

Revisions

Description	Approved	Date	Description	Approved	Date

DESIGN CRITERIA:

1. VERTICAL CURVES ARE REQUIRED FOR ALL GRADE BREAKS GREATER THAN 1%
2. MINIMUM VERTICAL CURVE LENGTH (L) SHALL BE 10-FEET
3. LENGTH OF VERTICAL CURVE (L) = KA
4. GRADE BREAK (A)=S2-S1
5. K DETERMINE FROM TABLE 2

TABLE 1: MINIMUM DESIGN SPEED

	MIN DESIGN SPEED
DRIVEWAYS	15 mph
ACCESS ROADS	25 mph

TABLE 2: MINIMUM DESIGN K-VALUE

DESIGN SPEED (mph)	SAG VERTICAL CURVE (minimum K-value, ft/%)	CREST VERTICAL CURVE (minimum K-value, ft/%)
15	3	10
20	7	17
25	12	26
30	19	37
35	29	49

FOR DESIGN SPEEDS GREATER THAN 35 mph REFER TO SAN LUIS OBISPO COUNTY PUBLIC WORKS STANDARD DRAWINGS FOR DESIGN REQUIREMENTS

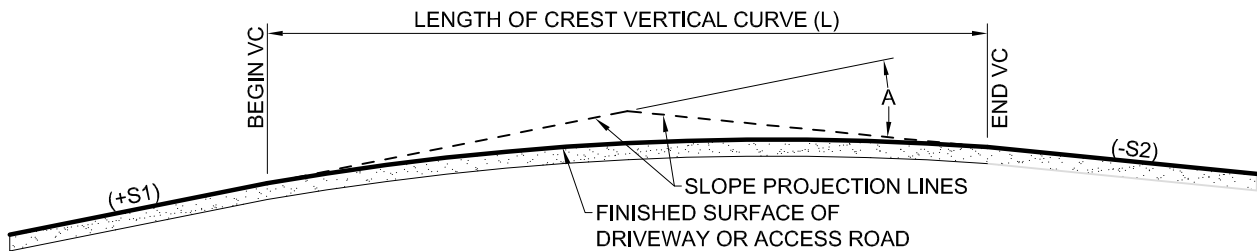


FIG 1: CREST VERTICAL CURVE

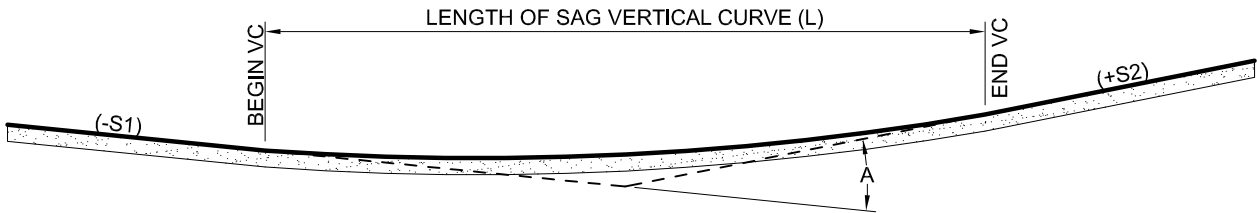


FIG 2: SAG VERTICAL CURVE

EXAMPLE 1:

GIVEN:

DRIVEWAY WITH A DESIGN SPEED OF 20 mph, SAG CONDITION, A DOWNHILL SLOPE IN (S1) OF -5% AND A UPHILL SLOPE OUT (S2) OF +3%, DETERMINE THE MINIMUM VERTICAL CURVE LENGTH.

SOLUTION:

FROM TABLE 2 & FIG 2, SAG CONDITION, 20mph DESIGN SPEED, THEN K=7
 GIVEN THAT S1=-5 & S2=+3, THEN A=S2-S1=(+3)-(-5)=8
 REQUIRED MINIMUM LENGTH OF VERTICAL CURVE (L)=KA=7x8=56 ft

EXAMPLE 2:

GIVEN:

ACCESS ROAD WITH A DESIGN SPEED OF 20 mph, CREST CONDITION, A UPHILL SLOPE IN (+S1) OF +3% AND A DOWNHILL SLOPE OUT (S2) OF -10%, DETERMINE THE MINIMUM VERTICAL CURVE LENGTH.

SOLUTION:

FROM TABLE 2 & FIG 1, CREST CONDITION, 20mph DESIGN SPEED, THEN K=17
 GIVEN THAT S1=+3 & S2=-10, THEN A=S2-S1=(-10)-(3)=-13, OR 13
 REQUIRED MINIMUM LENGTH OF VERTICAL CURVE (L)=KA=17x13=221 ft



**SAN LUIS OBISPO COUNTY FIRE DEPARTMENT
 PRIVATE DRIVEWAY & ACCESS ROAD
 VERTICAL CURVE STANDARD**

Scale: NTS	Adopted: AUG 2014
Fire Safe Drawing No: FS-3	
Sheet No:	1 OF 3