

LENGTH OF GUARDRAIL ADVANCEMENT AT FIXED OBJECTS OR AT WARRANTING FILL SLOPES (TYPICAL)

FLARED

STANDARD

| DESIGN SPEED (MPH) | SHY-LINE OFFSET (FT) | BARRIER INSIDE SHY-LINE (b/d) | BARRIER AT OR BEYOND SHY-LINE |
|--------------------|----------------------|-------------------------------|-------------------------------|
| 70 | 9 | 30 | 15 |
| 60 | 8 | 26 | 14 |
| 55 | 7 | 24 | 12 |
| 50 | 6.5 | 21 | 11 |
| 45 | 6 | 18 | 10 |
| 40 | 5 | 16 | 8 |
| 30 | 4 | 13 | 7 |

| DESIGN SPEED (MPH) | OVER 10000 (A.D.T.) | 5000-10000 (A.D.T.) | 1000-5000 (A.D.T.) | UNDER 1000 (A.D.T.) |
|--------------------|---------------------|---------------------|--------------------|---------------------|
| BC | 470 | 430 | 380 | 330 |
| 70 | 360 | 330 | 290 | 250 |
| 60 | 300 | 250 | 210 | 200 |
| 50 | 230 | 190 | 150 | 150 |
| 40 | 160 | 130 | 90 | 80 |
| 30 | 80 | 90 | 80 | 70 |

S = NORMAL WIDTH OF USABLE SHOULDER PLUS 2 FT (TYP.)
 ⊕ = BEGINNING OF TERMINAL (TYP.)
 * X_A, X_T, AND X MEASURED TO THE END OF W-BEARS WHERE TERMINAL BEGINS

CLEAR ZONE DISTANCES

CLEAR ZONE DISTANCES (FT) CHART

| DESIGN SPEED | DESIGN ADT | FORESLOPES | | | BACKSLOPES | | |
|-------------------|------------|------------------|----------------|-------|----------------|-------|------------------|
| | | IV:4H OR FLATTER | IV:4H TO IV:3H | IV:3H | IV:5H TO IV:4H | IV:4H | IV:6H OR FLATTER |
| 40 M.P.H. OR LESS | UNDER 750 | 7-10 | 7-10 | ** | 7-10 | 7-10 | 7-10 |
| | 750-1500 | 10-14 | 12-14 | ** | 12-14 | 12-14 | 12-14 |
| | OVER 6000 | 12-14 | 14-16 | ** | 14-16 | 14-16 | 14-16 |
| 45-50 M.P.H. | UNDER 750 | 10-12 | 12-14 | ** | 8-10 | 8-10 | 10-12 |
| | 750-1500 | 14-16 | 16-20 | ** | 10-12 | 12-14 | 14-16 |
| | OVER 6000 | 16-18 | 20-24 | ** | 12-14 | 14-16 | 16-18 |
| 55 M.P.H. | UNDER 750 | 12-14 | 14-18 | ** | 8-10 | 10-12 | 10-12 |
| | 750-1500 | 16-18 | 20-24 | ** | 10-12 | 14-16 | 16-18 |
| | OVER 6000 | 20-22 | 24-28 | ** | 14-16 | 18-20 | 20-22 |
| 60 M.P.H. | UNDER 750 | 14-16 | 20-24 | ** | 10-12 | 12-14 | 14-16 |
| | 750-1500 | 18-24 | 26-32* | ** | 12-14 | 16-18 | 20-22 |
| | OVER 6000 | 22-24 | 26-32* | ** | 14-18 | 18-22 | 24-28 |
| 65-70 M.P.H. | UNDER 750 | 18-20 | 20-26 | ** | 10-12 | 14-16 | 16-18 |
| | 750-1500 | 24-26 | 28-36* | ** | 12-16 | 16-20 | 20-22 |
| | OVER 6000 | 28-32* | 34-42* | ** | 14-20 | 18-24 | 26-28 |

HORIZONTAL CURVE ADJUSTMENTS

| RADIUS (FEET) | CORRECTION FACTOR | | | | | |
|---------------|-------------------|-----|-----|-----|-----|-----|
| | 40 | 50 | 55 | 65 | 70 | |
| 2950 | 1.1 | 1.1 | 1.1 | 1.2 | 1.2 | 1.2 |
| 2300 | 1.1 | 1.1 | 1.2 | 1.2 | 1.2 | 1.3 |
| 1970 | 1.1 | 1.2 | 1.2 | 1.2 | 1.3 | 1.4 |
| 1640 | 1.1 | 1.2 | 1.2 | 1.3 | 1.3 | 1.4 |
| 1310 | 1.2 | 1.2 | 1.3 | 1.3 | 1.4 | 1.5 |
| 1000 | 1.2 | 1.2 | 1.3 | 1.4 | 1.4 | 1.5 |
| 885 | 1.2 | 1.3 | 1.4 | 1.5 | 1.5 | |
| 820 | 1.3 | 1.3 | 1.4 | 1.5 | 1.5 | |
| 670 | 1.3 | 1.4 | 1.5 | | | |
| 495 | 1.4 | 1.5 | | | | |
| 330 | 1.5 | | | | | |

C_Z = (K_c) (K_{c2})
 Where:
 C_Z = CLEAR ZONE ON OUTSIDE OF CURVATURE, FEET
 L_C = CLEAR ZONE DISTANCE, FEET (SEE CHART AT LEFT)
 K_{c2} = CURVE CORRECTION FACTOR

NOTE:
 THE CURVE CORRECTION FACTOR IS APPLIED TO THE OUTSIDE OF CURVES ONLY. CORRECTIONS ARE TYPICALLY MADE ONLY TO CURVES LESS THAN 2,950-FT RADIUS.

COMPARATIVE BARRIER CONSIDERATION FOR EMBANKMENTS

| | | | | | |
|--------|---------------|------|----|---------|------|
| F.B.C. | REVISED CHART | DATE | BY | CHECKED | DATE |
| | | | | | |

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
GUARDRAIL WARRANT GUIDES
LENGTHS OF ADVANCEMENT
CLEAR ZONE DISTANCES
FILL HEIGHT EMBANKMENTS

NOT TO SCALE

DEC., 1999

| | | |
|-------------------------------------|------------------------------------|---------------|
| DESIGNED BY: <i>Manoel B. Pardo</i> | CHECKED BY: <i>Manoel B. Pardo</i> | NUMBER: 4000W |
|-------------------------------------|------------------------------------|---------------|

NOT TO SCALE

| REVISION DATES | |
|----------------|--|
| | |
| | |
| | |

GEORGIA STANDARDS
SR 18 BRIDGE REPLACEMENT @ LONG CAME CREEK
TROUP COUNTY

| | | |
|---------------------------------|------------------------|---------------------|
| CHECKED: <i>Manoel B. Pardo</i> | DATE: <i>12/9/2020</i> | DRAWING NO. 41-0015 |
| BACKCHECKED: | DATE: | |
| CORRECTED: | DATE: | |
| VERIFIED: | DATE: | |