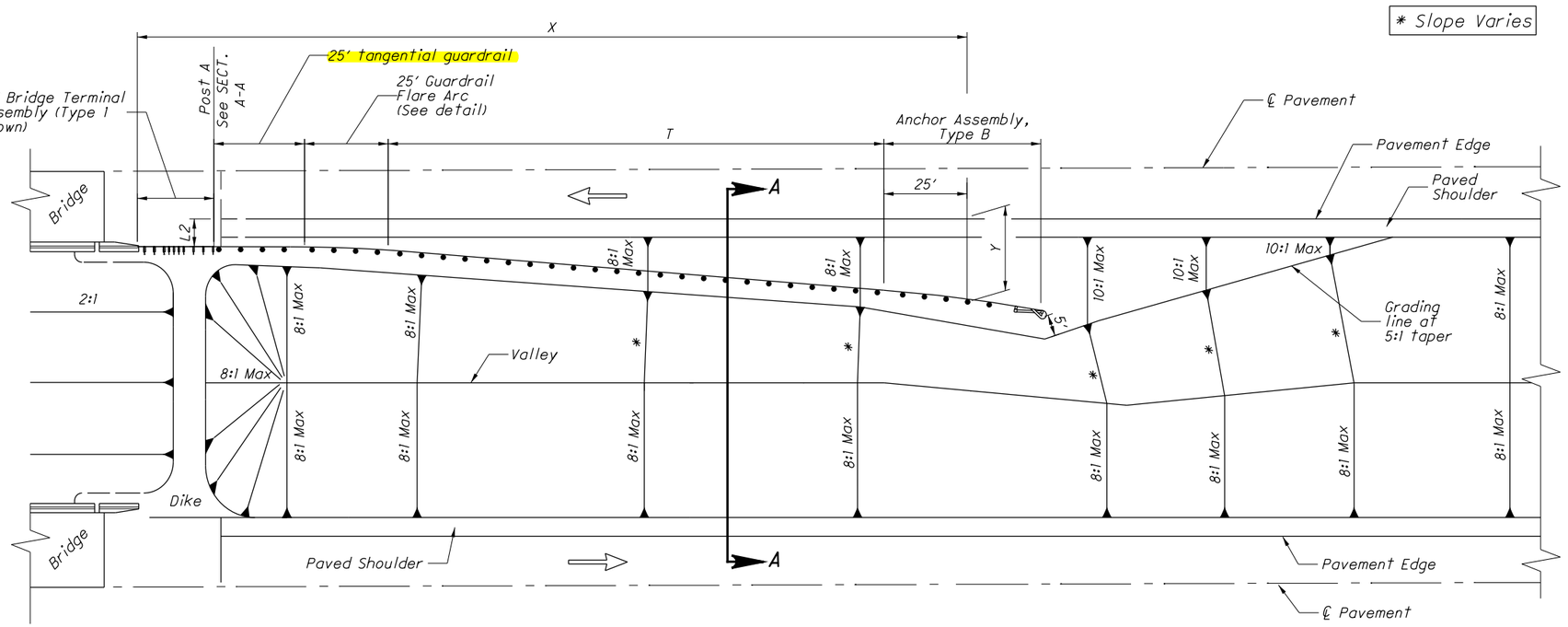
NOTES

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 360', and a guardrail taper/flare rate of 7:1 Maximum.

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 (shown on Sheet 2). The plans shall clearly indicate what portion of the flared guardrail run is to be constructed using barrier guardrail.

3) Use DESIGN "B" 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) Provide 8:1 maximum cross-slopes in front of guardrail and in the median.



DESIGN B
(See NOTE 3)

INTRODUCED GUARDRAIL APPROACH INSTALLATIONS - WIDE MEDIAN

RECOMMENDED LENGTHS FOR GUARDRAIL FLARES AT BRIDGE APPROACHES (FT.)

L2 Guardrail Offset At Bridge	X Length of Need (3)	Y Offset At End of Run	T Taper Length
4	137.5	19.1	62.5
6	125	19.8	50
8	112.5	20.6	37.5
10	112.5	21.3	37.5
12	100	22.1	25
14	87.5	22.8	12.5
16	87.5	23.5	12.5

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 or on the outside shoulder approach to the Bridge.
3. Lengths are based on using whole numbers of Guardrail panels (12'-6" long).
4. For the Type B Anchor Assembly, 25' may be deducted from the guardrail Length of Need.

THIS DRAWING REPLACES MGS-6.1 DATED 1-18-2013.

STATE OF OHIO DEPARTMENT OF TRANSPORTATION
Michael Blume — ADMINISTRATOR
7-19-2013 — DATE

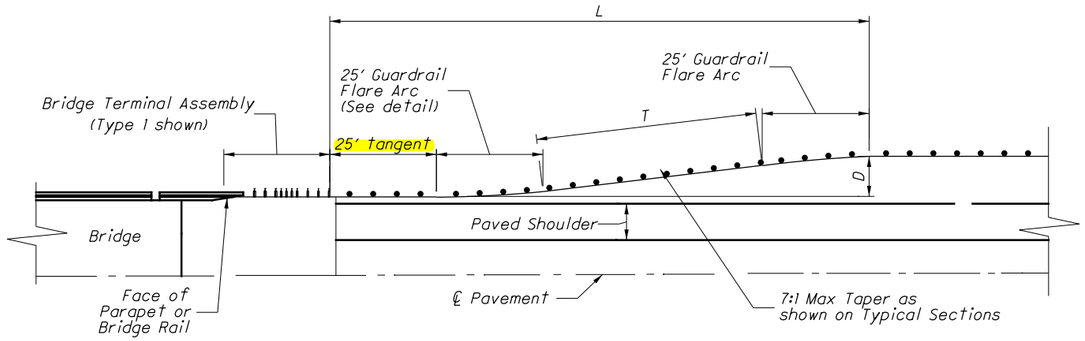
STDS. ENGINEER: M. Ruppe

OFFICE OF ROADWAY ENGINEERING

STANDARD ROADWAY CONSTRUCTION DRAWING

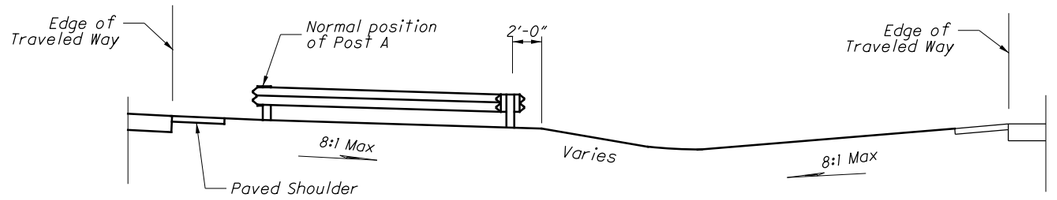
GUARDRAIL AT BRIDGES

SCD NUMBER: MGS-6.1

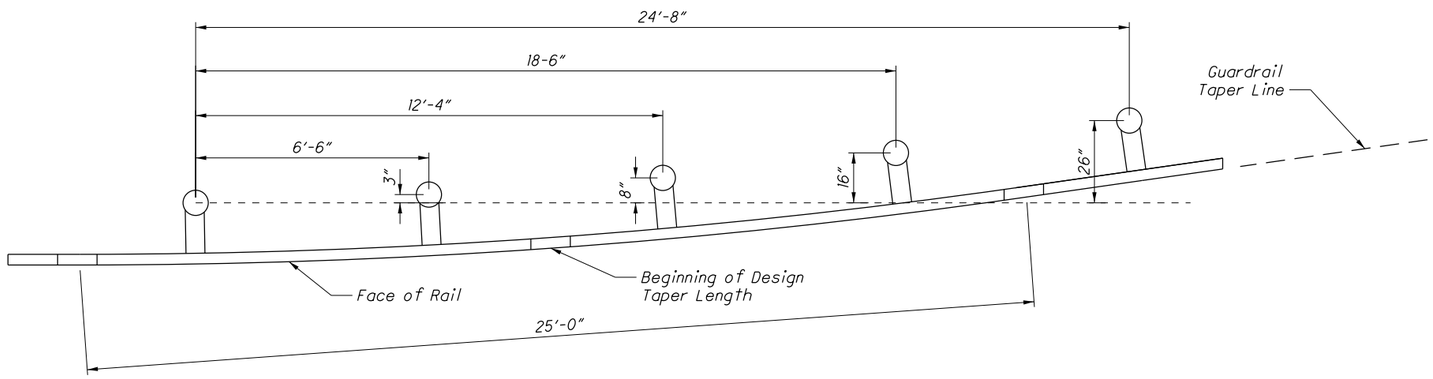


RECOMMENDED LENGTHS FOR GUARDRAIL OFFSET TRANSITIONS		
D Difference in Offset (ft)	L Total Length (ft)	T Taper Length on Flares (ft)
2	75	0
4	87.5	12.5
6	100	25
8	112.5	37.5
10	125	50

GUARDRAIL OFFSET TRANSITION



SECTION A-A



GUARDRAIL FLARE ARC DETAIL

STATE OF OHIO DEPARTMENT OF TRANSPORTATION
Michael Blume — ADMINISTRATOR
7-19-2013 — DATE

STDS. ENGINEER: M. Ruppe

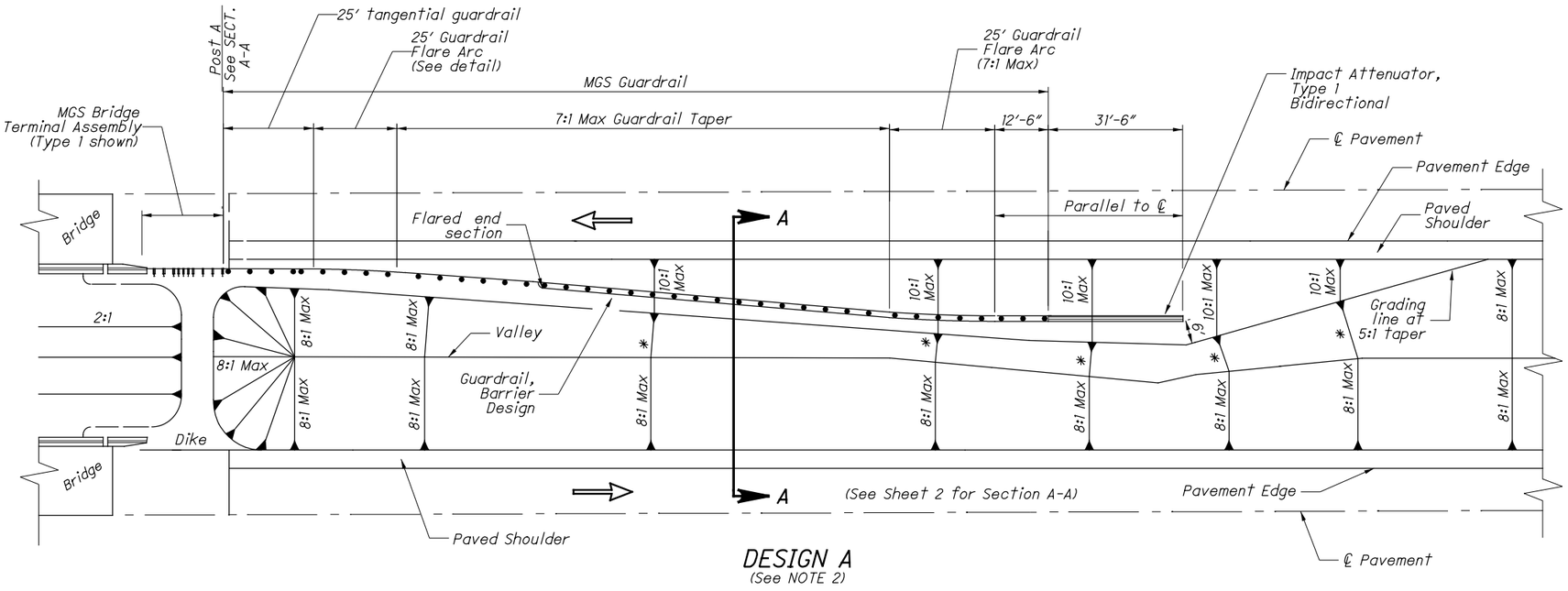
OFFICE OF ROADWAY ENGINEERING

THIS DRAWING REPLACES MGS-6.1 DATED 1-18-2013.

STANDARD ROADWAY CONSTRUCTION DRAWING

GUARDRAIL AT BRIDGES

SCD NUMBER: MGS-6.1



DESIGN A
(See NOTE 2)

INTRODUCED GUARDRAIL APPROACH INSTALLATIONS - NARROW MEDIAN

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 360', and a guardrail taper/flare rate of 7:1 Maximum.

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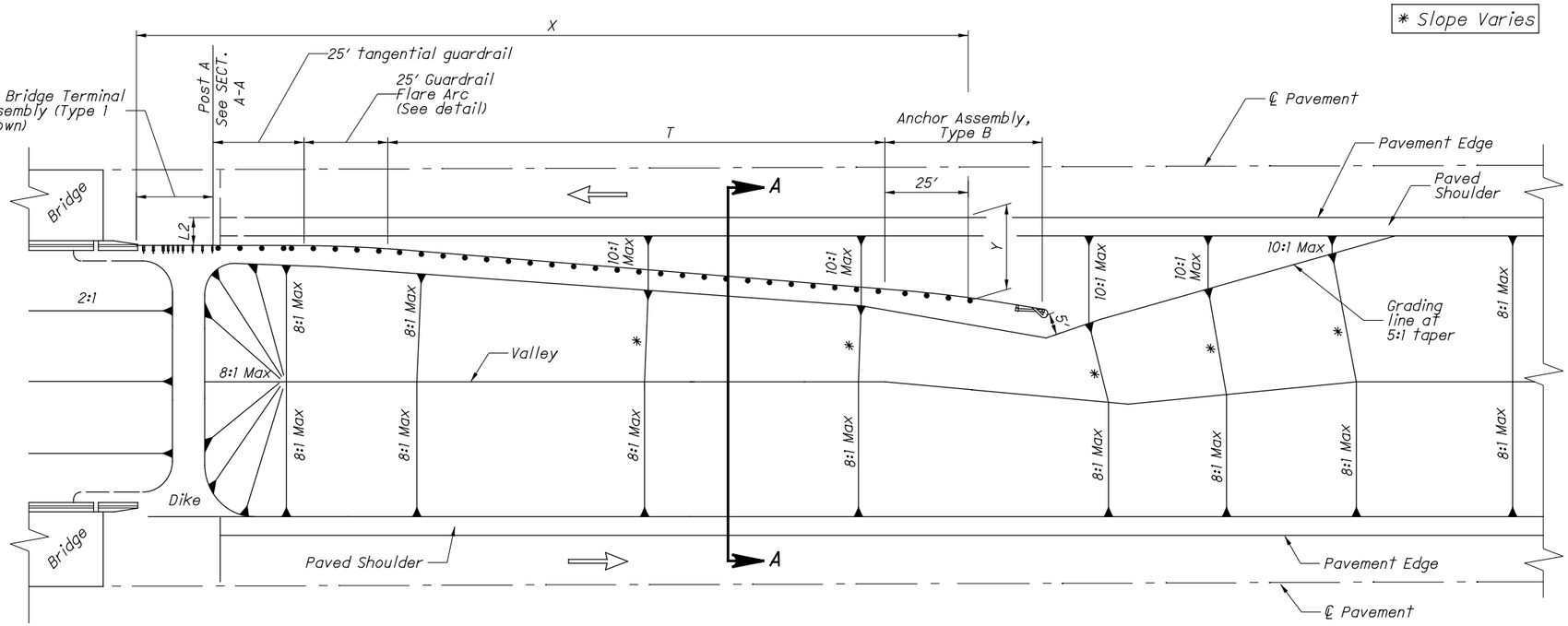
4) Provide 8:1 maximum cross-slopes in front of guardrail and in the median.



DESIGN B
(See NOTE 3)

INTRODUCED GUARDRAIL APPROACH INSTALLATIONS - WIDE MEDIAN

RECOMMENDED LENGTHS FOR GUARDRAIL FLARES AT BRIDGE APPROACHES (FT.)

L2 Guardrail Offset At Bridge	X Length of Need (3)	Y Offset At End of Run	T Taper Length
4	137.5	19.1	62.5
6	125	19.8	50
8	112.5	20.6	37.5
10	112.5	21.3	37.5
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3. Lengths are based on using whole numbers of Guardrail panels (12'-6" long).
4. For the Type B Anchor Assembly, 25' may be deducted from the guardrail Length of Need.

THIS DRAWING REPLACES MGS-6.1 DATED 7-19-2013.

REVISION DATE 1-19-2018

STATE OF OHIO DEPARTMENT OF TRANSPORTATION ADMINISTRATOR David L. Holstein

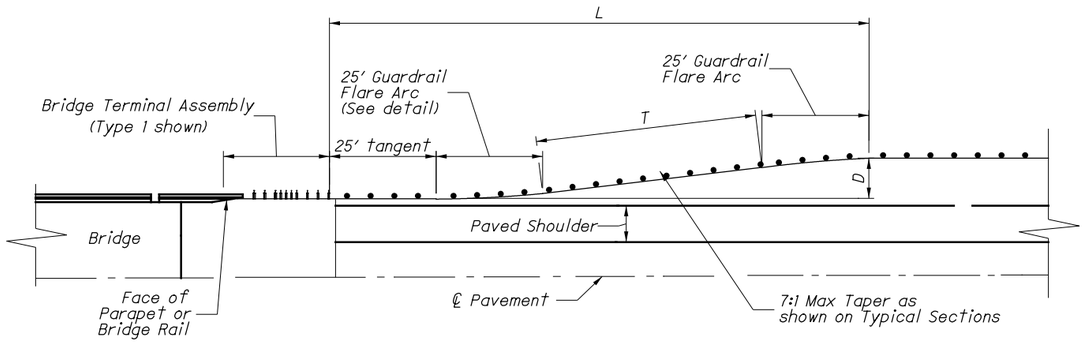
STDS. ENGINEER D. Fisher

OFFICE OF ROADWAY ENGINEERING

STANDARD ROADWAY CONSTRUCTION DRAWING

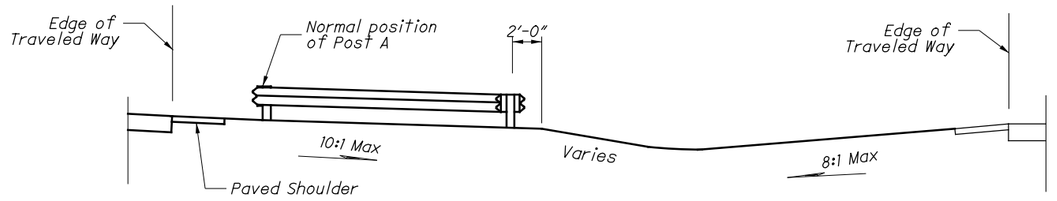
GUARDRAIL AT BRIDGES

SCD NUMBER MGS-6.1

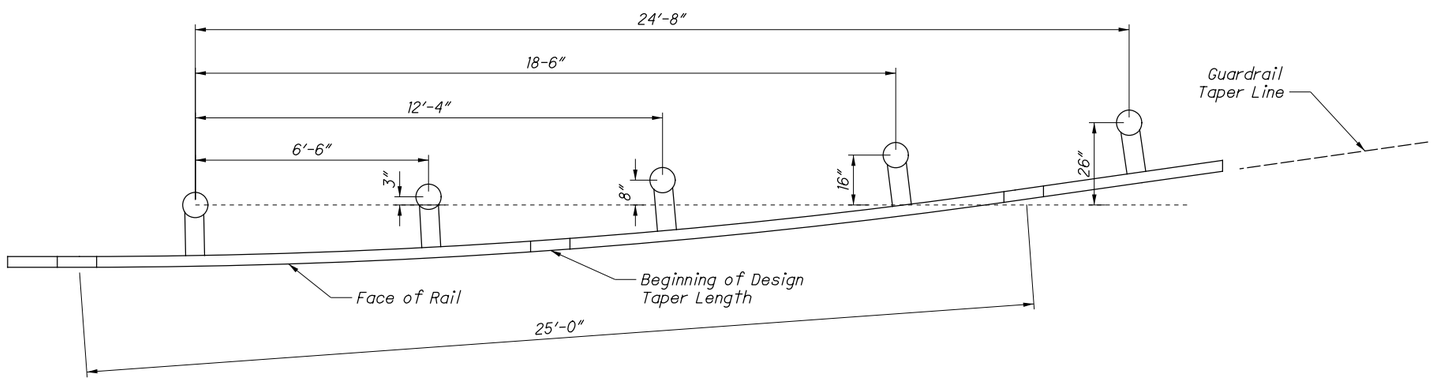


RECOMMENDED LENGTHS FOR GUARDRAIL OFFSET TRANSITIONS		
D Difference in Offset (ft)	**L Total Length (ft)**	**T Taper Length on Flares (ft)**
2	75	0
4	87.5	12.5
6	100	25
8	112.5	37.5
10	125	50

GUARDRAIL OFFSET TRANSITION



SECTION A-A



GUARDRAIL FLARE ARC DETAIL

THIS DRAWING REPLACES MGS-6.1 DATED 7-19-2013.

REVISION DATE 1-19-2018

STATE OF OHIO DEPARTMENT OF TRANSPORTATION ADMINISTRATOR David L. Holstein

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GUARDRAIL AT BRIDGES

SCD NUMBER **MGS-6.1**