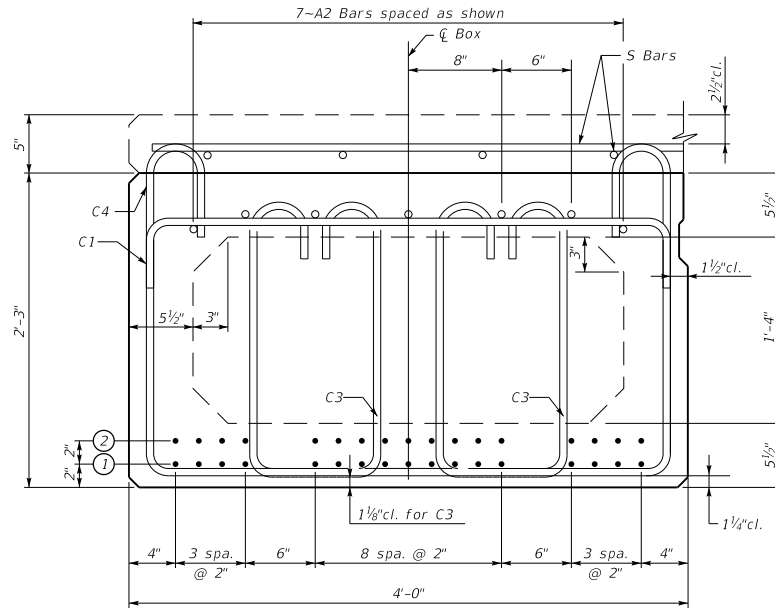
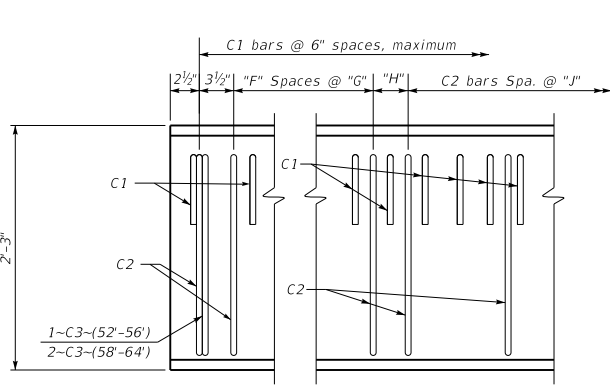


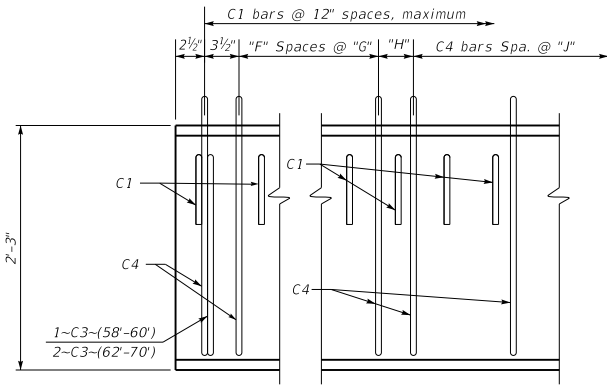
B27 BEAM



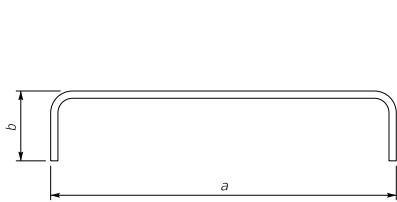
CB27 BEAM



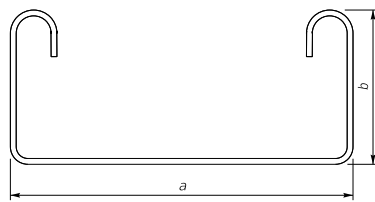
B27 ELEVATION OF 0° SKEW
(Refer to BDP-003,c.e. for skewed details)



CB27 ELEVATION OF 0° SKEW
(Refer to BDP-003,c.e. for skewed details)



C1(e) Bar



C2(e)-C4(e) Bars

TABLE OF STRAND DATA

| Beam Type | Beam Length (feet) | Number of Strands Required | |
|-----------|--------------------|----------------------------|-------|
| | | Row ① | Row ② |
| B27 | 52 | 17 | 7 |
| | 54 | 17 | 2 |
| | 56 | 17 | 3 |
| | 58 | 17 | 5 |
| | 60 | 17 | 6 |
| CB27 | 62 | 17 | 8 |
| | 64 | 17 | 9 |
| | 58 | 17 | 3 |
| | 60 | 17 | 4 |
| | 62 | 17 | 6 |
| | 64 | 17 | 7 |
| | 66 | 17 | 9 |
| 68 | 17 | 10 | |
| | 70 | 17 | 12 |

TABLE OF DIMENSION DATA

| Beam Type | Beam Length (feet) | "F" | "G" | "H" | "J" | | |
|-----------|--------------------|-----|-----|---------|-----|--|--|
| B27 | 52 | 5 | 14" | 11" | 18" | | |
| | 54 | 5 | 13" | 10" | 18" | | |
| | 56 | 5 | 13" | 13" | 18" | | |
| | 58 | 5 | 13" | 16" | 18" | | |
| | 60 | 6 | 12" | 12" | 18" | | |
| | 62 | 6 | 12" | 13 1/2" | 17" | | |
| CB27 | 64 | 6 | 12" | 8 1/2" | 17" | | |
| | 58 | 6 | 12" | 18" | 21" | | |
| | 60 | 6 | 12" | 19 1/2" | 21" | | |
| | 62 | 6 | 12" | 14" | 20" | | |
| | 64 | 7 | 11" | 11" | 20" | | |
| | 66 | 7 | 11" | 13" | 20" | | |
| | 68 | 7 | 11" | 15" | 20" | | |
| | 70 | 8 | 10" | 14" | 20" | | |

| BAR QUANTITIES TABLE | | DESIGN DATA | | | | | | | | | |
|----------------------|--------------------|-------------|----|----|------|---------|---------|---------|-----------|----------|----------|
| Beam Type | Beam Length (feet) | C1 | C2 | C3 | C4 | DC kips | DW kips | LL kips | LL+I kips | Δd (in.) | Δc (in.) |
| B27 | 52 | 105 | 40 | 2 | | 20.6 | 1.5 | 47.0 | 59.1 | | |
| | 54 | 109 | 42 | 2 | | 21.4 | 1.5 | 47.7 | 60.0 | | |
| | 56 | 113 | 43 | 2 | | 22.2 | 1.6 | 48.4 | 60.7 | | |
| | 58 | 117 | 44 | 4 | | 23.0 | 1.7 | 49.1 | 61.5 | | |
| | 60 | 121 | 47 | 4 | | 23.7 | 1.7 | 49.7 | 62.2 | | |
| | 62 | 125 | 50 | 4 | | 24.5 | 1.8 | 50.4 | 62.9 | | |
| CB27 | 64 | 129 | 52 | 4 | | 25.2 | 1.8 | 51.0 | 63.6 | | |
| | 58 | 59 | 2 | 41 | 30.2 | 1.7 | 49.1 | 61.5 | 0.3 | 0.9 | |
| | 60 | 61 | 2 | 42 | 31.2 | 1.7 | 49.7 | 62.2 | 0.3 | 0.9 | |
| | 62 | 63 | 4 | 45 | 32.3 | 1.8 | 50.4 | 62.9 | 0.3 | 1.1 | |
| | 64 | 65 | 4 | 48 | 33.3 | 1.8 | 51.0 | 63.6 | 0.4 | 1.2 | |
| | 66 | 67 | 4 | 49 | 34.3 | 1.9 | 51.6 | 64.3 | 0.4 | 1.3 | |
| | 68 | 69 | 4 | 50 | 35.4 | 1.9 | 52.2 | 65.0 | 0.5 | 1.4 | |
| | 70 | 71 | 4 | 53 | 36.4 | 2.0 | 52.8 | 65.6 | 0.5 | 1.6 | |

Straight Reinforcement

| Mark | Size | Length |
|-------|------|----------------------|
| A1(E) | #5 | Beam Length Minus 3" |
| A2(E) | #4 | Beam Length Minus 3" |
| D(E) | #8 | 2'-0" |

NOTE: A1 and A2 bars are to be lapped 2'-2" when necessary.

Bent Reinforcement

| Mark | Size | a | b |
|-------|------|---------|------------|
| C1(e) | #5 | 3'-9" | 6" |
| C2(e) | #4 | 3'-9" | 1'-11 1/4" |
| C3(e) | #5 | 11 3/8" | 1'-11 3/8" |
| C4(e) | #4 | 3'-9" | 2'-4 1/4" |

KENTUCKY
DEPARTMENT OF HIGHWAYS
BOX BEAM
B27 & CB27
DETAILS

STANDARD DRAWING NO. **BDP-009-04**
 SUBMITTED BY *Bert Adams* DATE **02-26-20**
 DIRECTOR DIVISION OF STRUCTURAL DESIGN
 APPROVED BY *[Signature]* DATE **02-26-20**
 STATE ENGINEER