

REV. 9-15-82: CHANGED S-GR-6 TO S-GR-16.

REV. 7-1-84: CORRECTED NOTES AND ADDED NOTES. CHANGED DIMENSION ON TYPE I RAIL SUPPORT BLOCK WHICH ALLOWS FOR EASIER INSTALLATION PROCEDURES.

REV. 9-5-87: CHANGED ITEM NO. 705-01.02 TO 705-01.05. CHANGED FIRST DOUBLE STAR NOTE FOR TYPE "B" TREATMENT.

REV. 11-7-87: CHANGED W6 X 16 TO W6 X 15.

REV. 1-19-92: REDREW AND REORGANIZED SHEET. UPDATED TO 1991 STANDARDS.

REV. 7-29-93: LABELED BLOCK-OUT FOR TYPE II RAIL SUPPORT DETAIL.

REV. 5-27-94: MODIFIED TANGENT DISTANCE IN L₄ FOR 48 AND 60 FOOT WIDE MEDIANS.

REV. 9-5-94: REMOVED REFERENCE TO FOOTNOTES ⑤ THRU ⑦ IN TYPE "A" BARRIER TREATMENT DETAIL.

REV. 5-27-96: MODIFIED USE OF BACK RAIL IN BOTH PLAN VIEWS. CHANGED LOCATION OF GUARDRAIL FOR SECTION TYPE "A", SECTION "B-B" VIEW. CHANGED FOOTNOTE ②.

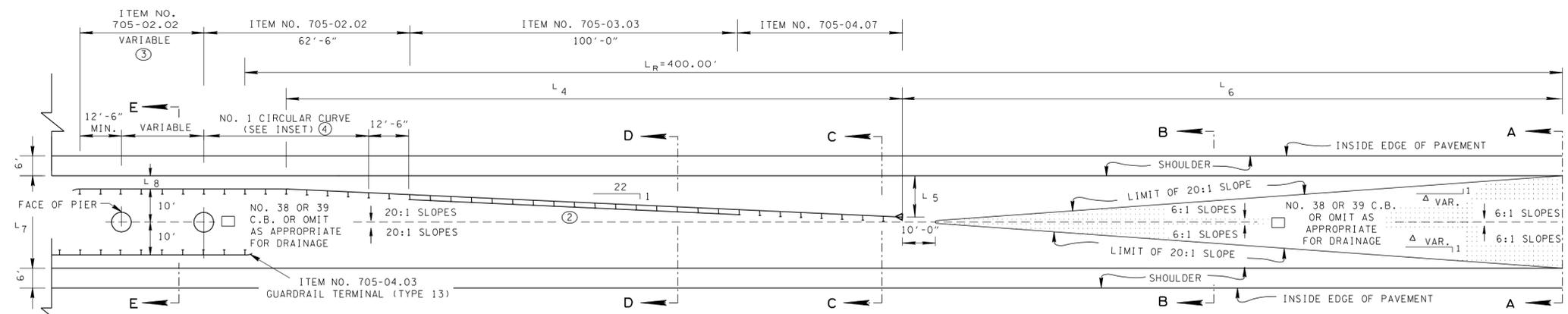
REV. 6-10-96: CHANGED QUANTITIES FOR ITEM NOS. 705-02.02 & 705-03.03 IN GUARDRAIL TABULATED QUANTITIES.

REV. 7-29-98: MODIFIED TYPE II RAIL SUPPORT DETAILS, MADE OTHER GENERAL REVISIONS.

REV. 4-30-99: MODIFIED DRAWING IN GENERAL. ELIMINATED TYPE I RAIL SUPPORT DETAILS.

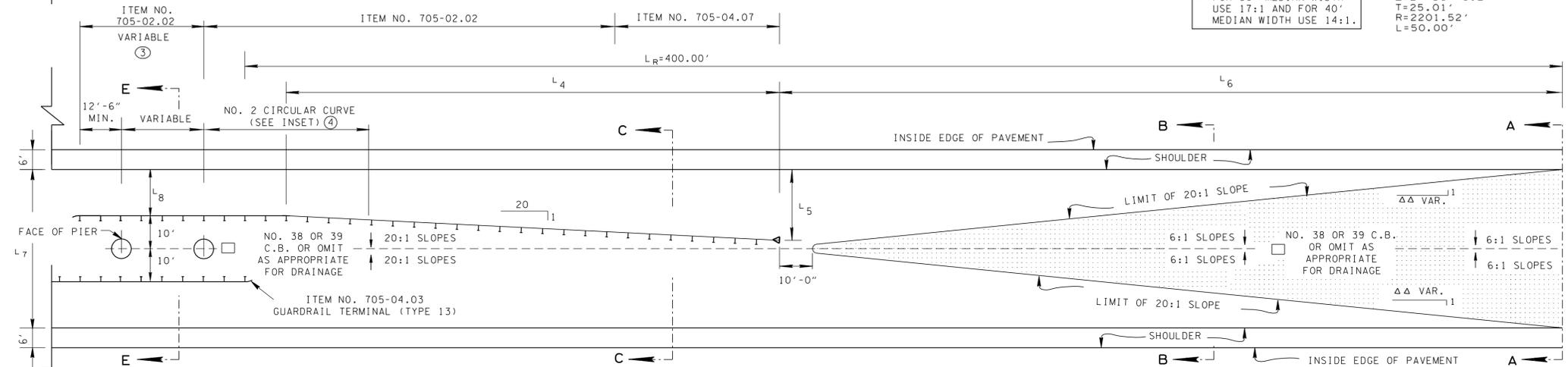
REV. 5-27-99: MODIFIED VARIOUS NOTES ON DRAWING.

REV. 5-27-01: CHANGED ITEM NO. 705-04.38 TO 705-04.07.



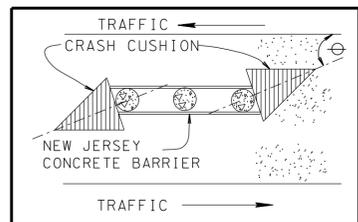
① GUARDRAIL BARRIER TREATMENT DETAILS - 36' AND 40' MEDIANS

NO. 1 CURVE
 Δ FOR 36' MEDIAN WIDTH USE 17:1 AND FOR 40' MEDIAN WIDTH USE 14:1.
 $\Delta = 2^\circ 36' 9.2''$
 $T = 25.01'$
 $R = 2201.52'$
 $L = 50.00'$



① GUARDRAIL BARRIER TREATMENT DETAILS - 48', 60' AND 64' MEDIANS

NO. 2 CURVE
 Δ FOR 48' MEDIAN WIDTH USE 12:1 AND FOR 60' AND 64' MEDIAN WIDTH USE 9:1.
 $\Delta = 2^\circ 51' 44.7''$
 $T = 25.01'$
 $R = 1000.83'$
 $L = 50.00'$



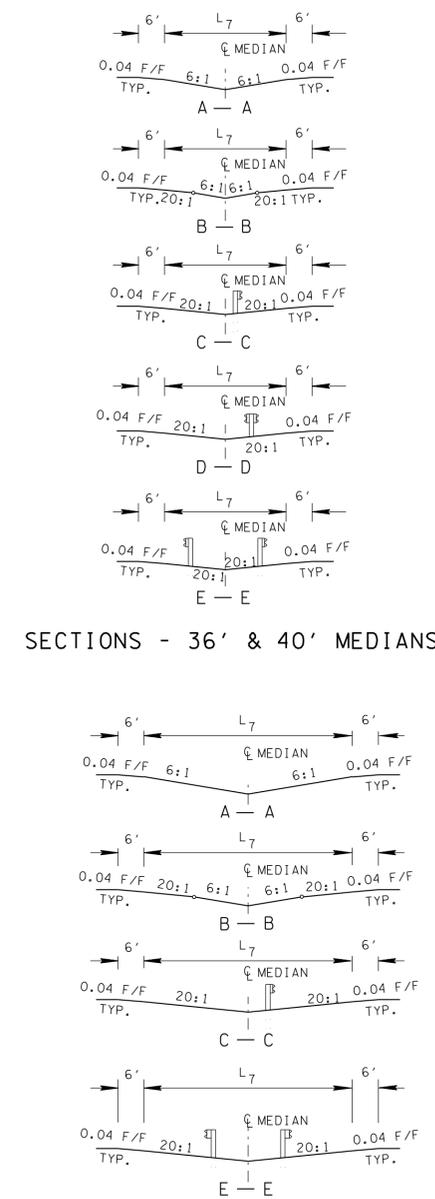
⊙ IS THE PROBABLE ANGLE OF IMPACT OF ENCROACHING VEHICLES. FOR MOST ROADSIDE CONDITIONS, AN ANGLE OF 10 DEGREES OR LESS IS SUGGESTED. THE CRASH CUSHION SHALL BE INSTALLED PER APPROPRIATE STANDARD DRAWINGS OR MANUFACTURER'S SPECIFICATIONS.

- FOOTNOTES**
- ① HALF TYPICAL - TREATMENT IS SAME FOR APPROACHING TRAFFIC IN OTHER DIRECTION BUT ON OPPOSITE SIDE FROM THAT AS SHOWN.
 - ② USE 27" GUARDRAIL MOUNTING HEIGHT, OMIT THE RUB-RAIL OPTION.
 - ③ VARIABLE TO NEAREST MULTIPLE OF 12'-6" REQUIRED TO CLEAR OUT-TO-OUT OF PIER, INCLUDING 6'-3" (MIN.) RAIL THAT SHALL EXTEND PAST THE TRAILING SIDE OF THE PIER.
 - ④ P.I. OF CURVE IS LOCATED 25.01' FROM CENTER OF FIRST PIER.

| MEDIAN | ① MEDIAN DIMENSIONS | | | | | ② GUARDRAIL QUANTITIES | | | |
|--------|---------------------|----------------|----------------|----------------|----------------|------------------------|-----------|-----------|-----------|
| | L ₄ | L ₅ | L ₆ | L ₇ | L ₈ | 705-02.02 | 705-03.03 | 705-04.03 | 705-04.07 |
| 36' | 187.31' | 10.52' | 200.19' | 24.0' | 2.0' | ③ 150'-0" | 200'-0" | 2 | 2 |
| 40' | 187.31' | 12.52' | 200.19' | 28.0' | 4.0' | ③ 150'-0" | 200'-0" | 2 | 2 |
| 48' | 162.30' | 16.13' | 225.20' | 36.0' | 8.0' | ③ 300'-0" | — | 2 | 2 |
| 60' | 149.81' | 21.50' | 237.69' | 48.0' | 14.0' | ③ 275'-0" | — | 2 | 2 |
| 64' | 149.81' | 23.50' | 237.69' | 52.0' | 16.0' | ③ 275'-0" | — | 2 | 2 |

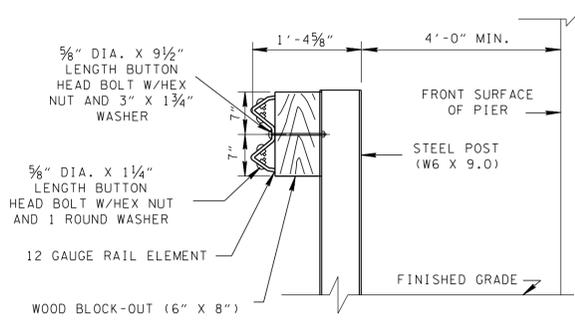
- ① THE DIMENSIONS SHOWN IN THIS TABLE ARE TO BE USED IN ALL TANGENT OR NEARLY TANGENT SITUATIONS WITH DESIGN SPEEDS 60 MPH OR BELOW. WHEN THE DESIGN SPEED EXCEEDS 60 MPH OR OTHER GEOMETRIC FEATURES SUCH AS CURVATURE, SKEWED BRIDGES, WHEN PIERS ARE NOT LOCATED AT THE CENTERLINE OF THE MEDIAN, OR ADDITIONAL HAZARDS ARE PRESENT, THE DESIGNER SHALL USE STANDARD DRAWING S-GR-21.
- ② INCLUDES QUANTITIES FOR BOTH APPROACHES.
- ③ DOES NOT INCLUDE GUARDRAIL QUANTITY BETWEEN PIERS ON EACH SIDE WHICH MUST BE ADDED BY THE DESIGNER.

- GENERAL NOTES**
- (A) THE CONTRACTOR IS TO ELIMINATE THE 1 FOOT FLARE SHOWN ON GUARDRAIL STANDARD DRAWINGS FOR TYPE 38 GUARDRAIL TERMINAL ANCHORS (FLARED INSTALLATIONS ONLY).
 - (B) THIS STANDARD, SHOWING BRIDGE PIERS IN THE MEDIAN, IS ALSO INTENDED TO SERVE AS BARRIER TREATMENT FOR OTHER UNAVOIDABLE MEDIAN HAZARDS.
 PRIOR TO THE DESIGNATION OF ANY BARRIER TREATMENT, THE DESIGNER SHOULD CONSIDER THE FOLLOWING ASPECTS OF THE PROBLEM:
 - (B1) COST EFFECTIVENESS STUDY MAY REVEAL THE CHOICE OF CRASH-CUSHION TYPE OF HAZARD PROTECTION, SEE SCHEMATIC LOCATED ABOVE FOOTNOTES.
 - (B2) COST EFFECTIVENESS COMPARISON MAY WEIGH THE DECISION IN FAVOR OF METAL BARRIERS IN WHICH CASE THIS STANDARD DRAWING WILL BE USED.
 - (B3) (a) A WIDE MEDIAN IN WHICH THE MEDIAN BARRIER IS NOT WARRANTED (SEE DWG. RD-S-17); OR
 (b) LOW TRAFFIC VOLUME, LOW DESIGN SPEED, LOW CRASH RECORD, LIMITED FUNDS, OR ANY COMBINATION OF THESE, WHEN APPLIED IN ACCORDANCE WITH A FEASIBLE COST EFFECTIVENESS EVALUATION TECHNIQUE (SEE THE "ROADSIDE DESIGN GUIDE (1989), SECTION 3.2") MAY DICTATE THE OMISSION OF A BARRIER ENTIRELY.



SECTIONS - 36' & 40' MEDIANS

SECTIONS - 48', 60', & 64' MEDIANS



TYPE II METAL BEAM RAIL SUPPORT DETAILS AT PIER

SEE STD. DWG. S-GR-12 FOR POST REQUIREMENT BELOW FINISHED GRADE

MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.