Description: AASHTO TYPE II Beam

Beam Notes:
1. All bar dimensions are out-to-out.
2. Place one (1) Bar 8K, or 5Z at each location as detailed alternating the direction of the ends for each bar (see "ELEVATION AT END OF BEAM", Sheet 3).
3. Strands N shall be ASTM A416, Grade 270, seven-wire strands % Ø or larger, stressed to 10,000 lbs. each.
4. For beams with ends not to be encased in permanent concrete dia grammas, 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 4.
5. For beams with ends not to be encased in permanent concrete diagrams, protect end of recessed strands in accordance with Specification 450.
6. Unless otherwise noted, the minimum concrete cover for reinforcing steel shall be 2".
7. At the Contractor’s option, welded deformed wire reinforcement may be used in lieu of Bars 3D, 4K, and 5Z as shown on Sheet 4. Welded deformed wire reinforcement shall conform to AASHTO M221, with a minimum yield strength of 75 ksi.
8. Safety Line Anchorage Devices or sleeves are required and permitted in the top flange only to accommodate fall protection systems used during construction. See shop drawings for details and spacing of any required embedments.
9. For beams with skewed end conditions, the end reinforcement, defined as Bars 3D1, 3D2, 4K, 4Y and 5Z placed within the limits of Bars 3D in "ELEVATION AT END OF BEAM", shall be placed parallel to the skewed end of the beam. Bars 3D and 4K, located beyond the limits of Bars 3D shall be placed perpendicular to the longitudinal axis of the beam. For placement locations, see "SKEWED BEAM END DETAILS". Adjust the dimensions of Bars 3D1 and 3D2, as shown on the "BENDING DIAGRAM" for skewed end conditions.
10. Placement of Bars 3D1 correspond to END 1, and Bars 3C2, correspond to END 2. END 1 and END 2 are shown on the beam "ELEVATION".
11. For Beams with vertically beveled end conditions, place first row of Bars 3D1, 3D2, 4K, 4Y and 5Z parallel to the end of the beam. Progressively rotate remaining bars within the limits of Bars 3D and 4K as shown on the "BENDING DIAGRAM" for skewed end conditions.
12. For beams with skewed end conditions, welded deformed wire reinforcement shall not be used for end confinement reinforcement (Bars 3D1 and 3D2).
13. Bars 4K 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). For welded deformed wire reinforcement, supplemental transverse bars are permitted to support Pieces K & S under the cross wires on the bottom row of strands or Strands N.
14. At the Contractor’s option, Bars 3D1, 3D2 and 3D3 may be fabricated as a two-piece bar with a 1'-0" minimum lap splice of the bottom legs.
15. For referenced Dimensions, Angles and Case Numbers, see the Table of Beam Variables in Structures Plans.

Details and Notes:
- For beams with ends not to be encased in permanent concrete diagrams, protect end of recessed strands in accordance with Specification 450.
- Unless otherwise noted, the minimum concrete cover for reinforcing steel shall be 2".
- Safety Line Anchorage Devices or sleeves are required and permitted in the top flange only to accommodate fall protection systems used during construction. See shop drawings for details and spacing of any required embedments.
- For beams with skewed end conditions, the end reinforcement, defined as Bars 3D1, 3D2, 4K, 4Y and 5Z placed within the limits of Bars 3D in "ELEVATION AT END OF BEAM", shall be placed parallel to the skewed end of the beam. Bars 3D and 4K, located beyond the limits of Bars 3D shall be placed perpendicular to the longitudinal axis of the beam. For placement locations, see "SKEWED BEAM END DETAILS". Adjust the dimensions of Bars 3D1 and 3D2, as shown on the "BENDING DIAGRAM" for skewed end conditions.
- Placement of Bars 3D1 correspond to END 1, and Bars 3C2, 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 3D1, 3D2, 4K, 4Y and 5Z parallel to the end of the beam. Progressively rotate remaining bars within the limits of Bars 3D and 4K as shown on the "BENDING DIAGRAM" for skewed end conditions.
- For beams with skewed end conditions, welded deformed wire reinforcement shall not be used for end confinement reinforcement (Bars 3D1 and 3D2).
- Bars 4K 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). For welded deformed wire reinforcement, supplemental transverse bars are permitted to support Pieces K & S under the cross wires on the bottom row of strands or Strands N.
- At the Contractor’s option, Bars 3D1, 3D2 and 3D3 may be fabricated as a two-piece bar with a 1'-0" minimum lap splice of the bottom legs.
- For referenced Dimensions, Angles and Case Numbers, see the Table of Beam Variables in Structures Plans.
**SKEWED BEAM END DETAILS FOR WIDENING EXISTING BRIDGES**

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

*For number of Bars, spacing and placement details see Sheet 3. See Sheet 3 for Conventional Reinforcement, Sheet 4 for Welded Wire Reinforcement.*

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

**STRAND RECESS DETAIL**

**INSERT DETAIL**

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

**INSERT NOTES**

1. Provide 1" Ø, zinc-electroplated, ferrule wing nut or coil inserts, UNC threads, 1/20 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.
ALTERNATE REINFORCING STEEL (WELDED WIRE REINFORCEMENT) DETAILS

PARTIAL SECTION AT CENTER BEAM

PIECES S-1, S-2, S-3 or S-4
(2 Required Each Piece)

W12.4 (Piece K-1)
W10 (Pieces K-2 & S)
D31 (Piece K-1)
D16 (Pieces K-2 & S)
W12.4 (Piece K-2)
W10 (Pieces K-2 & S)

PIECES S

PIECES K & S

END VIEW

PIECE K-1
(Aligned EF)
(4 Required - 2 Pairs)

PIECE K-2
(FF Shown Solid,
BF Shown Dashed)
(4 Required)

PIECE S1, S-2, S-3 or S-4
(2 Required Each Piece)

NOTES:

a. See Sheet 3 for placement details & Table of Beam Variables in Structures Plans for variables S1, S2, S3, S4 & V1.
b. Place Conventional Reinforcement Bars 5A as shown on Sheet 3. Place additional Bars 4Y as shown in Section A-A for Welded Wire Reinforcement. Bars 5Z will not be used with the WWR Option.
c. Pieces may be fabricated in multiple length sections.
d. For beams with skewed end conditions, Pieces D-1 & D-2 shall not be used. Conventional Reinforcement Bars D1 & D2 shall be used. See Sheet 2 New Details and Sheet 1 Note 9 for placement details. Shift Pieces K & Bars 4Y to accommodate skewed end conditions and align with Bars D.

LEGEND:

FF = Front Face
BF = Back Face
EF = Each Face
S = Single Mat
Tied to Strands at ℄ Beam
2" Cover

PARTIAL BEAM END VIEW
(Conventional Reinforcing Bars A, Y and Bottom Strands not Shown for Clarity)

FOR WELDED WIRE REINFORCEMENT

SECTIONS

SECTION A-A

STANDARD DETAILS

AASHTO TYPE II BEAM

07/01/13

FDOT 2014
DESIGN STANDARDS

INDEX NO.
20120

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REVISION
07/01/13

DESCRIPTION

LAST REV

REV

2

07/01/13