

| DEGREE  | RADIUS  | 30 MPH |        | 40 MPH         |        | 50 MPH        |        | 60 MPH        |        | 70 MPH        |        |  |  |  |  |  |  |
|---------|---------|--------|--------|----------------|--------|---------------|--------|---------------|--------|---------------|--------|--|--|--|--|--|--|
|         |         | RATE   | LENGTH | RATE           | LENGTH | RATE          | LENGTH | RATE          | LENGTH | RATE          | LENGTH |  |  |  |  |  |  |
| 0-15'   | 22,918' | NC     | 0      | NC             | 0      | NC            | 0      | NC            | 0      | RC            | 200    |  |  |  |  |  |  |
| 0-30'   | 11,459' | NC     | 0      | NC             | 0      | RC            | 150    | RC            | 175    | RC            | 200    |  |  |  |  |  |  |
| 0-45'   | 7,639'  | NC     | 0      | RC             | 125    | RC            | 150    | 1/4"          | 175    | 1/4"          | 200    |  |  |  |  |  |  |
| 1°-00'  | 5,730'  | NC     | 0      | RC             | 125    | 1/4"          | 150    | 1/4"          | 175    | 5/16"         | 200    |  |  |  |  |  |  |
| 1°-30'  | 3,820'  | RC     | 100    | 1/4"           | 125    | 5/16"         | 150    | 7/16"         | 175    | 1/2"          | 200    |  |  |  |  |  |  |
| 2°-00'  | 2,865'  | 1/4"   | 100    | 5/16"          | 125    | 7/16"         | 150    | 9/16"         | 175    | 11/16"        | 200    |  |  |  |  |  |  |
| 2°-30'  | 2,292'  | 1/4"   | 100    | 3/8"           | 125    | 1/2"          | 150    | 11/16"        | 175    | 13/16"        | 210    |  |  |  |  |  |  |
| 3°-00'  | 1,910'  | 5/16"  | 100    | 7/16"          | 125    | 5/8"          | 150    | 13/16"        | 180    | 15/16"        | 230    |  |  |  |  |  |  |
| 3°-30'  | 1,637'  | 5/16"  | 100    | 1/2"           | 125    | 11/16"        | 150    | 7/8"          | 190    | 1"            | 240    |  |  |  |  |  |  |
| 4°-00'  | 1,432'  | 3/8"   | 100    | 9/16"          | 125    | 3/4"          | 150    | 15/16"        | 210    | 1"            | 240    |  |  |  |  |  |  |
| 5°-00'  | 1,146'  | 7/16"  | 100    | 5/8"           | 125    | 13/16"        | 170    | 1"            | 220    | D MAX. = 3.5° |        |  |  |  |  |  |  |
| 6°-00'  | 955'    | 1/2"   | 100    | 3/4"           | 125    | 15/16"        | 180    | 1"            | 220    |               |        |  |  |  |  |  |  |
| 7°-00'  | 819'    | 9/16"  | 100    | 13/16"         | 140    | 15/16"        | 190    | D MAX. = 5.0° |        |               |        |  |  |  |  |  |  |
| 8°-00'  | 716'    | 5/8"   | 100    | 7/8"           | 150    | 1"            | 190    |               |        |               |        |  |  |  |  |  |  |
| 9°-00'  | 637'    | 5/8"   | 100    | 7/8"           | 160    | D MAX. = 7.6° |        |               |        |               |        |  |  |  |  |  |  |
| 10°-00' | 573'    | 11/16" | 100    | 15/16"         | 160    |               |        |               |        |               |        |  |  |  |  |  |  |
| 11°-00' | 521'    | 3/4"   | 110    | 15/16"         | 170    |               |        |               |        |               |        |  |  |  |  |  |  |
| 12°-00' | 477'    | 3/4"   | 120    | 1"             | 170    |               |        |               |        |               |        |  |  |  |  |  |  |
| 13°-00' | 441'    | 13/16" | 120    | 1"             | 170    |               |        |               |        |               |        |  |  |  |  |  |  |
| 14°-00' | 409'    | 13/16" | 130    | D MAX. = 12.4° |        |               |        |               |        |               |        |  |  |  |  |  |  |
| 16°-00' | 358'    | 7/8"   | 130    |                |        |               |        |               |        |               |        |  |  |  |  |  |  |
| 18°-00' | 318'    | 15/16" | 140    |                |        |               |        |               |        |               |        |  |  |  |  |  |  |
| 20°-00' | 286'    | 15/16" | 140    |                |        |               |        |               |        |               |        |  |  |  |  |  |  |
| 22°-00' | 260'    | 1"     | 140    |                |        |               |        |               |        |               |        |  |  |  |  |  |  |
| 22.9°   | 250'    | 1"     | 140    |                |        |               |        |               |        |               |        |  |  |  |  |  |  |

RATE = RATE OF SUPERELEVATION (PERCENT)

LENGTH = MINIMUM LENGTH OF RUNOFF

NC = NORMAL CROWN SECTION

RC = REMOVE ADVERSE CROWN, SUPERELEVATION

RATES ARE FIGURED TO THE NEAREST SIXTEENTH OF AN INCH

BANKING FOR CURVES NOT LISTED IN TABLE

DESIGN VALUES FOR RATE OF SUPERELEVATION AND MINIMUM LENGTH OF RUNOFF

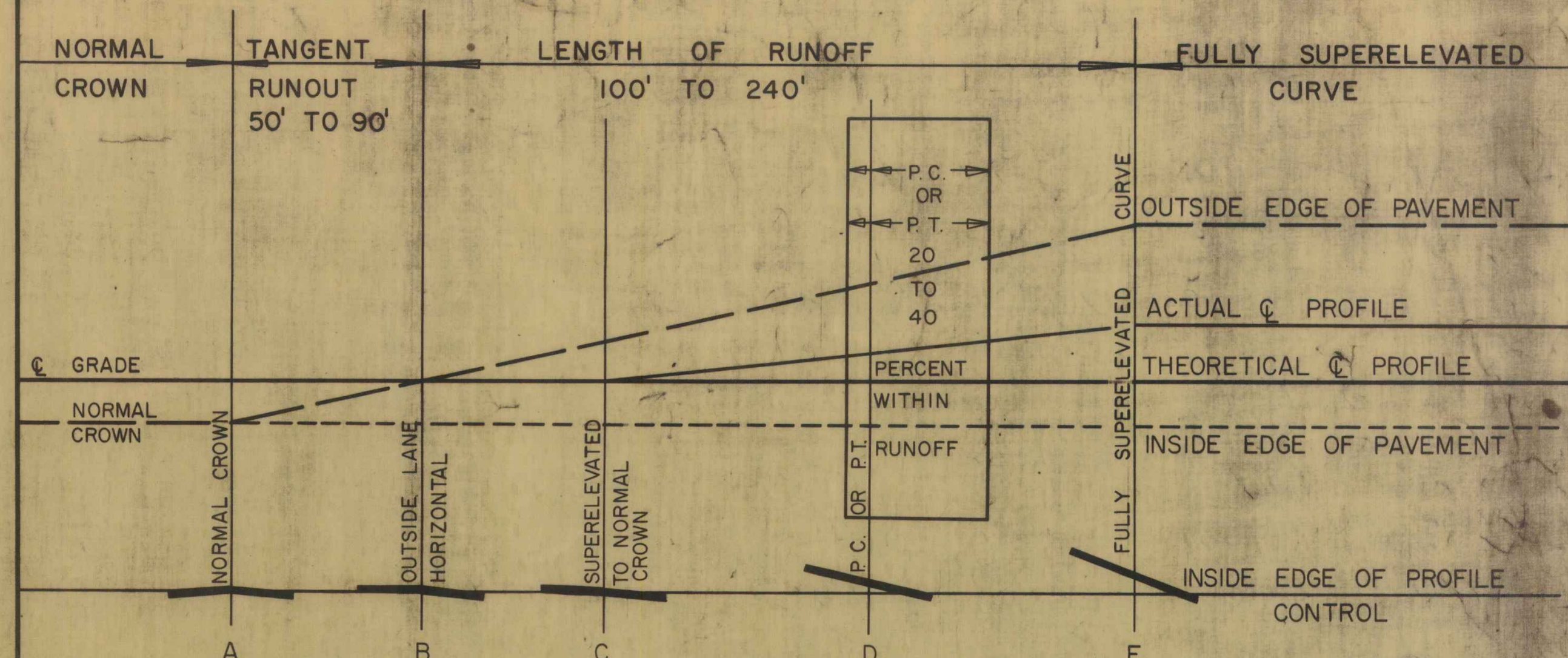
D MAX = 22.9°

RATE = RATE OF SUPERELEVATION (PER FOOT)  
 LENGTH = MINIMUM LENGTH OF RUNOFF  
 NC = NORMAL CROWN SECTION  
 RC = REMOVE ADVERSE CROWN, SUPERELEVATE AT NORMAL CROWN SLOPE

RATES ARE FIGURED TO THE NEAREST SIXTEENTH INCH  
 BANKING FOR CURVES NOT LISTED IN TABLE MAY BE DETERMINED FROM GRAPH

# DESIGN VALUES FOR RATE OF SUPERELEVATION AND MINIMUM LENGTH OF RUNOFF

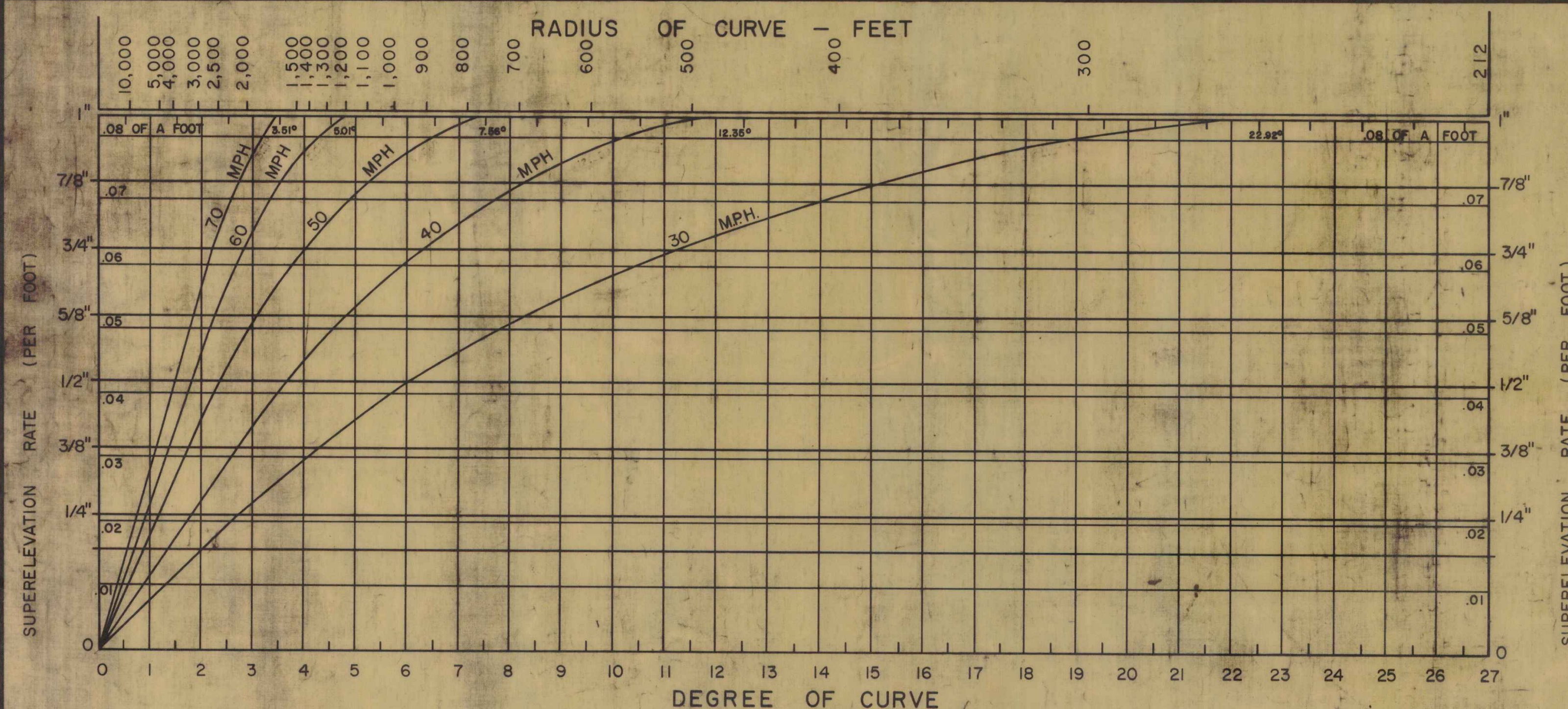
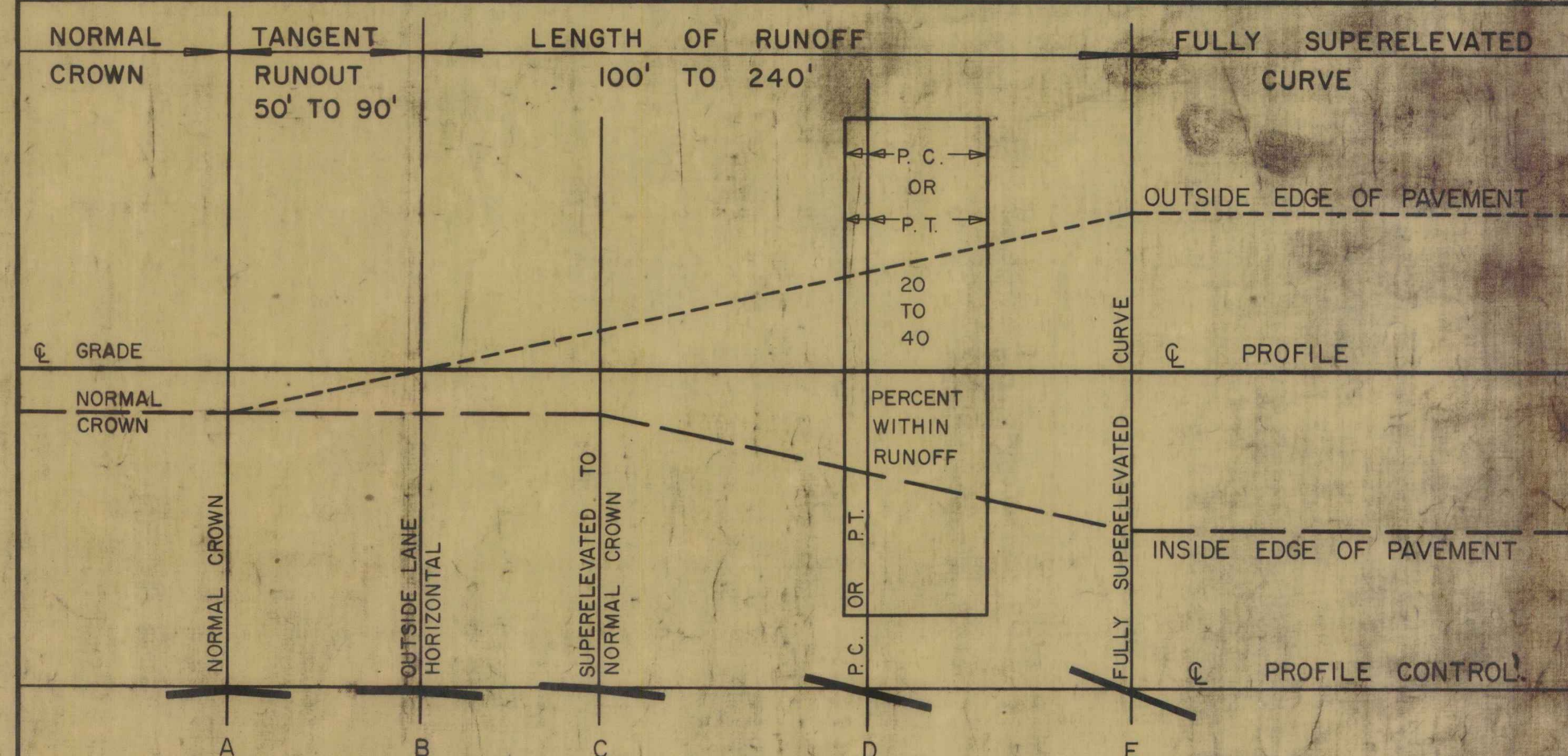
| RATE   | PAVEMENT WIDTHS |         |         |
|--------|-----------------|---------|---------|
|        | 20'             | 22'     | 24'     |
| 1/4"   | 5"              | 5 1/2"  | 6"      |
| 5/16"  | 6 1/4"          | 6 7/8"  | 7 1/2"  |
| 3/8"   | 7 1/2"          | 8 1/4"  | 9"      |
| 7/16"  | 8 3/4"          | 9 5/8"  | 10 1/2" |
| 1/2"   | 10"             | 11"     | 12"     |
| 9/16"  | 11 1/4"         | 12 3/8" | 13 1/2" |
| 5/8"   | 12 1/2"         | 13 3/4" | 15"     |
| 11/16" | 13 3/4"         | 15 1/8" | 16 1/2" |
| 3/4"   | 15"             | 16 1/2" | 18"     |
| 13/16" | 16 1/4"         | 17 7/8" | 19 1/2" |
| 7/8"   | 17 1/2"         | 19 1/4" | 21"     |
| 15/16" | 18 3/4"         | 20 5/8" | 22 1/2" |
| 1"     | 20"             | 22"     | 24"     |



TANGENT RUNOUT: CONSISTS OF MAKING THE LANE OR LANES ON THE OUTSIDE OF THE CURVE HORIZONTAL WITH THE CENTER LINE, USING 50 TO 90 FEET WHERE THE NORMAL CROWN IS APPROXIMATELY 1/4 OF AN INCH PER FOOT.

LENGTH OF RUNOFF FROM 60 TO 80 PERCENT OF THE LENGTH OF RUNOFF PREFERABLY SHOULD BE LOCATED ON THE TANGENT AT CURVES.

BREAKS IN PROFILES FOR PAVEMENT EDGES SHOULD BE ROUNDED IN FINAL DESIGN BY INSERTION OF VERTICAL CURVES. THE MINIMUM VERTICAL CURVE LENGTH IN FEET CAN BE USED NUMERICALLY EQUAL TO THE DESIGN SPEED IN MPH.



REVISIONS AND CORRECTIONS

APPROVED

DATE May 26, 1958

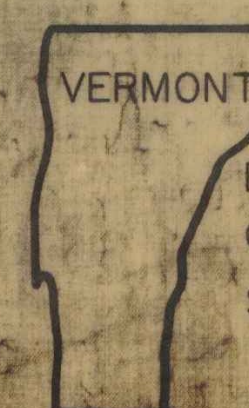
H.E. August  
 CHIEF ENGINEER

G.M. Lane  
 HIGHWAY ENGINEER

DRAWN: L.C.J.  
 TRACED: GUS A3A

G.E. Costin  
 CONSTRUCTION ENGINEER

## BANKING TABLES



STANDARD

B-1



| DEGREE  | RADIUS  | 30 MPH |        | 40 MPH         |        | 50 MPH        |        | 60 MPH        |        | 70 MPH        |        | SUP    |
|---------|---------|--------|--------|----------------|--------|---------------|--------|---------------|--------|---------------|--------|--------|
|         |         | RATE   | LENGTH | RATE           | LENGTH | RATE          | LENGTH | RATE          | LENGTH | RATE          | LENGTH |        |
| 0-15'   | 22,918' | NC     | 0      | NC             | 0      | NC            | 0      | NC            | 0      | RC            | 200    | 1/4"   |
| 0-30'   | 11,459' | NC     | 0      | NC             | 0      | RC            | 150    | RC            | 175    | RC            | 200    | 5/16"  |
| 0-45'   | 7,639'  | NC     | 0      | RC             | 125    | RC            | 150    | 1/4"          | 175    | 1/4"          | 200    | 3/8"   |
| 1°-00'  | 5,730'  | NC     | 0      | RC             | 125    | 1/4"          | 150    | 1/4"          | 175    | 5/16"         | 200    | 7/16"  |
| 1°-30'  | 3,820'  | RC     | 100    | 1/4"           | 125    | 5/16"         | 150    | 7/16"         | 175    | 1/2"          | 200    | 1/2"   |
| 2°-00'  | 2,865'  | 1/4"   | 100    | 5/16"          | 125    | 7/16"         | 150    | 9/16"         | 175    | 11/16"        | 200    | 9/16"  |
| 2°-30'  | 2,292'  | 1/4"   | 100    | 3/8"           | 125    | 1/2"          | 150    | 11/16"        | 175    | 13/16"        | 210    | 5/8"   |
| 3°-00'  | 1,910'  | 5/16"  | 100    | 7/16"          | 125    | 5/8"          | 150    | 13/16"        | 180    | 15/16"        | 230    | 11/16" |
| 3°-30'  | 1,637'  | 5/16"  | 100    | 1/2"           | 125    | 11/16"        | 150    | 7/8"          | 190    | 1"            | 240    | 3/4"   |
| 4°-00'  | 1,432'  | 3/8"   | 100    | 9/16"          | 125    | 3/4"          | 150    | 15/16"        | 210    | 1"            | 240    | 13/16" |
| 5°-00'  | 1,146'  | 7/16"  | 100    | 5/8"           | 125    | 13/16"        | 170    | 1"            | 220    | D MAX. = 3.5° |        | 7/8"   |
| 6°-00'  | 955'    | 1/2"   | 100    | 3/4"           | 125    | 15/16"        | 180    | 1"            | 220    |               |        | 15/16" |
| 7°-00'  | 819'    | 9/16"  | 100    | 13/16"         | 140    | 15/16"        | 190    | D MAX. = 5.0° |        |               |        | 1"     |
| 8°-00'  | 716'    | 5/8"   | 100    | 7/8"           | 150    | 1"            | 190    |               |        |               |        |        |
| 9°-00'  | 637'    | 5/8"   | 100    | 7/8"           | 160    | D MAX. = 7.6° |        |               |        |               |        |        |
| 10°-00' | 573'    | 11/16" | 100    | 15/16"         | 160    |               |        |               |        |               |        |        |
| 11°-00' | 521'    | 3/4"   | 110    | 15/16"         | 170    |               |        |               |        |               |        |        |
| 12°-00' | 477'    | 3/4"   | 120    | 1"             | 170    |               |        |               |        |               |        |        |
| 13°-00' | 441'    | 13/16" | 120    | 1"             | 170    |               |        |               |        |               |        |        |
| 14°-00' | 409'    | 13/16" | 130    | D MAX. = 12.4° |        |               |        |               |        |               |        |        |
| 16°-00' | 358'    | 7/8"   | 130    |                |        |               |        |               |        |               |        |        |
| 18°-00' | 318'    | 15/16" | 140    |                |        |               |        |               |        |               |        |        |
| 20°-00' | 286'    | 15/16" | 140    |                |        |               |        |               |        |               |        |        |
| 22°-00' | 260'    | 1"     | 140    |                |        |               |        |               |        |               |        |        |
| 22.9°   | 250'    | 1"     | 140    |                |        |               |        |               |        |               |        |        |

D MAX. = 22.9°

RATE = RATE OF SUPERELEVATION (PER FOOT)

LENGTH = MINIMUM LENGTH OF RUNOFF

NC = NORMAL CROWN SECTION

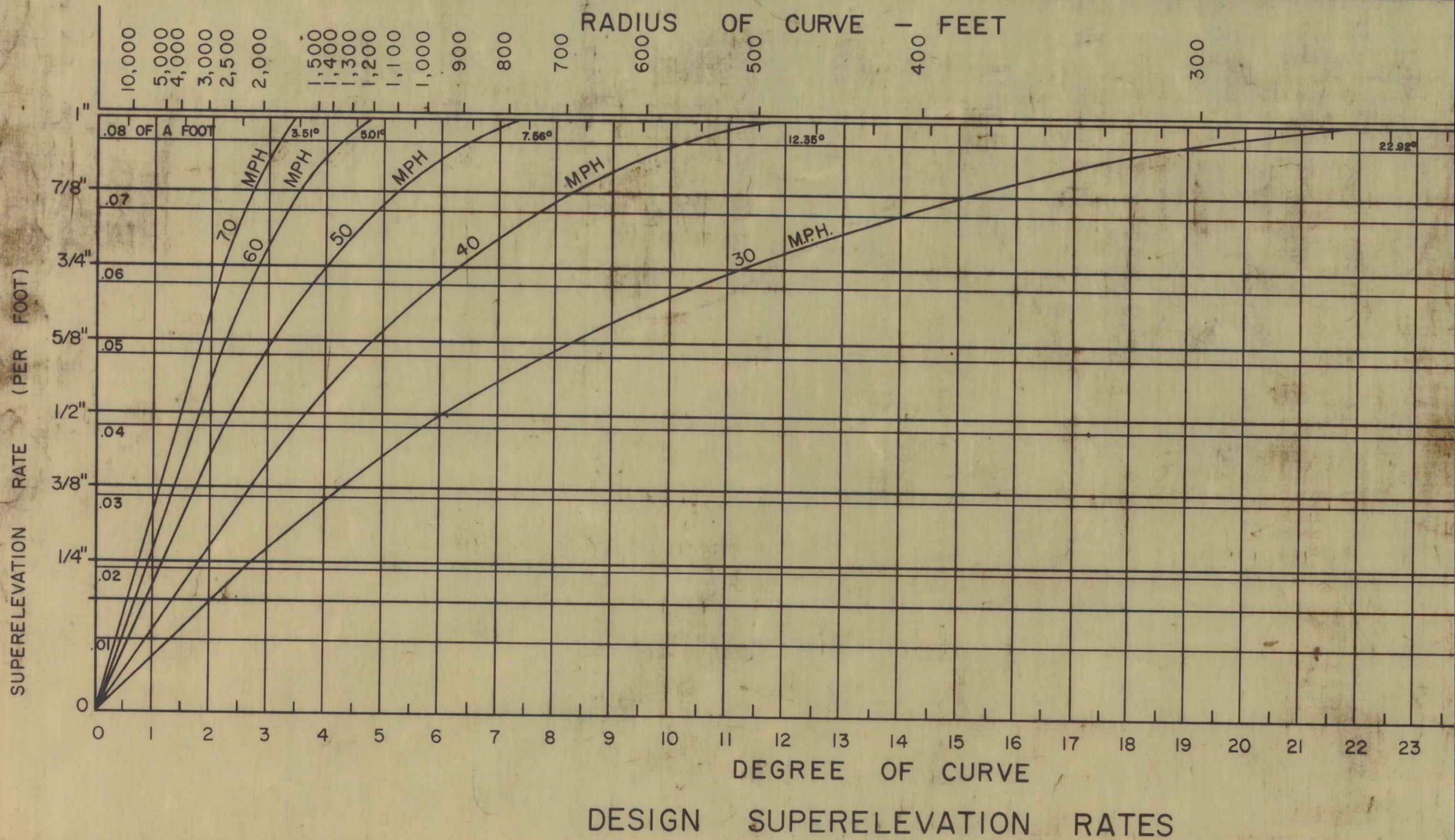
RC = REMOVE ADVERSE CROWN, SUPERELEVATE AT NORMA

RATES ARE FIGURED TO THE NEAREST SIXTEENTH INCH

BANKING FOR CURVES NOT LISTED IN TABLE MAY BE DETERMIN

DESIGN VALUES FOR RATE OF SUPERELEV

AND MINIMUM LENGTH OF RUNOFF



REVISIONS AND CORRECTIONS

APPROVED

DATE May 26, 1958

H.E. August  
CHIEF ENGINEER

G.M. Lane  
HIGHWAY ENGINEER

DRAWN: L.C.J.  
TRACED: GUS AJA

W. McEntee  
CONSTRUCTION ENGINEER





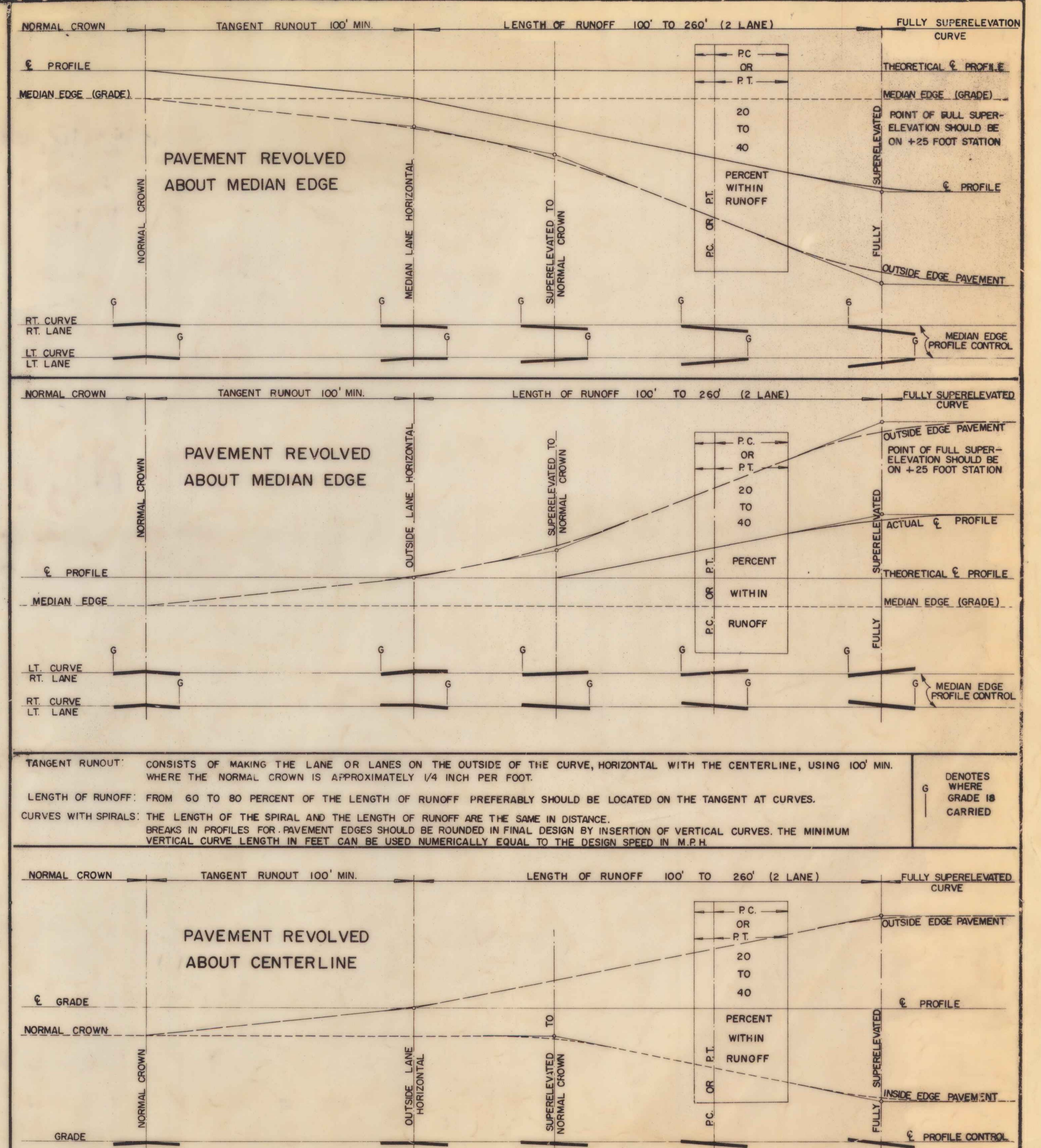
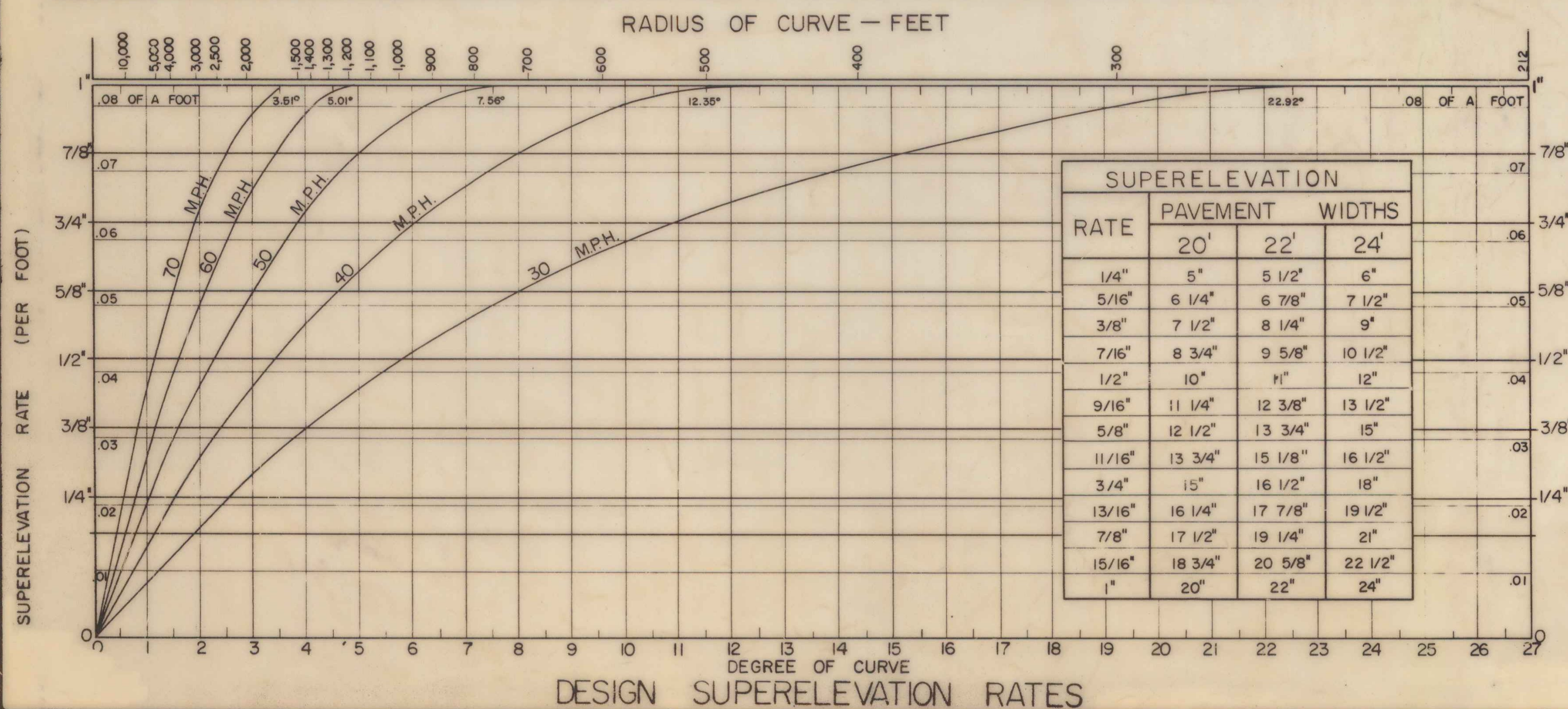


| DEGREE OF CURVE | RADIUS | V = 30 MPH |               | V = 40 MPH |                | V = 50 MPH |               | V = 60 MPH |               | V = 65 MPH |               | V = 70 MPH |               | V = 75 MPH    |               | V = 80 MPH |               |
|-----------------|--------|------------|---------------|------------|----------------|------------|---------------|------------|---------------|------------|---------------|------------|---------------|---------------|---------------|------------|---------------|
|                 |        | L - FEET   |               | L - FEET   |                | L - FEET   |               | L - FEET   |               | L - FEET   |               | L - FEET   |               | L - FEET      |               | L - FEET   |               |
|                 |        | e          | 2 LANE 4 LANE | e          | 2 LANE 4 LANE  | e          | 2 LANE 4 LANE | e          | 2 LANE 4 LANE | e          | 2 LANE 4 LANE | e          | 2 LANE 4 LANE | e             | 2 LANE 4 LANE | e          | 2 LANE 4 LANE |
| 0° 15'          | 22918' | NC         | 0             | 0          | NC             | 0          | 0             | NC         | 0             | 0          | NC            | 0          | 0             | NC            | 0             | RC         | 240           |
| 0° 30'          | 11459' | NC         | 0             | 0          | NC             | 0          | 0             | RC         | 175           | 175        | RC            | 190        | 190           | RC            | 200           | 1/4        | 220           |
| 0° 45'          | 7639'  | NC         | 0             | 0          | NC             | 0          | 0             | RC         | 150           | 150        | 1/4           | 175        | 175           | 5/16          | 190           | 3/8        | 200           |
| 1° 00'          | 5730'  | NC         | 0             | 0          | RC             | 125        | 125           | 1/4        | 150           | 150        | 3/8           | 175        | 175           | 3/8           | 190           | 1/2        | 220           |
| 1° 30'          | 3820'  | RC         | 100           | 100        | 1/4            | 125        | 125           | 3/8        | 150           | 150        | 1/2           | 175        | 175           | 9/16          | 190           | 200        | 240           |
| 2° 00'          | 2865'  | RC         | 100           | 100        | 5/16           | 125        | 125           | 7/16       | 150           | 150        | 5/8           | 175        | 210           | 11/16         | 190           | 250        | 380           |
| 2° 30'          | 2292'  | 1/4        | 100           | 100        | 3/8            | 125        | 125           | 9/16       | 150           | 170        | 3/4           | 175        | 240           | 13/16         | 190           | 290        | 400           |
| 3° 00'          | 1910'  | 5/16       | 100           | 100        | 7/16           | 125        | 125           | 5/8        | 150           | 190        | 13/16         | 180        | 270           | 7/8           | 210           | 320        | 400           |
| 3° 30'          | 1637'  | 5/16       | 100           | 100        | 1/2            | 125        | 140           | 11/16      | 150           | 210        | 7/8           | 200        | 300           | 15/16         | 220           | 330        | 400           |
| 4° 00'          | 1432'  | 3/8        | 100           | 100        | 9/16           | 125        | 150           | 3/4        | 150           | 230        | 15/16         | 210        | 310           | 1             | 240           | 360        | 400           |
| 5° 00'          | 1146'  | 7/16       | 100           | 100        | 11/16          | 125        | 170           | 7/8        | 170           | 260        | 1             | 220        | 320           | 1             | 230           | 350        | 400           |
| 6° 00'          | 955'   | 1/2        | 100           | 120        | 3/4            | 130        | 190           | 15/16      | 180           | 280        | 1             | 220        | 320           | D MAX. = 4.5° |               |            |               |
| 7° 00'          | 819'   | 9/16       | 100           | 130        | 13/16          | 140        | 210           | 15/16      | 190           | 280        | D MAX. = 5.0° |            |               |               |               |            |               |
| 8° 00'          | 716'   | 5/8        | 100           | 140        | 7/8            | 150        | 220           | 1          | 190           | 290        | D MAX. = 7.5° |            |               |               |               |            |               |
| 9° 00'          | 637'   | 11/16      | 100           | 150        | 7/8            | 160        | 240           |            |               |            |               |            |               |               |               |            |               |
| 10° 00'         | 573'   | 11/16      | 110           | 160        | 15/16          | 160        | 240           |            |               |            |               |            |               |               |               |            |               |
| 11° 00'         | 521'   | 3/4        | 110           | 170        | 15/16          | 170        | 250           |            |               |            |               |            |               |               |               |            |               |
| 12° 00'         | 477'   | 13/16      | 120           | 180        | 15/16          | 170        | 250           |            |               |            |               |            |               |               |               |            |               |
| 13° 00'         | 441'   | 13/16      | 120           | 180        | 1              | 170        | 250           |            |               |            |               |            |               |               |               |            |               |
| 14° 00'         | 409'   | 13/16      | 130           | 190        | D MAX. = 12.5° |            |               |            |               |            |               |            |               |               |               |            |               |
| 16° 00'         | 358'   | 7/8        | 130           | 200        |                |            |               |            |               |            |               |            |               |               |               |            |               |
| 18° 00'         | 318'   | 15/16      | 140           | 210        |                |            |               |            |               |            |               |            |               |               |               |            |               |
| 20° 00'         | 286'   | 15/16      | 140           | 210        |                |            |               |            |               |            |               |            |               |               |               |            |               |
| 22° 00'         | 260'   | 15/16      | 140           | 220        |                |            |               |            |               |            |               |            |               |               |               |            |               |

V - ASSUMED DESIGN SPEED  
e - RATE OF SUPERELEVATION  
L - MINIMUM LENGTH OF RUNOFF OF SPIRAL CURVE  
NC - NORMAL CROWN SECTION  
RC - REMOVE ADVERSE CROWN, SUPERELEVATE AT NORMAL CROWN SLOPE  
SPIRALS DESIRABLE BUT NOT AS ESSENTIAL ABOVE HEAVY LINE  
LENGTHS ROUNDED IN MULTIPLES OF 25 OR 50 FEET PERMIT SIMPLER CALCULATIONS  
LENGTH OF RUNOFF FOR A 4 LANE HIGHWAY IS BASED ON A ROADWAY WITH 16 FEET OR LESS MEDIAN

RATES ARE FIGURED TO THE NEAREST SIXTEENTH INCH.  
BANKING FOR CURVES NOT LISTED IN TABLES MAY BE DETERMINED FROM GRAPH.

DESIGN VALUES FOR RATE OF SUPERELEVATION AND MINIMUM LENGTH OF RUNOFF



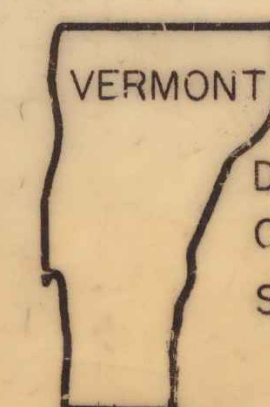
REVISIONS AND CORRECTIONS  
MAR 1, 1965... REVISED COMPLETE "PAVEMENT REVOLVING" SECTION  
JULY 17, 1967... REVISED BANKING AND LENGTH OF RUNOFF IN ACCORDANCE WITH 1965 BLUE BOOK

APPROVED DATE MARCH 10, 1965

G. S. Bishop  
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DRAWN: L.C.  
TRACED: GUS AJA

## BANKING TABLES



DEPARTMENT OF HIGHWAYS  
STANDARD

B-1