1. Work this Index with the Florida-I Beam Standard Details (Index 450-036 thru 450-096) and the Table of Beam Variables in Structures Plans.
2. All bar bend dimensions are out-to-out.
3. Concrete cover: 2 inches minimum.
4. Strands N: ø 0.25 minimum, stressed to 16,000 lbs. each.
5. Place one (1) bar Ø 5K or Ø 5Z at each location. Alternate the direction of the ends for each bar (see "ELEVATION AT END OF BEAM" in Standard Details).
6. Tie bars Ø 5K and Ø 5Z to the fully bonded strands in the bottom or center row (see "STRAND PATTERN" on the Table of Beam Variables sheet in Structures Plans).
    a. At the Contractor's option, the length of the bottom legs of bars Ø 5K and Ø 5Z may be extended to facilitate tying to the exterior strands.
    b. For deformed WWR, supplementary transverse #4 bars are permitted to support pieces Ø 6 & 5 under the cross wires on the bottom row of strands.
7. Place bars 3C1, 3C2, 3D1, 3D2, and 4M1 in beam END 1, and bars 3C2, 3D2, and 4M2 in beam END 2.
8. For beams with vertically beveled end conditions: Place first row of bars 3C1, 3C2, 3D1, 3D2, 5K, 5Y, and 5Z parallel to the backwall only. Progressively rotate remaining bars within the limits of bars Ø 5K and Ø 5Z placed at the top of beam up to a maximum of 1". For deformed WWR, cut top cross wire and rotate bars as required or reduce end cover at top of beam to 1" minimum.
9. For beams with skewed end conditions:
   a. Place end reinforcement parallel to the skewed end of the beam. End reinforcement is defined as bars 3C1, 3C2, 3D1, 3D2, 5K, 4M1, 4M2, 5Y and 5Z placed within the limits of the spacing for bars 3C in "ELEVATION AT END OF BEAM".
   b. Beyond the limits of the spacing for bars 3C, place bars 3D1, 5K and 5M perpendicular to the longitudinal axis of the beam. Fan bars as needed to avoid overlapping bars at the transition to bars 3D3 and 4M3 and field cut to maintain minimum cover. Provide additional bars 4M1, 4M2, 3D1 and 3D2 as required; additional bars are not included in the "BILL OF REINFORCING STEEL" for placement locations seen on skewed beam end details for widening existing bridges.
   c. Adjust the dimensions of bars 3C1, 3C2, 3D1, 3D2, 4M1 and 4M2 as shown on the bending diagram.
   d. WWR is not permitted for end reinforcement bars 3D1, 3D2, 4M1 and 4M2; use bar reinforcement.
10. Contractor Options:
    a. Deformed WWR may be used in lieu of bars 3D, 5K, 4M, and 5Z as shown on the Standard Details; except at skewed ends (see Note 9).
    b. Bars 3D1, 3D2 and 3D3 may be fabricated as a single bar with a 1'-0" minimum lap splice of the top legs, or the length of the bottom legs may be extended to facilitate tying to the exterior strands.
11. Embedment of safety line anchorage devices are permitted in the top flange to accommodate fall protection systems. See shop drawings for details and spacing of any required anchorage devices.
12. For beams with ends that will not be permanently encased in concrete diaphragms, cut wedges and recess prestressing strands at the end of the beam without damaging the surrounding concrete. See "STRAND CUTTING AND PROTECTING DETAIL" on Sheet 2. Protect end of wedged recessed strands in accordance with Specification Section 450.
When Intermediate Diaphragms are Required by Design

Face of Beam Web

Bars 3C1 or 3C2 (Pairs)

Bars 3D1 or 3D2 (Pairs)

Bars 5K (Typ.)

Bars 5Z (shown dotted, Typ.)

2

6" Chamfer

Bars 5Z spaced perpendicular to end of beam @ 3'/2". Skewed Bars 5Z, 4M1 or 4M2 placed with Bars 5K *

Bars 4M1 (Typ.)

Bars 4M2

Bars 5K spaced along & Beam @ 3'. Bars 4M1 or 4M2 placed with alternate Bars 5K *

Bars 3D1 or 3D2 (Pairs)

Bars 3C1 or 3C2

Bars 5K spaced in this area, for skewed beam ends

1 - Additional Bar 4M1 or 4M2 (shown dashed)

Begin WWR Option when applicable, Pieces 4-3 & 5-1, see Sheet 2 of Index 450-036 thru 450-096

WWR not permitted for Bars 4M1 or 4M2 in this area, for skewed beam ends

6" Chamfer

Bars 5Z (shown dotted, Typ.)

Bars 3C1 or 3C2

Bars 3D1 or 3D2 (Pairs)

Bars 5K (Typ.)

Bars 3D3 (Pairs)

Bars 5K (Typ.)

Bars 5K spaced along & Beam @ 3'. Bars 4M1 or 4M2 placed with alternate Bars 5K *

Insert for Diaphragm Reinforcing

(When Intermediate Diaphragms are Required by Design)

Insert Notes

1. Provide 1/8" zinc-electroplated ferrule wing nut or coil inserts, UNC threads, 1/8" minimum gage wire, not more than 4" in depth with a minimum ultimate tensile strength of 11,400 lbs. in 4,000 psi concrete.

2. If inserts are needed on both sides (faces) of beam webs, an assembly as long as the thickness of the beam web, consisting of two (2) ferrule or coil inserts attached by two (2) or more struts may be utilized. The connecting struts shall have a minimum ultimate tensile strength of 11,400 lbs.

3. Inserts for diaphragm reinforcing are required at each end of each intermediate diaphragm shown on the Beam Framing Plan and may be required at the end of the beams when end diaphragms are shown. See Superstructure and Beam Framing Plans for longitudinal location of inserts for each face of beam.

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 skewed beam end details for widening existing bridges

(florida-i 36 beam shown, others similar)