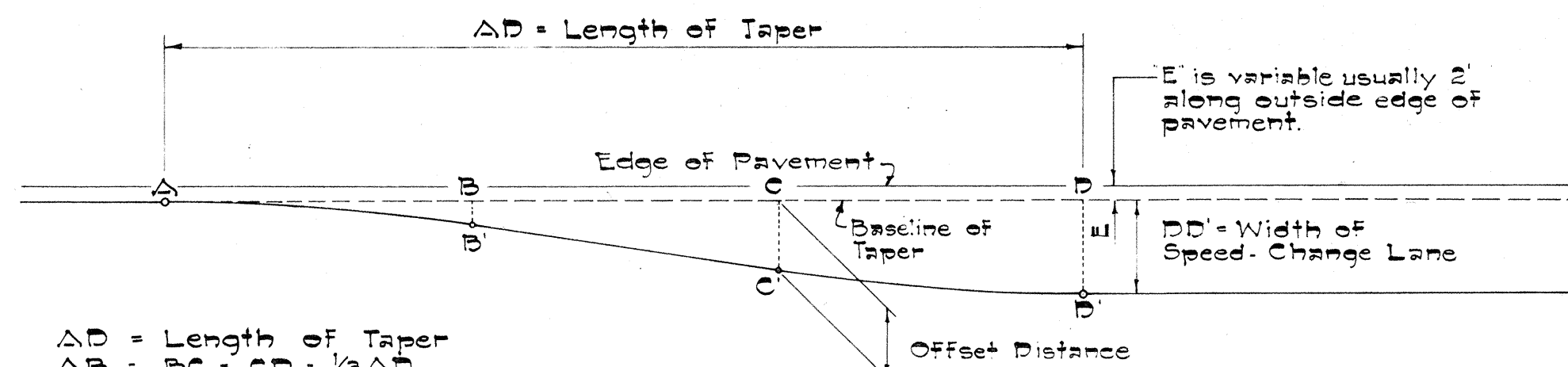
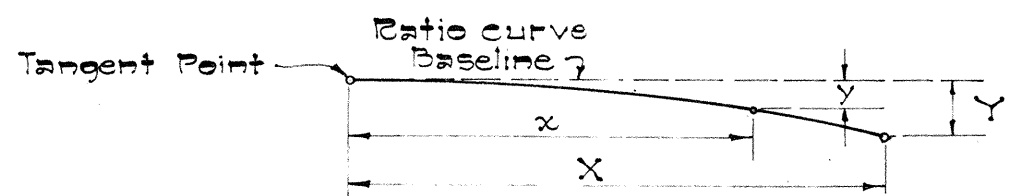


These Curves are based upon the following formula:

$$Y = \frac{\sum x^2}{\sum x^2}$$

$y$  = any offset,  $x$  = its tangent dist.  
 $X$  = maximum tangent distance  
 $Y$  = maximum offset



$\Delta D$  = Length of Taper  
 $\Delta B$  =  $BC + CD = \frac{1}{3}\Delta D$   
 $\Delta B'$  and  $\Delta C'$  are Parabolic Curves  
 $BB' = \frac{1}{4} \Delta B$   
 $CC' = \frac{3}{4} \Delta B$

TAPER FOR SPEED-CHANGE LANE

Scale : 1" = 20'

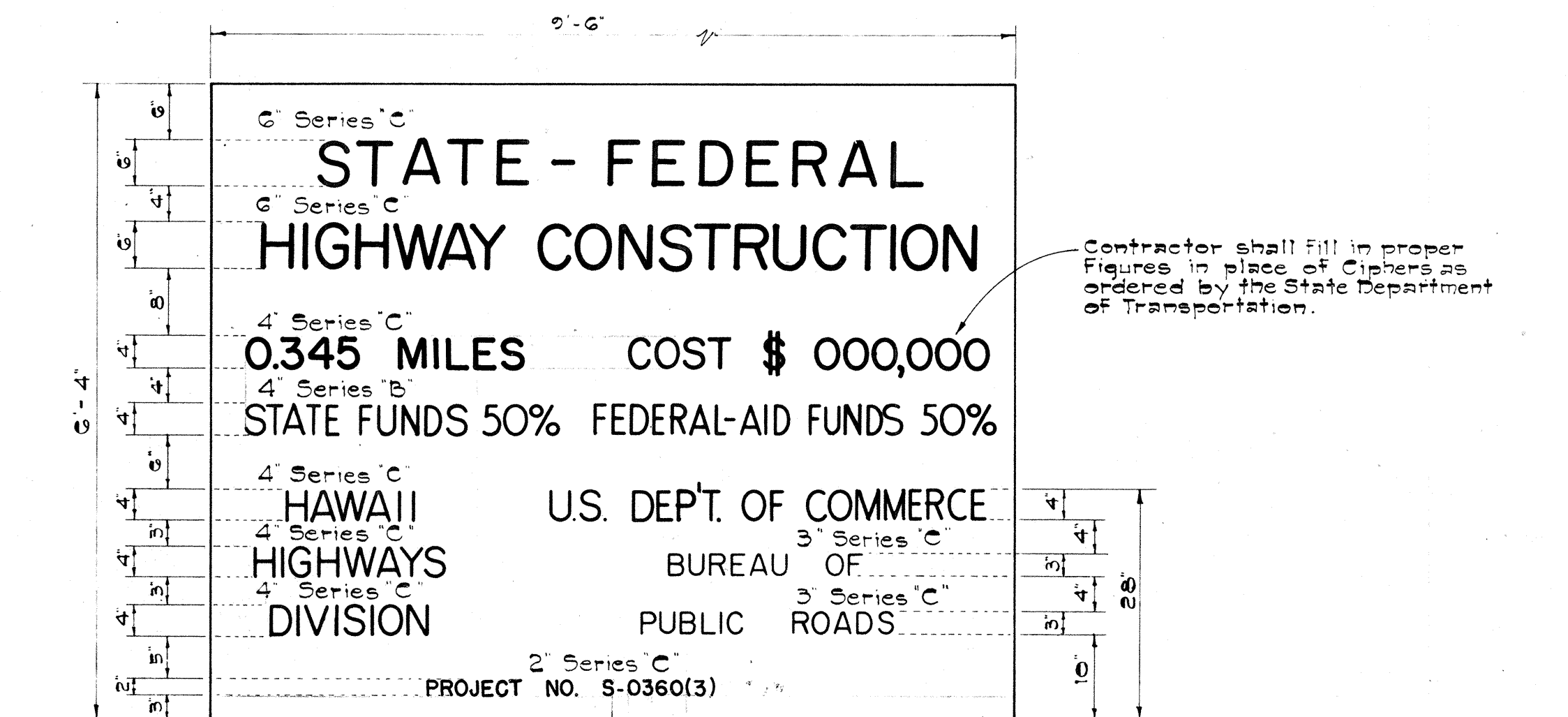
FOLLOWING TABLE GIVES OFFSETS FROM BASELINE PARALLEL TO EDGE OF PAYEMENT AT INTERVALS MEASURED FROM PT. A. ADD "E" FOR MEASUREMENT FROM EDGE OF PAVT.

| OFFSET FROM<br>BASELINE<br>OF TAPER (FT.) |       |       | LENGTH OF TAPER (FEET) = AD  |     |       |     |       |     |       |     |
|-------------------------------------------|-------|-------|------------------------------|-----|-------|-----|-------|-----|-------|-----|
|                                           |       |       | 90                           | 120 | 150   | 180 | 210   | 240 | 270   | 300 |
| DD-10                                     | DD-11 | DD-12 | DISTANCE FROM POINT A (FEET) |     |       |     |       |     |       |     |
| 0                                         | 0     | 0     | 0                            | 0   | 0     | 0   | 0     | 0   | 0     | 0   |
| 0.15                                      | 0.17  | 0.19  | 7.5                          | 10  | 12.5  | 15  | 17.5  | 20  | 22.5  | 25  |
| 0.32                                      | 0.37  | 0.43  | 15                           | 20  | 25    | 30  | 35    | 40  | 45    | 50  |
| 1.41                                      | 1.55  | 1.69  | 22.5                         | 30  | 37.5  | 45  | 52.5  | 60  | 67.5  | 75  |
| *2.50                                     | *2.75 | *3.00 | 30                           | 40  | 50    | 60  | 70    | 80  | 90    | 100 |
| *3.00                                     | *3.35 | *3.60 | 45                           | 60  | 75    | 90  | 105   | 120 | 135   | 150 |
| *3.50                                     | *3.85 | *4.00 | 60                           | 80  | 100   | 120 | 140   | 160 | 180   | 200 |
| 8.50                                      | 9.25  | 10.31 | 67.5                         | 90  | 112.5 | 135 | 157.5 | 180 | 202.5 | 225 |
| 9.98                                      | 10.31 | 11.25 | 75                           | 100 | 125   | 150 | 175   | 200 | 225   | 250 |
| 2.84                                      | 10.83 | 11.81 | 82.5                         | 110 | 137.5 | 165 | 192.5 | 220 | 247.5 | 275 |
| 10.00                                     | 11.00 | 12.00 | 90                           | 120 | 150   | 180 | 210   | 240 | 270   | 300 |

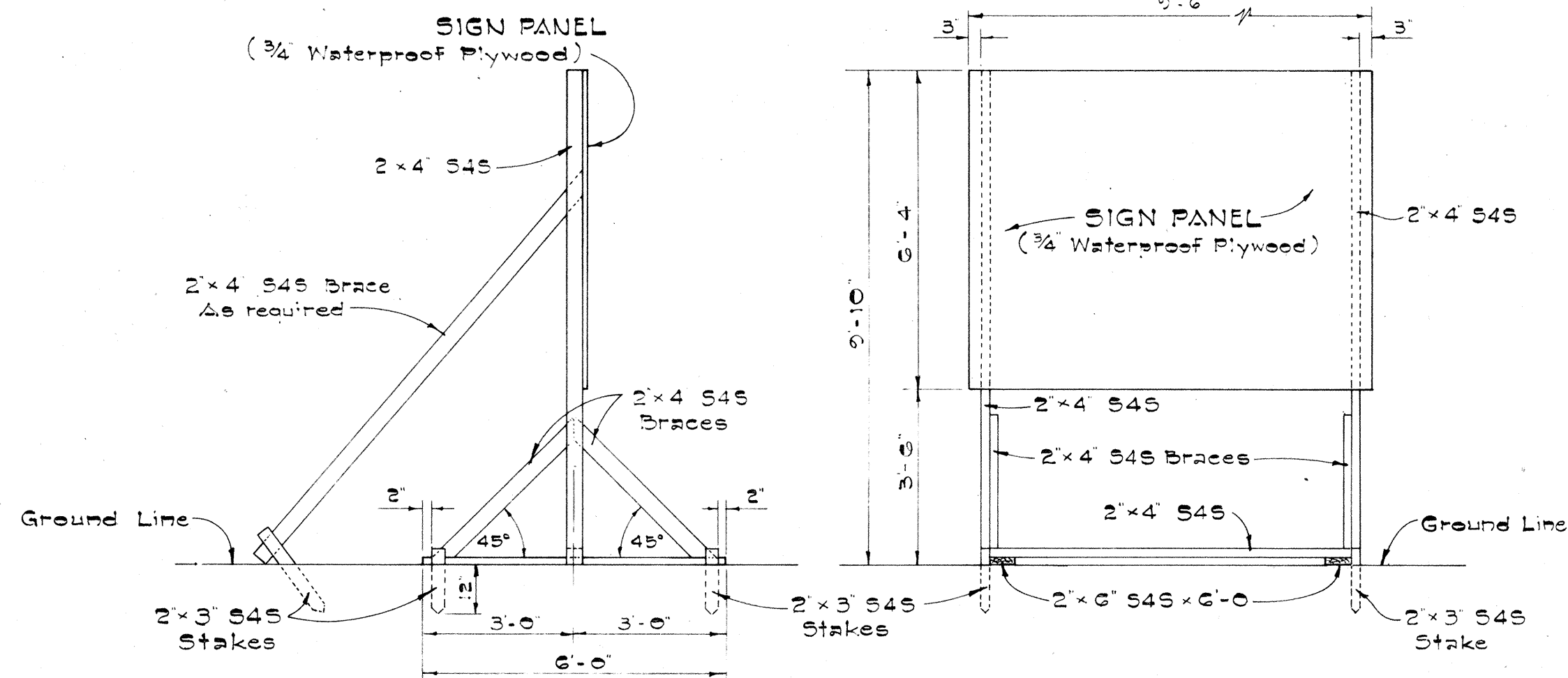
\* Where edge of pavement is a curve, neither Baseline nor Taper between B' and C' will be a tangent. Use proportional offset from B' to C'.

| Dist. in Ft. (y) | Offset in Feet (x) |      |      |      |      |        |  |  |
|------------------|--------------------|------|------|------|------|--------|--|--|
| 10               | 2.30               | 3.45 | 5.50 | 7.70 | 9.90 | 10.100 |  |  |
| 20               | 0.22               | 0.15 | 0.20 | 0.14 | 0.11 | 0.10   |  |  |
| 30               | 0.89               | 0.50 | 0.80 | 0.57 | 0.44 | 0.40   |  |  |
| 40               | 2.00               | 1.33 | 1.80 | 1.29 | 1.00 | 0.90   |  |  |
| 50               |                    | 2.37 | 3.20 | 2.29 | 1.73 | 1.60   |  |  |
| 60               |                    |      | 5.00 | 3.97 | 2.78 | 2.50   |  |  |
| 70               |                    |      |      | 5.14 | 4.09 | 3.60   |  |  |
| 80               |                    |      |      | 7.00 | 5.44 | 4.90   |  |  |
| 90               |                    |      |      |      | 7.11 | 6.40   |  |  |
| Dist. in Ft. (y) |                    |      |      |      | 2.00 | 8.10   |  |  |
| 100              |                    |      |      |      |      | 10.00  |  |  |

NOTE: Any ratio curve in this tabulation is designated by the maximum offset and its tangent distance.



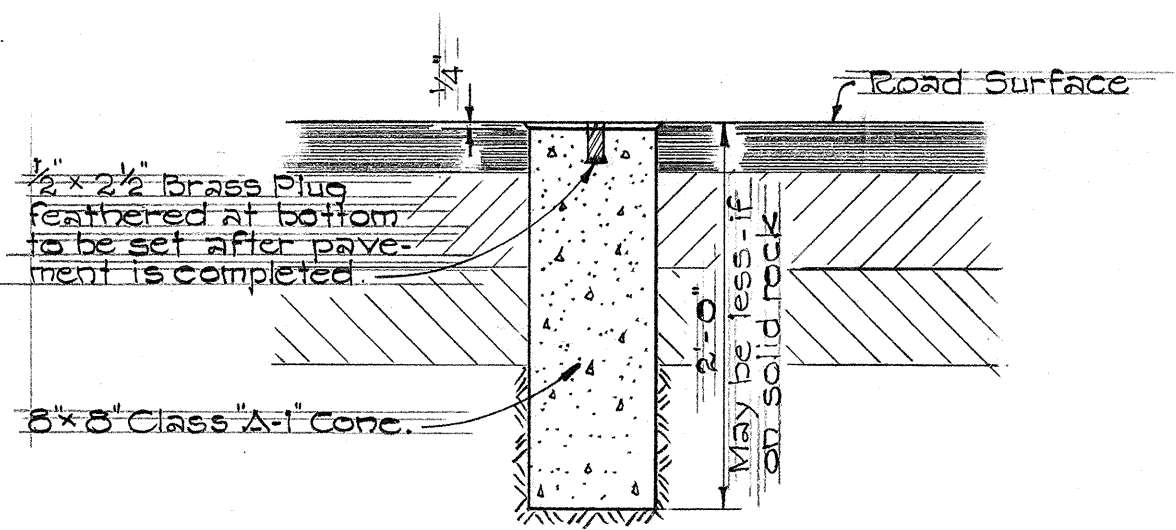
PLAN  
SCALE:  $\frac{3}{4} = 1'-0"$



SIDE VIEW                      FRONT VIEW

ELEVATIONS

PRIMARY SYSTEM PROJECT SIGN  
SCALE: AS NOTED



**CENTER LINE MONUMENT**  
Scale: 1" = 1'-0"

GENERAL NOTES:

1. The legend shall be black on white background.
2. All letters shall be of size and design shown and conform with "Standard Alphabets for Highway Signs as set forth by the Public Roads Administration, Federal Work Agency.
3. Letters shall be Series "C" sizes as shown, except where noted otherwise on the plan.
4. Contractor shall be responsible for maintenance of sign.

|                  |                   |      |
|------------------|-------------------|------|
| ORIGINAL<br>PLAN | SURVEY PLOTTED BY | DATE |
|                  | DRAWN BY          | "    |
|                  | TRACED BY         | "    |
| NOTE BOOK        | DESIGNED BY       | "    |
|                  | QUANTITIES BY     | "    |
| No.              | CHECKED BY        | "    |

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

MISCELLANEOUS DETAILS

HANA BELT ROAD  
KAKIPI GULCH SECTION  
F.A.S. PROJECT NO: S-0360(3)

Scale: As Noted Date: Oct. 1962

**SHEET NO 1 OF 2 SHEETS**

