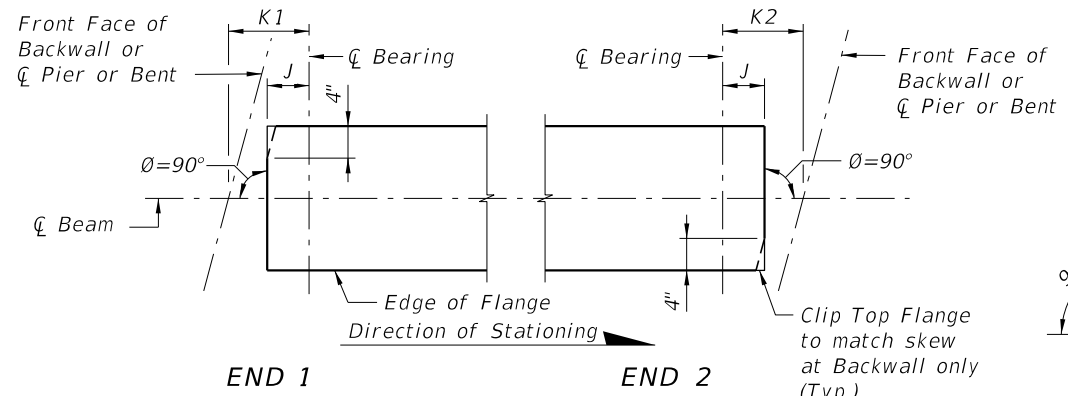
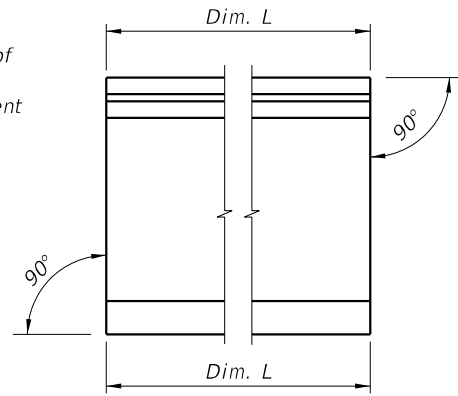


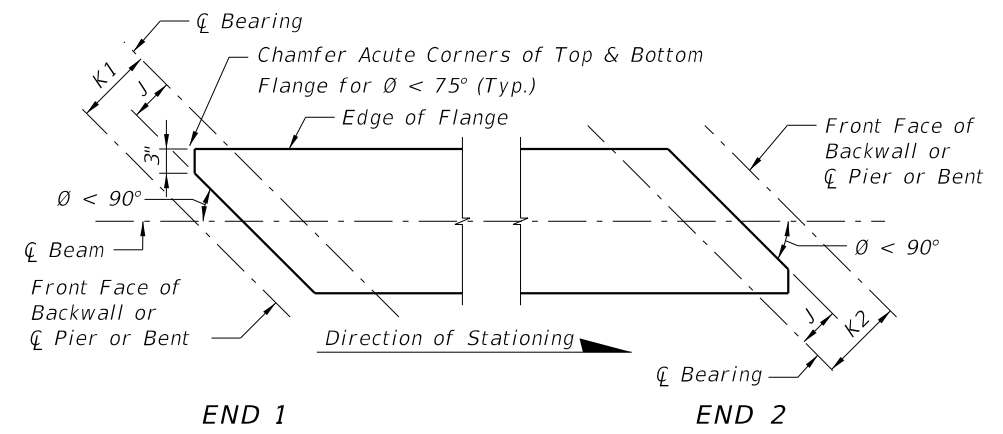
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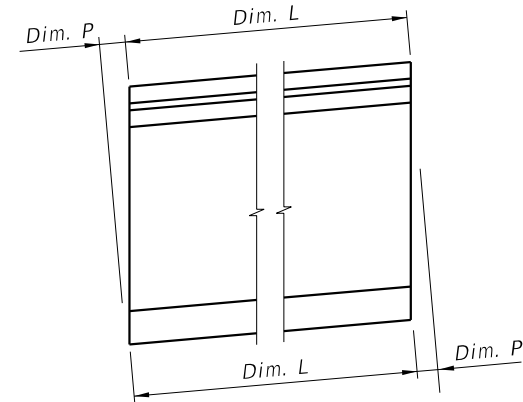
**CASE 1**  
(Standard Orientation for New Construction)



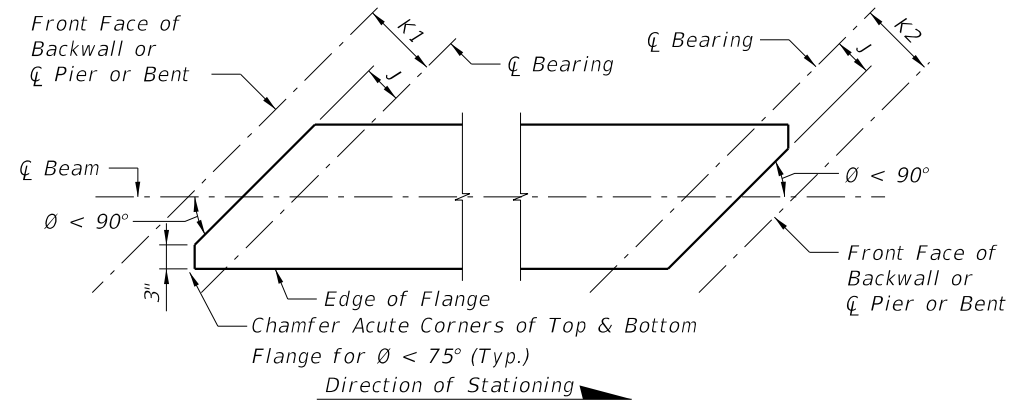
**CONDITION 1**  
(Dim P = 0.0)



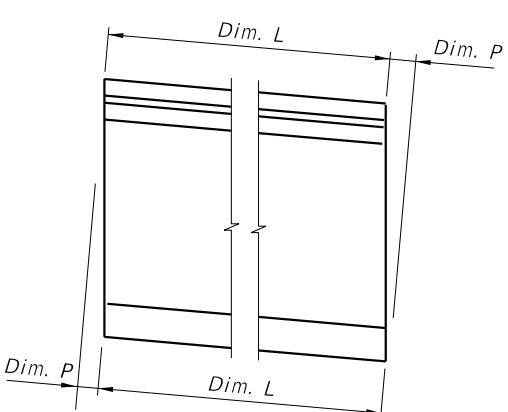
**CASE 2**  
(Special Orientation for Widening)



**CONDITION 2**



**CASE 3**  
(Special Orientation for Widening)



**CONDITION 3**

**SCHEMATIC PLAN VIEWS AT BEAM ENDS**

**SCHEMATIC END ELEVATIONS OF BEAMS**  
(Showing Vertical Bevel of Beam End)

**BEAM NOTES**

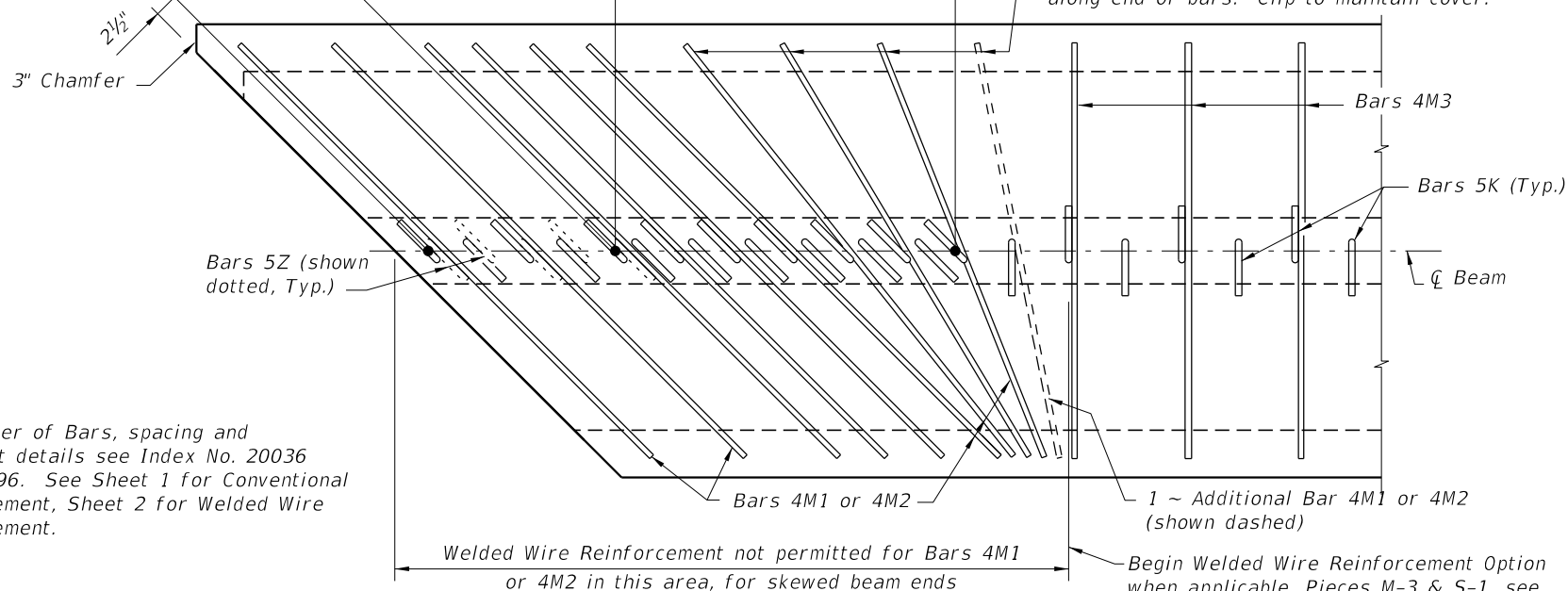
- All bar dimensions are out-to-out.
- Place one (1) Bar 5K or 5Z at each location as detailed alternating the direction of the ends for each bar (see "ELEVATION AT END OF BEAM", Index Nos. 20036, 20045, 20054, 20063, 20072, 20078, 20084 and 20096).
- Strands N shall be ASTM A416, Grade 270, seven-wire strands 3/8" Ø or larger, stressed to 10,000 lbs. each.
- Cut wedge to recess Prestressing Strands at the end of the beam after detensioning without damaging the surrounding concrete. See STRAND RECESS DETAIL on Sheet 2.
- Epoxy coat ends of beams, including clipped and chamfer surfaces, with two layers of Type F-1 epoxy compound within 7 days of detensioning. Prepare concrete surface and apply in accordance with the manufacturer's recommendations. The finish thickness of the epoxy coating must be a minimum 1/16".
- Unless otherwise noted, the minimum concrete cover for reinforcing steel shall be 2".
- At the Contractor's option, welded deformed wire reinforcement may be used in lieu of Bars 3D, 5K, 4M, and 5Z as shown on the Standard Details for each beam size. Welded deformed wire reinforcement shall conform to AASHTO M221, with a minimum yield strength of 75 ksi.
- Safety Sleeves or other Safety Line Anchorage Devices are permitted in the top flange. One Safety Sleeve alternative is provided herein as 2 1/2" NPS x 5" Sch. 40 PVC Pipe with Cap installed 2'-0" from ends of beams and spaced on 8'-0" (Max.) centers. Holes shall be free of debris and water prior to casting deck.
- For beams with skewed end conditions, the end reinforcement, 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", shall be placed parallel to the skewed end of the beam. Bars 3D3, 5K and 4M3 located beyond the limits of Bars 3C shall be placed 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 Number Required on the "BILL OF REINFORCING STEEL". For placement locations, see "SKEWED BEAM END DETAILS". Adjust the dimensions of Bars 3C1, 3C2, 3D1, 3D2, 4M1 and 4M2 as shown on the "BENDING DIAGRAM" for skewed end conditions.
- Placement of Bars 3C1, 3D1 and 4M1 correspond to END 1, and Bars 3C2, 3D2 and 4M2 correspond to END 2. END 1 and END 2 are shown on the beam "ELEVATION".
- For Beams with vertically beveled end conditions, place first row of Bars 3C1, 3C2, 3D1, 3D2, 5K, 5Y and 5Z parallel to the end of the beam. Progressively rotate remaining bars within the limits of Bars 5Z until vertical by adjusting the spacing at the top of beam up to a maximum of 1". For welded deformed wire reinforcement, cut top cross wire and rotate bars as required or reduce end cover at top of the beam to minimum 1".
- For beams with skewed end conditions, welded deformed wire reinforcement shall not be used for end reinforcement (Bars 3D1, 3D2, 4M1 and 4M2).
- Bars 5K and 5Z shall be placed and tied to the fully bonded strands in the bottom or center row (see "STRAND PATTERN" on the Table of Beam Variables in Structures Plans). At the Contractor's option the length of the bottom legs of Bars 5K and 5Z may be extended to facilitate tying to the exterior strands. For welded deformed wire reinforcement, supplemental transverse #4 bars are permitted to support Pieces K & S under the cross wires on the bottom row of strands.
- At the Contractor's option, 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.
- For referenced Dimensions, Angles and Case Numbers, see the Table of Beam Variables in Structures Plans.

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						20010	1

Bars 5K spaced perpendicular to end of beam @ 3 1/2". Skewed Bars 5Z, 4M1 or 4M2 placed with Bars 5K \*

Bars 5K spaced along  $\bar{C}$  Beam @ 3". Bars 4M1 or 4M2 placed with alternate Bars 5K \*

Rotate and flare Bars 4M1 or 4M2 and additional Bar 4M1 or 4M2 equally as required to maintain a 1'-0"  $\pm$  Max. spacing along end of bars. Clip to maintain cover.

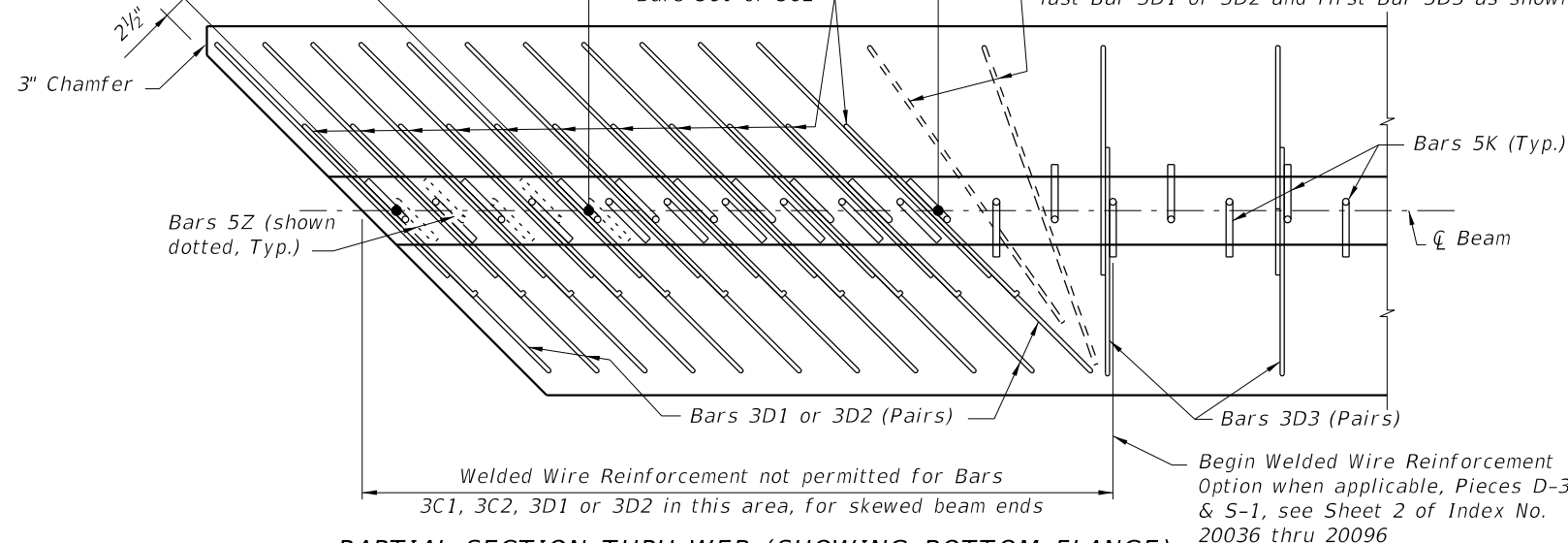


**PARTIAL PLAN VIEW (SHOWING TOP FLANGE)**  
(End 1 Shown, End 2 Similar)  
(Bars 5A, 4L, 5Y & Strands N not shown for clarity)

Bars 5K spaced perpendicular to end of beam @ 3 1/2". Skewed Bars 5Z, 3D1 or 3D2, 3C1 or 3C2 placed with Bars 5K \*

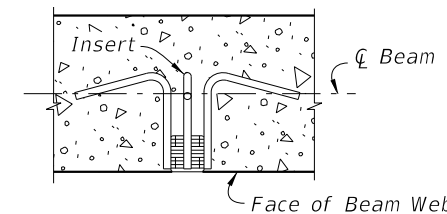
Bars 5K spaced along  $\bar{C}$  Beam @ 3". Bars 3D1 or 3D2, 3C1 or 3C2 placed with alternate Bars 5K \*

1 ~ Additional Bar 3D1 or 3D2 for Skews  $\leq 10^\circ$  or 2 ~ Additional Bars 3D1 or 3D2 for Skews  $> 10^\circ$  (shown dashed) rotate and space equally between last Bar 3D1 or 3D2 and first Bar 3D3 as shown



**PARTIAL SECTION THRU WEB (SHOWING BOTTOM FLANGE)**  
(End 1 Shown, End 2 Similar)  
(Bars 4L, Bars 5Y & Strands not shown for clarity)

**SKewed BEAM END DETAILS FOR WIDENING EXISTING BRIDGES**  
(Florida-I 36 Beam shown, others similar)

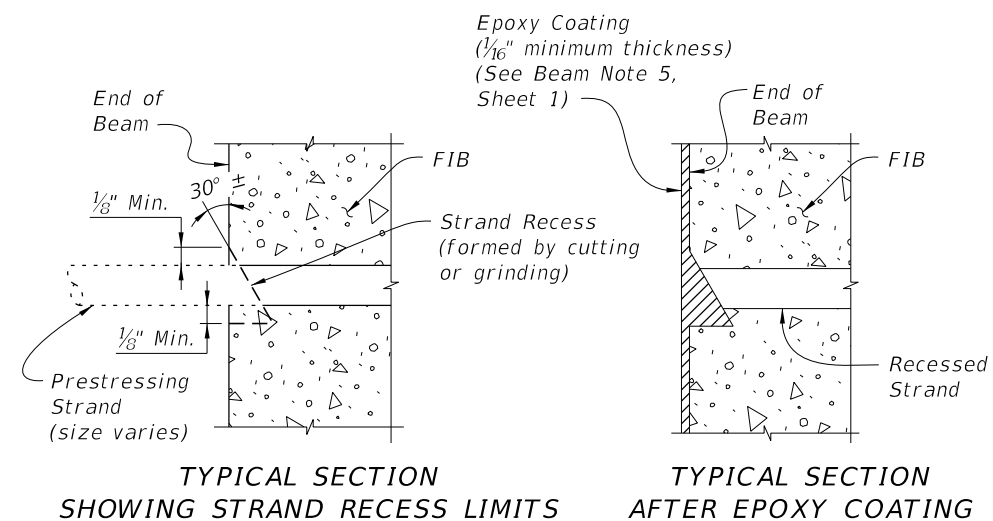


**PLAN SECTION THRU BEAM WEB AT INSERT FOR DIAPHRAGM REINFORCING**  
(When Intermediate Diaphragms are Required by Design)

**INSERT NOTES**

1. Provide 1"  $\bar{O}$ , zinc-electroplated, ferrule wing nut or coil inserts, UNC threads, 1/0 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.

**INSERT DETAIL**



**TYPICAL SECTION SHOWING STRAND RECESS LIMITS**

**TYPICAL SECTION AFTER EPOXY COATING**

**STRAND RECESS DETAIL**

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LAST REVISION	DESCRIPTION:	 <b>FDOT DESIGN STANDARDS</b> FY 2012/2013	<b>TYPICAL FLORIDA-I BEAM</b> DETAILS AND NOTES	INDEX NO.	SHEET NO.
01/01/12				20010	2