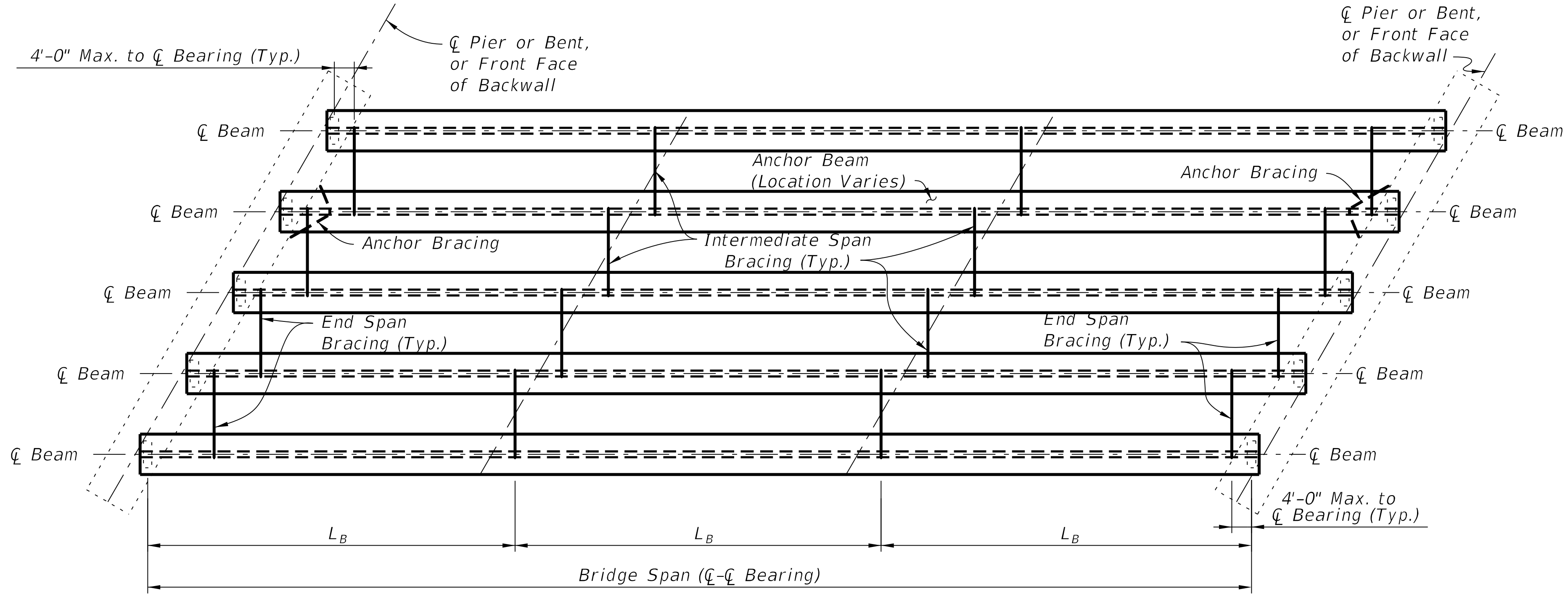
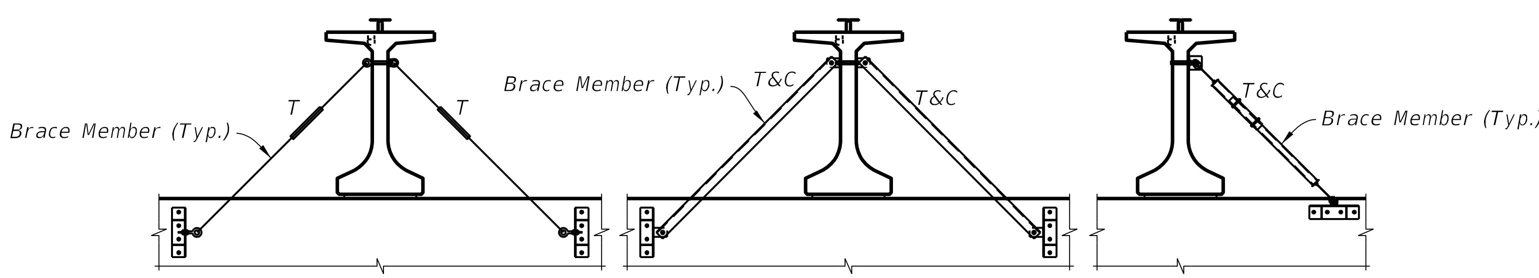
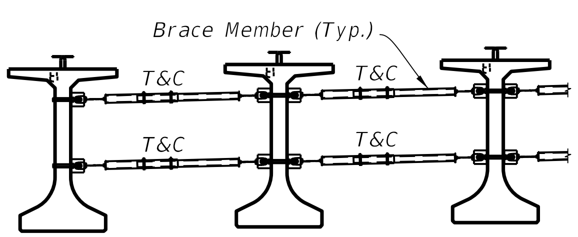


PRESTRESSED BEAM TEMPORARY BRACING PLAN VIEW
(Skewed Condition Shown, Non-skewed Condition Similar)



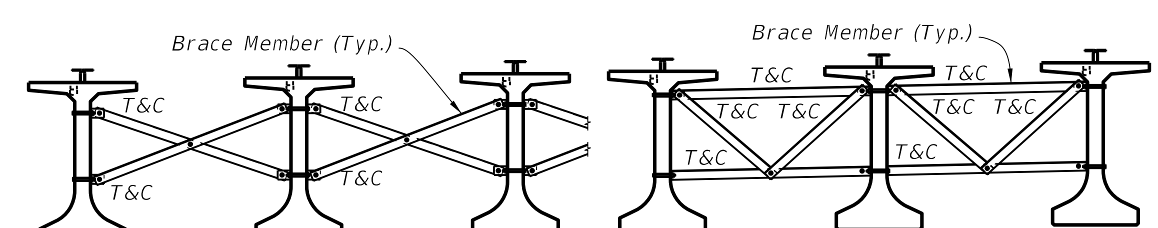
EXAMPLE ANCHOR BRACING TYPICAL SECTIONS
(Beam Ends Only)



EXAMPLE END SPAN BRACING

LEGEND:

T = Tension Member
T&C = Tension & Compression Member



EXAMPLE END SPAN OR INTERMEDIATE SPAN BRACING

NOTES:

1. The 'PRESTRESSED BEAM TEMPORARY BRACING PLAN' is to be used in conjunction with the 'TABLE OF TEMPORARY BRACING VARIABLES' in the Structures Plans. The brace locations and quantities shown in the plan view are schematic only, and the actual brace locations and quantities should be determined from the 'TABLE OF TEMPORARY BRACING VARIABLES' in the Structures Plans.

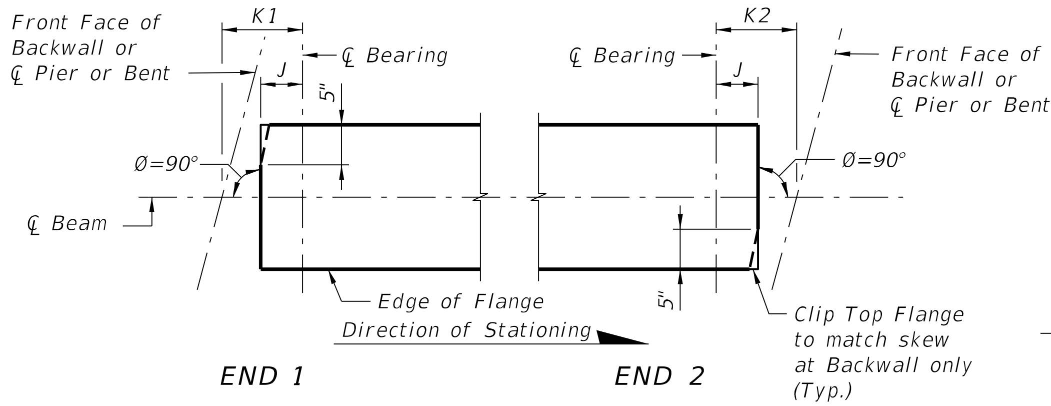
2. The bracing members shown in the sections are schematic only, and are meant to show geometry in which bracing should be placed. The bracing members and connections shall be designed and detailed by the Contractor. Any of the geometric configurations shown in the bracing sections are acceptable. The bracing may be attached through the web or to the flanges of the beam, as necessary. The bracing shall be positively and securely connected to each beam, and shall not be designed to exert any vertical force on the outer edge of the top flange. All bolt holes in beams are to be preformed and filled after use. All bracing is to be placed perpendicular to beams.

3. The anchor beam is a beam which has anchor bracing at its support locations. It is to be set first, and its location may vary. All subsequent beams are to be braced against the Anchor Beam sequentially. The Anchor brace may be located at an exterior girder provided that all required bolt clear distances are met and overhang bracing is not impacted. Anchor bracing may be inclined, as shown in the plan view, or may be installed vertically.

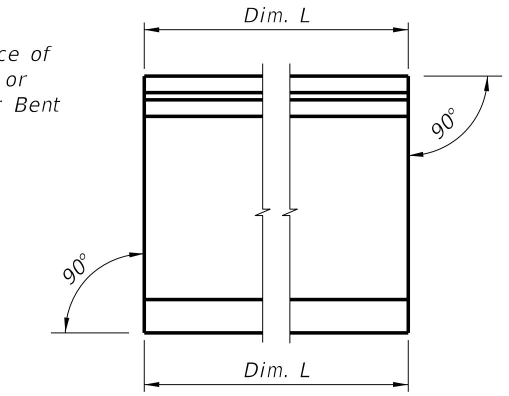
4. Overhang bracing requirements are neither specified here nor in the 'TABLE OF TEMPORARY BRACING VARIABLES.' It is the Contractor's responsibility to design overhang bracing which does not cause excessive deflection or rotation of the exterior girder, or cause the girder stresses to exceed stress limits per the FDOT Structures Manual.

5. The Contractor shall submit documentation required by the Specifications for Road and Bridge Construction, Section 5 for 'Beam and Girder Temporary Bracing.' If the Contractor elects to use the bracing requirements shown in the 'TABLE OF TEMPORARY BRACING VARIABLES,' the documentation shall include signed and sealed certification that the construction loads do not exceed those shown in the 'TABLE OF ASSUMED CONSTRUCTION LOADS' and signed and sealed design of bracing members and connections. If the Contractor elects to use a bracing scheme different from those shown in the 'TABLE OF TEMPORARY BRACING VARIABLES,' the documentation shall include signed and sealed calculation of the bracing requirements and design of bracing members and connections.

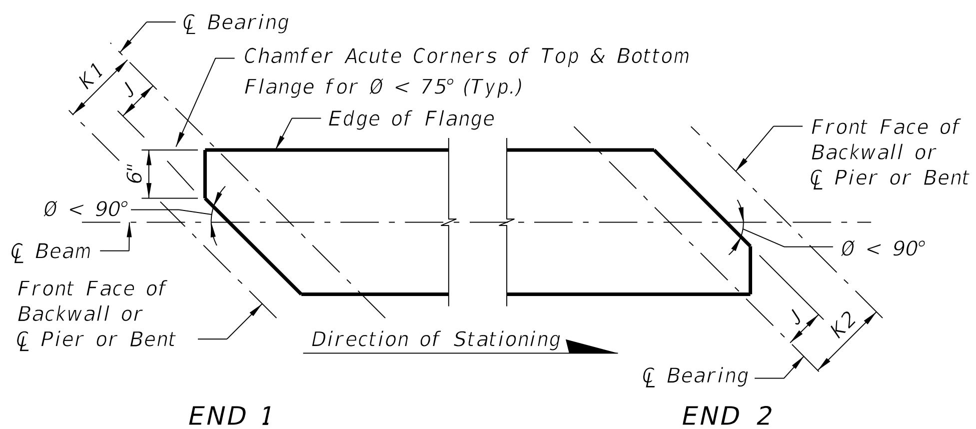
LAST REVISION	REVISION	DESCRIPTION:			INDEX NO.	SHEET NO.
07/01/13			FDOT 2015 DESIGN STANDARDS	PRESTRESSED I-BEAM TEMPORARY BRACING	20005	1 of 1



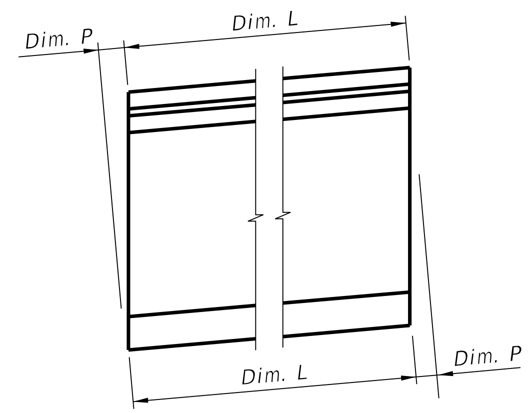
CASE 1
(Standard Orientation for New Construction)



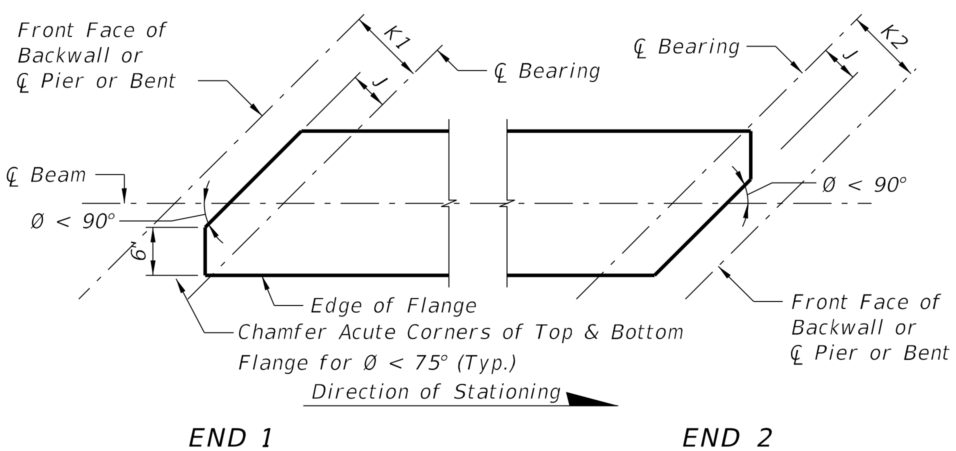
CONDITION 1
(Dim P = 0.0)



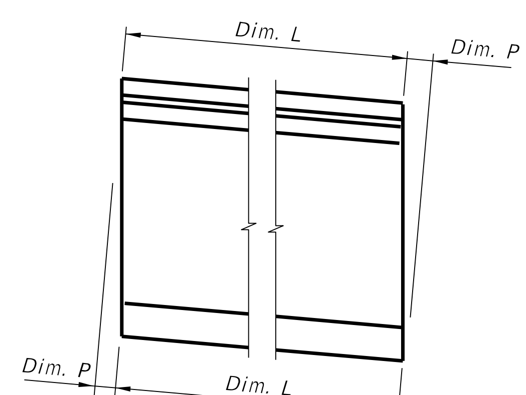
CASE 2
(Special Orientation for Widenings)



CONDITION 2



CASE 3
(Special Orientation for Widenings)



CONDITION 3

SCHEMATIC PLAN VIEWS AT BEAM ENDS

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

BEAM NOTES

1. All bar dimensions are out-to-out.
2. 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).
3. Strands N shall be ASTM A416, Grade 270, seven-wire strands $\frac{3}{8}$" Ø or larger, stressed to 10,000 lbs. each.
4. For beams with ends not to be encased in permanent concrete diaphragms, after detensioning cut wedge to recess Prestressing Strands at the end of the beam without damaging the surrounding concrete. See STRAND CUTTING AND PROTECTING DETAIL on Sheet 2.
5. For beams with ends not to be encased in permanent concrete diaphragms, protect end of recessed strands in accordance with Specification Section 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, 5K, 4M, and 5Z as shown on the Standard Details for each beam size. Welded deformed wire reinforcement shall meet requirements of Specification Section 931.
8. Safety Line Anchorage Devices or sleeves are required and permitted in the top flange only to accomodate 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 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.
10. 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".
11. 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".
12. For beams with skewed end conditions, welded deformed wire reinforcement shall not be used for end reinforcement (Bars 3D1, 3D2, 4M1 and 4M2) .
13. 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.
14. 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.
15. For referenced Dimensions, Angles and Case Numbers, see the Table of Beam Variables in Structures Plans.

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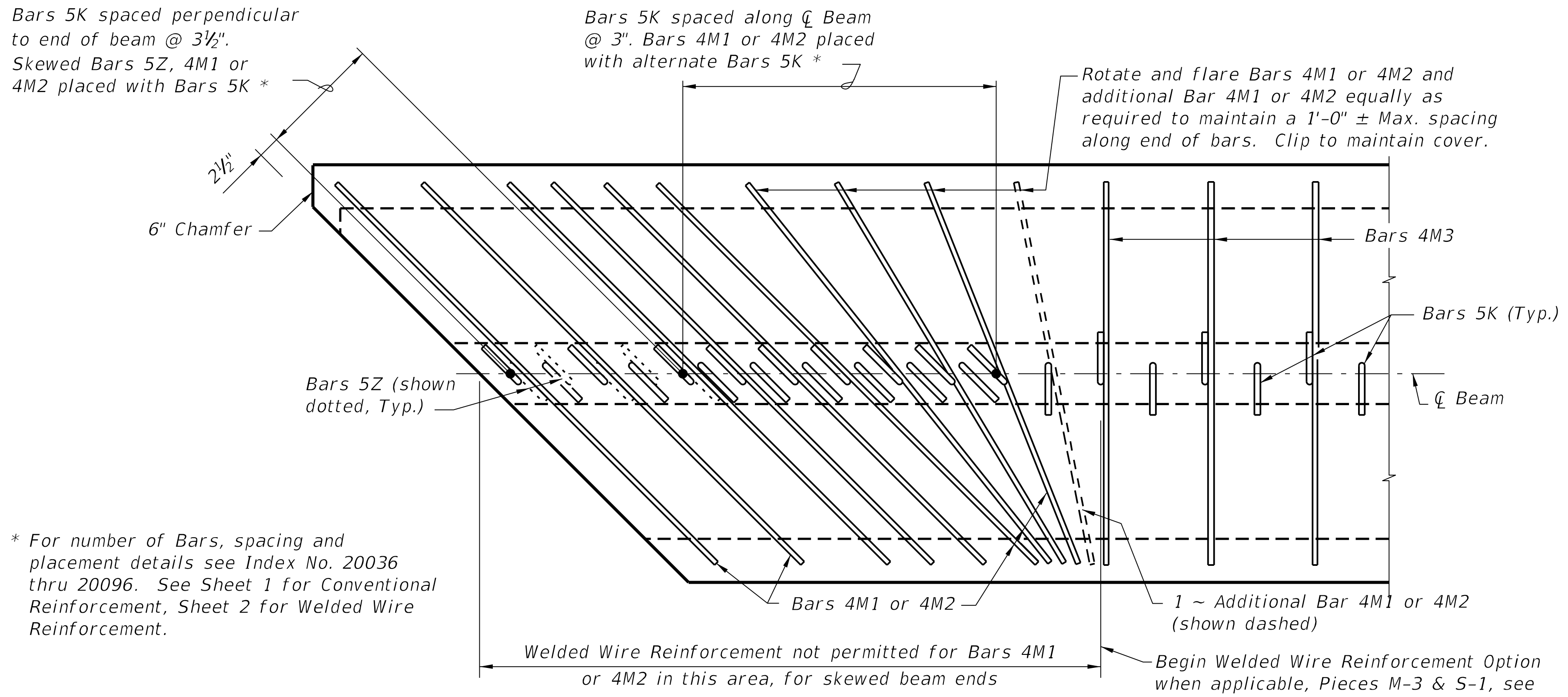
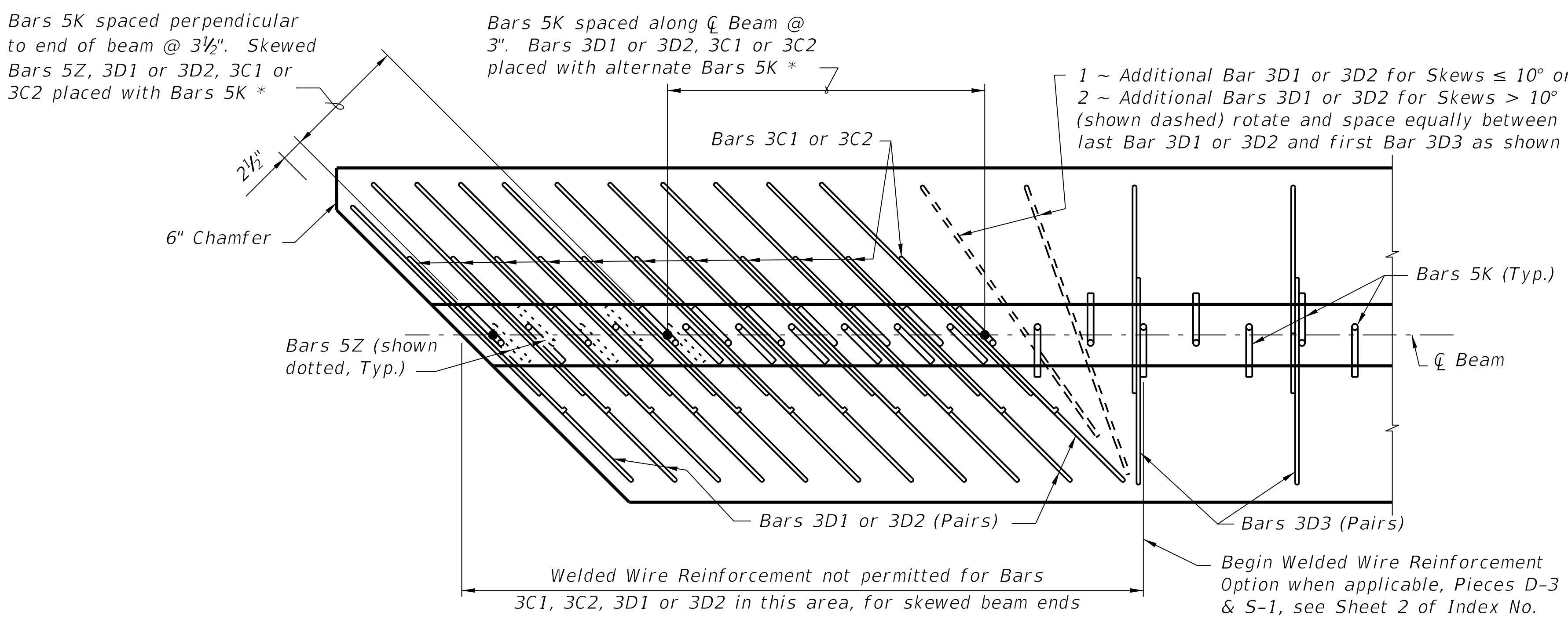


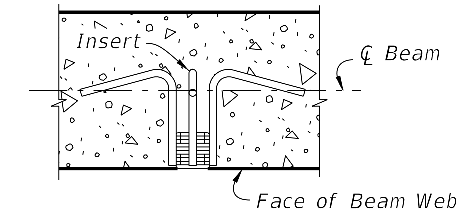
* For number of Bars, spacing and placement details see Index No. 20036 thru 20096. See Sheet 1 for Conventional Reinforcement, Sheet 2 for Welded Wire Reinforcement.

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



PARTIAL SECTION THRU WEB (SHOWING BOTTOM FLANGE)
(End 1 Shown, End 2 Similar)
(Bars 5Y, Strands, and Embedded Bearing Plate "A" not shown for clarity)

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

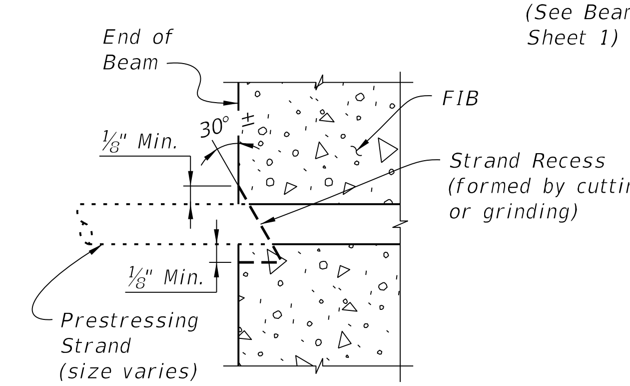


PLAN SECTION THRU BEAM WEB AT INSERT FOR DIAPHRAGM REINFORCING
(When Intermediate Diaphragms are Required by Design)

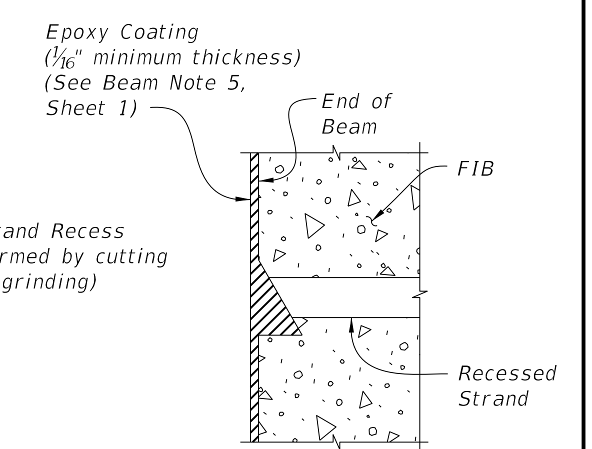
INSERT NOTES

1. Provide 1" Ø, 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 CUT STRAND RECESS LIMITS



TYPICAL SECTION
AFTER PROTECTING

STRAND CUTTING AND PROTECTING DETAIL

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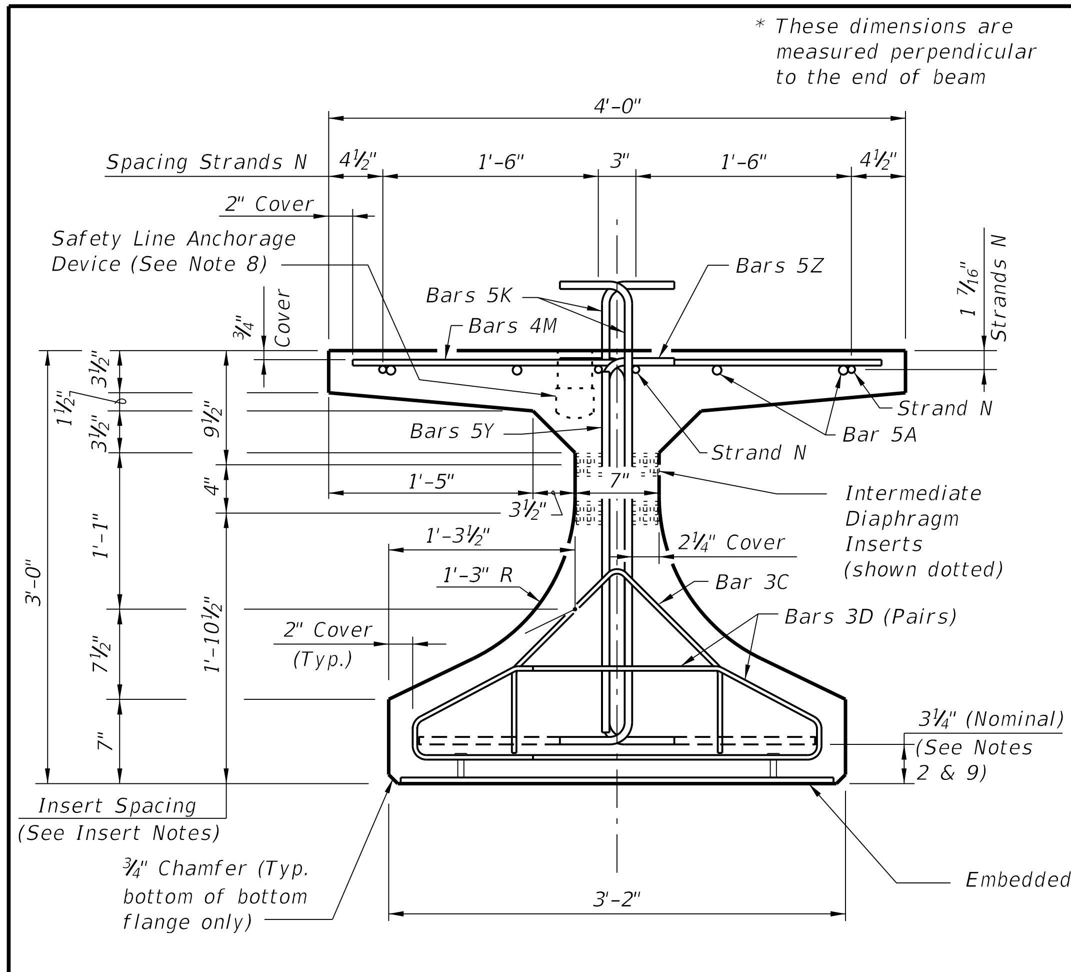
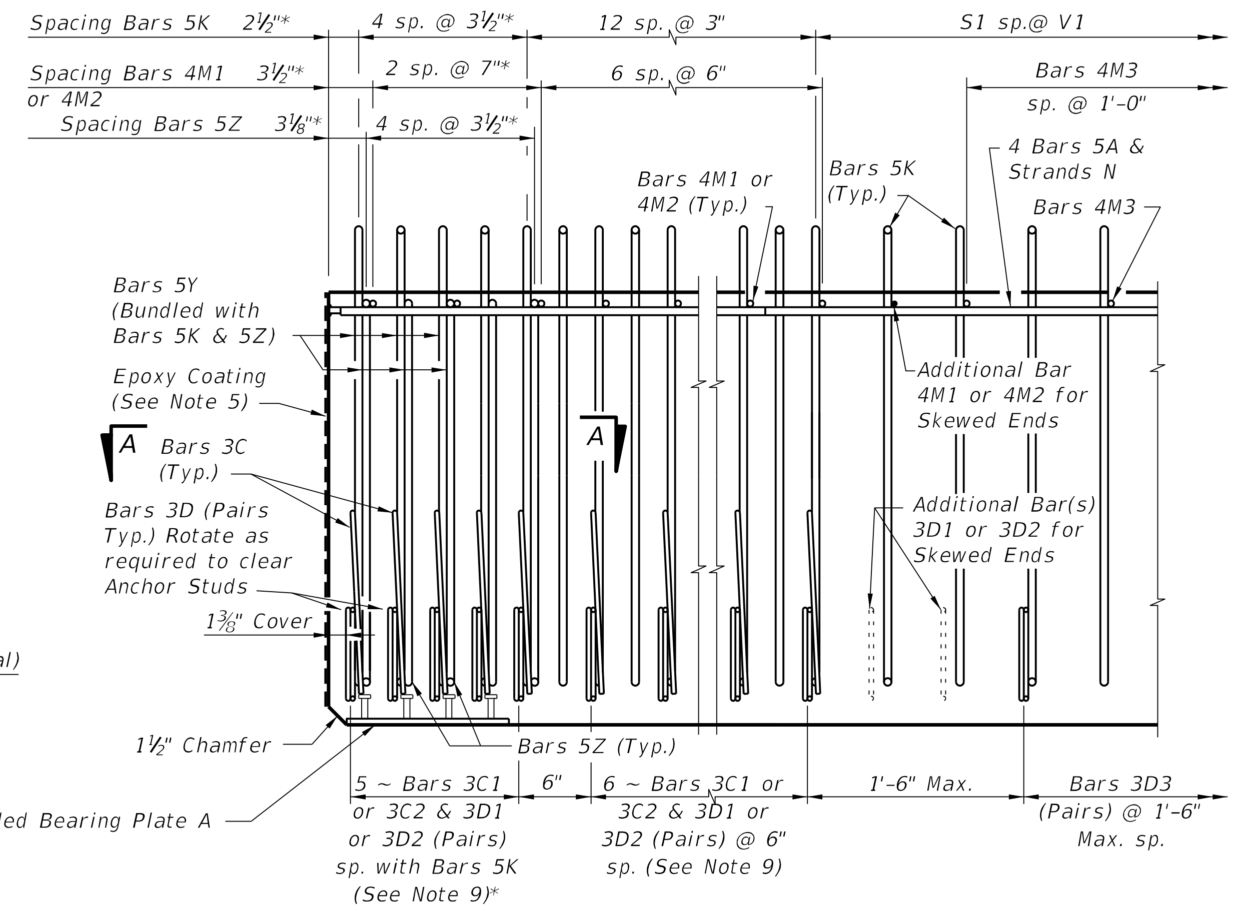
LAST REVISION	REVISION	DESCRIPTION:			INDEX NO.	SHEET NO.
07/01/14			FDOT 2015 DESIGN STANDARDS	TYPICAL FLORIDA-I BEAM DETAILS AND NOTES	20010	2 of 2



END VIEW



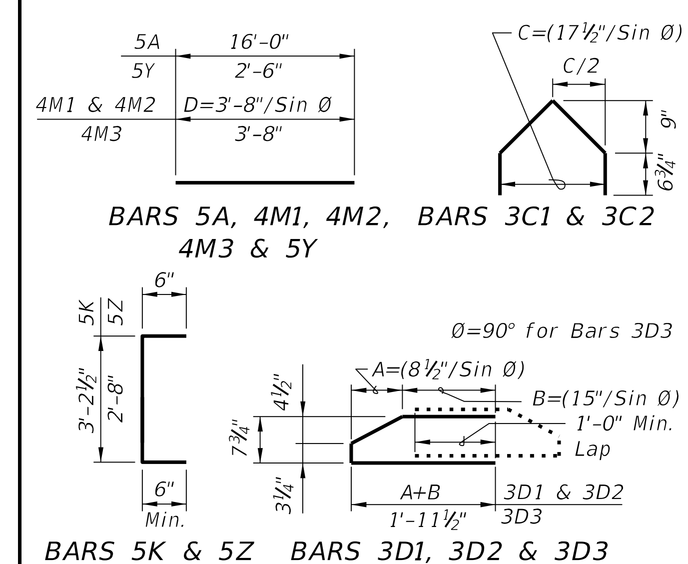
ELEVATION AT END OF BEAM
(Flanges Not Shown For Clarity)
(End 1 Shown, End 2 Similar)

CONVENTIONAL REINFORCING BAR BENDING DETAILS

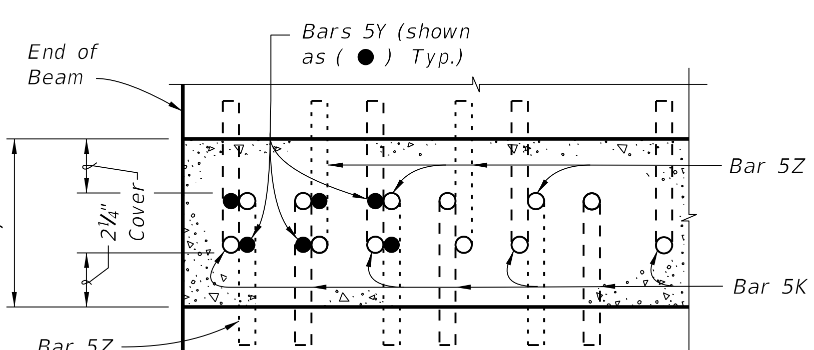
BILL OF REINFORCING STEEL

MARK	NOTE NUMBERS	SIZE	NUMBER REQUIRED	LENGTH (NOTE 1)
A	—	5	8	16'-0"
C1	9, 10 & 11	3	11 (End 1)	Varies
C2	9, 10 & 11	3	11 (End 2)	Varies
D1	9, 10, 11 & 14	3	22 (End 1)	Varies
D2	9, 10, 11 & 14	3	22 (End 2)	Varies
D3	9 & 14	3	See Table	4'-3"
K	2, 9, 11 & 13	5	See Table	4'-2"
M1	9 & 10	4	9 (End 1)	Varies
M2	9 & 10	4	9 (End 2)	Varies
M3	9	4	See Table	3'-8"
N	3 & 4	⅜" Ø Strand	4	Dim. L
Y	9 & 11	5	12	2'-6"
Z	2, 9, 11 & 13	5	10	3'-8"

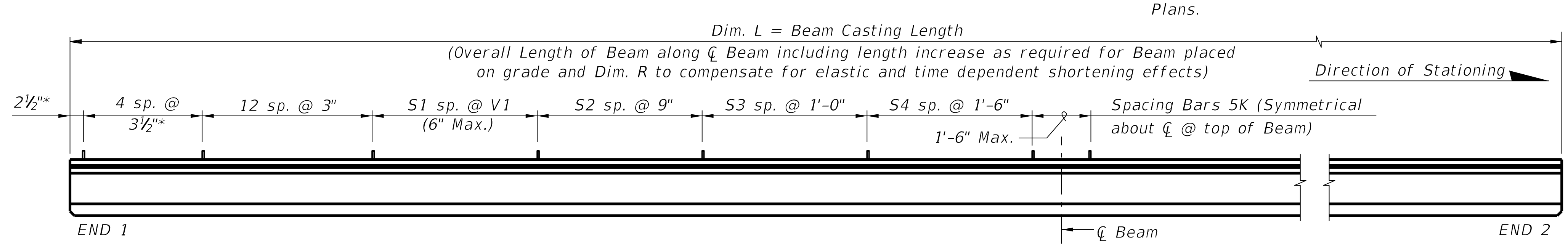
BENDING DIAGRAMS (See Note 1)



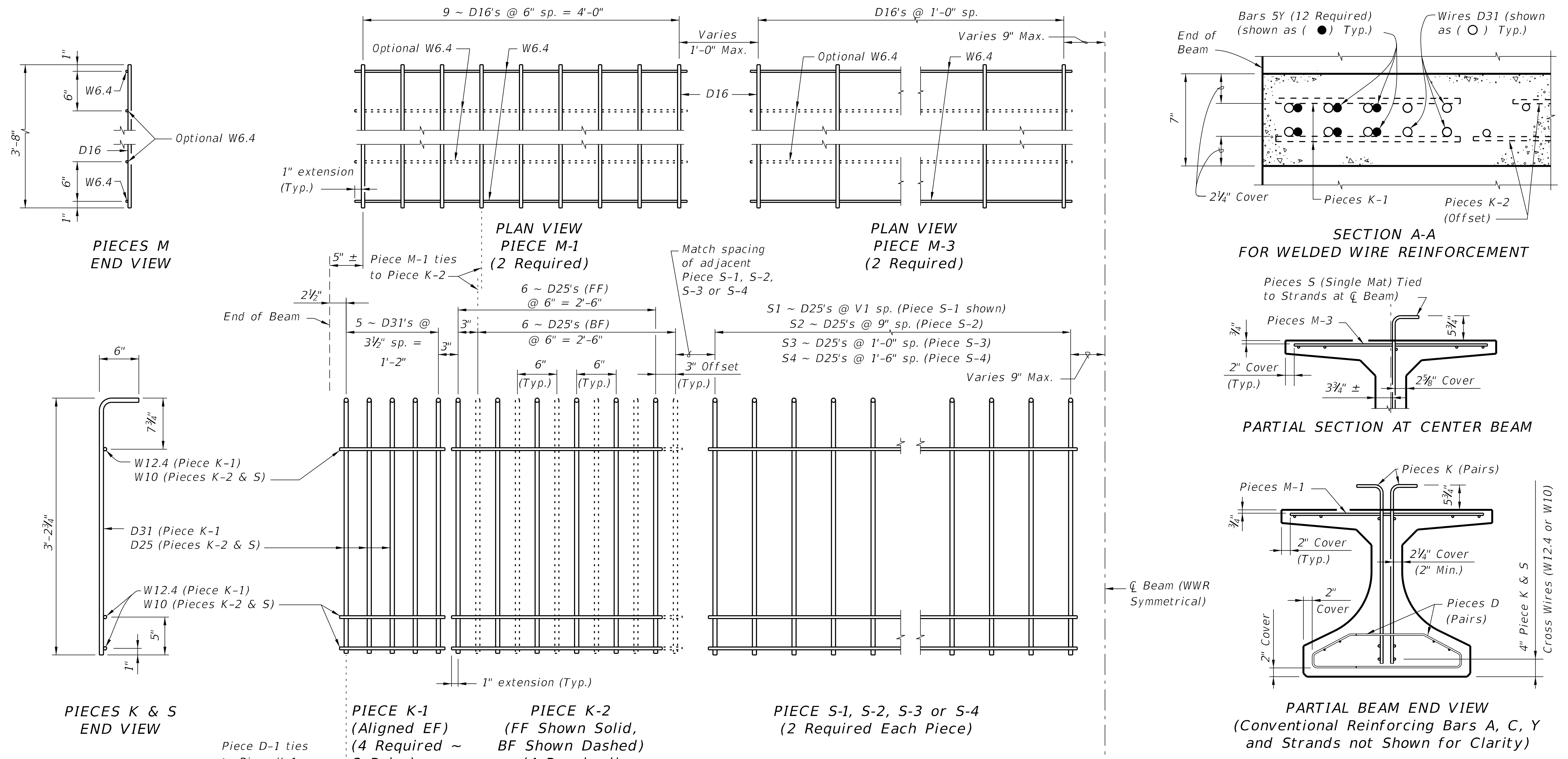
NOTES:
A. Work this Index with Index No. 20010 - Typical Florida-I Beam Details and Notes and the Florida-I Beam - Table of Beam Variables in Structures Plans.
B. For referenced notes, see Index No. 20010.
C. For Dimensions A, B, C, D, L, R & V1 and number of spaces S1 thru S4, see Florida-I Beam - Table of Beam Variables in Structures Plans.

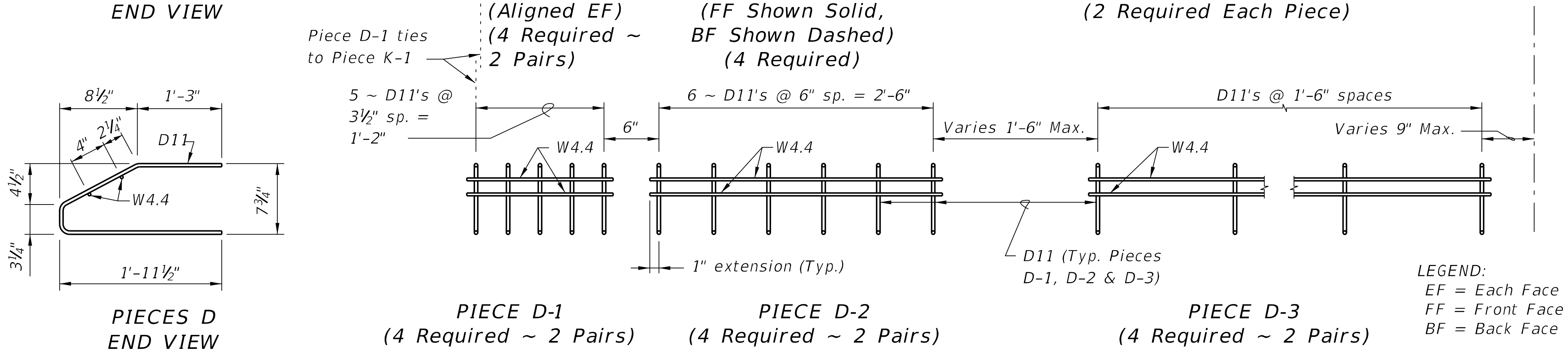


SECTION A-A FOR CONVENTIONAL REINFORCING
(Showing Bars 5K, 5Y & 5Z Only)



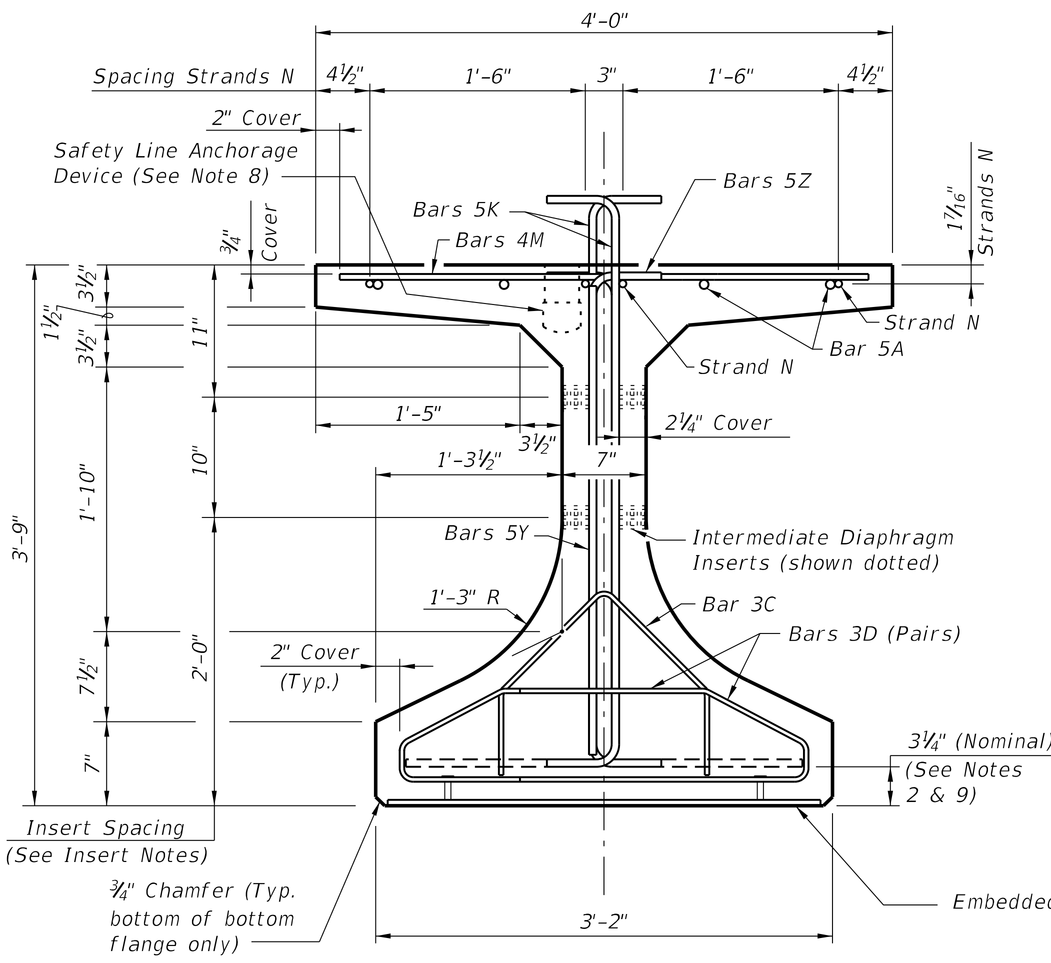
ELEVATION



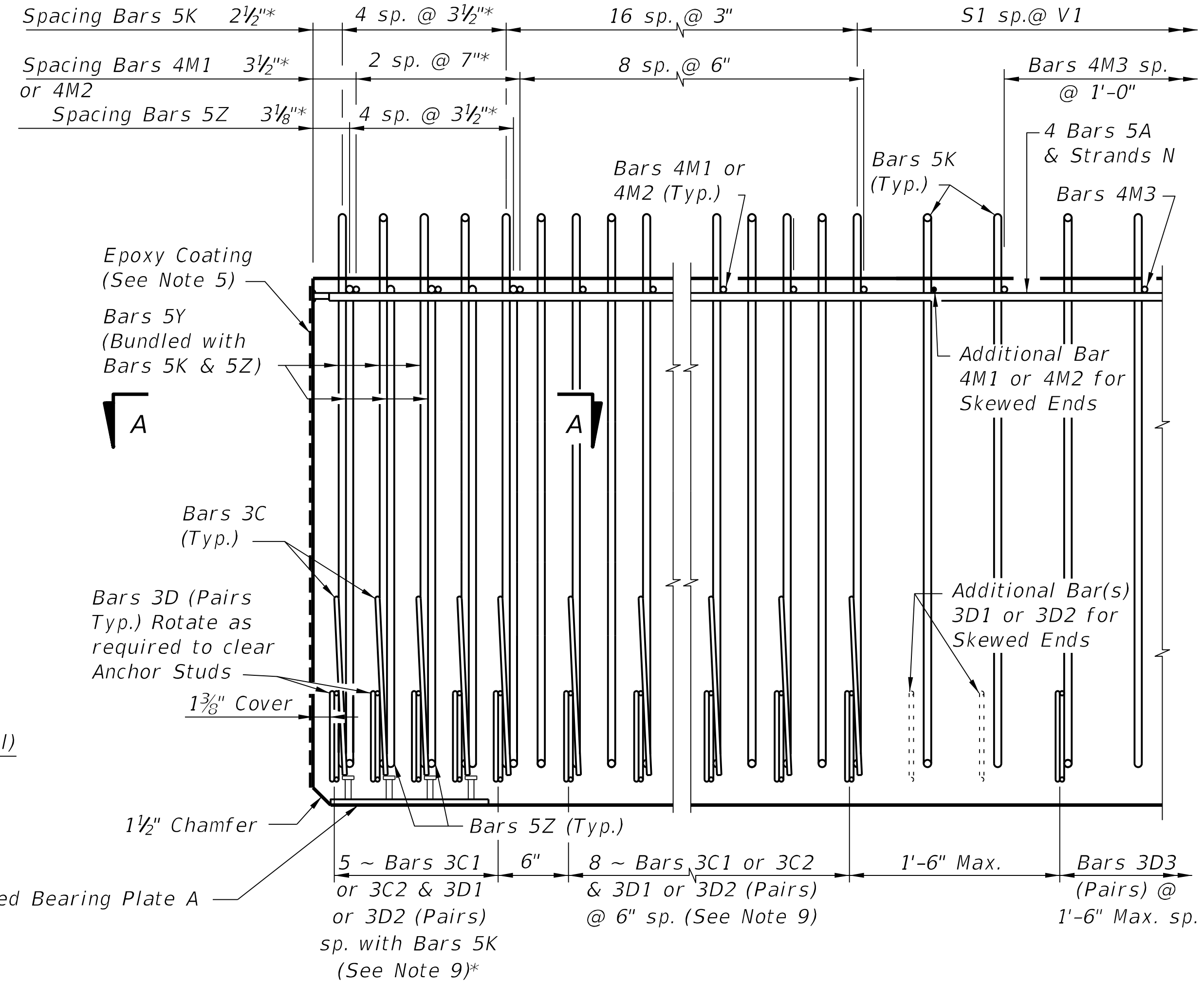


NOTES:

a. See Sheet 1 for placement details & Table of Beam Variables in Structures Plans for variables S1, S2, S3, S4 & V1.
b. Place Conventional Reinforcement Bars 5A & 3C as shown on Sheet 1. Place additional Bars 5Y 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 & M-1 shall not be used; Conventional Reinforcement Bars D1, D2, C1, C2, M1 & M2 shall be used. See Index No. 20010 Skew Details and Note 9 for placement details. Shift Pieces K & Bars 5Y to accommodate skewed end conditions and align with Bars C and D.



END VIEW



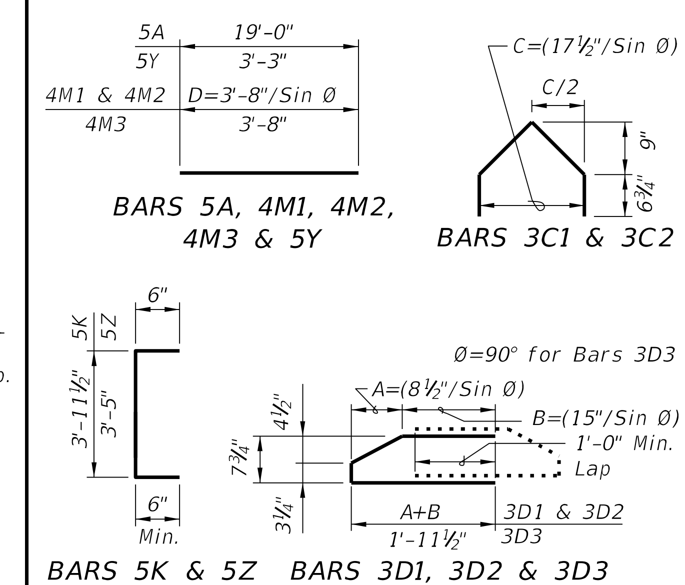
ELEVATION AT END OF BEAM
(Flanges Not Shown For Clarity)
(End 1 Shown, End 2 Similar)

CONVENTIONAL REINFORCING BAR BENDING DETAILS

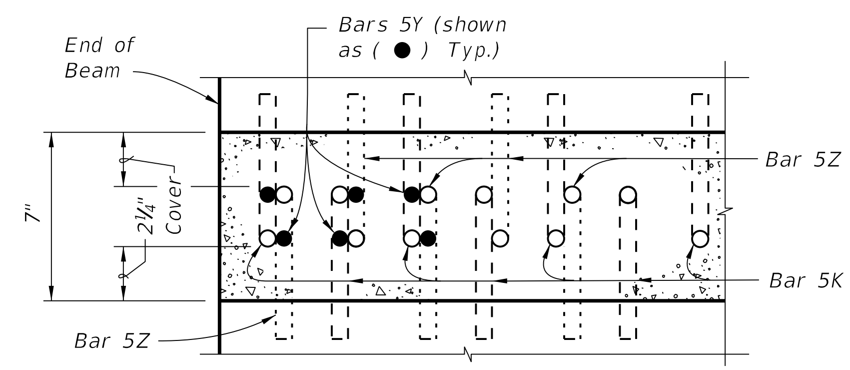
BILL OF REINFORCING STEEL

MARK	NOTE NUMBERS	SIZE	NUMBER REQUIRED	LENGTH (NOTE 1)
A	—	5	8	19'-0"
C1	9, 10 & 11	3	13 (End 1)	Varies
C2	9, 10 & 11	3	13 (End 2)	Varies
D1	9, 10, 11 & 14	3	26 (End 1)	Varies
D2	9, 10, 11 & 14	3	26 (End 2)	Varies
D3	9 & 14	3	See Table	4'-3"
K	2, 9, 11 & 13	5	See Table	4'-11"
M1	9 & 10	4	11 (End 1)	Varies
M2	9 & 10	4	11 (End 2)	Varies
M3	9	4	See Table	3'-8"
N	3 & 4	⅜" Ø Strand	4	Dim. L
Y	9 & 11	5	12	3'-3"
Z	2, 9, 11 & 13	5	10	4'-5"

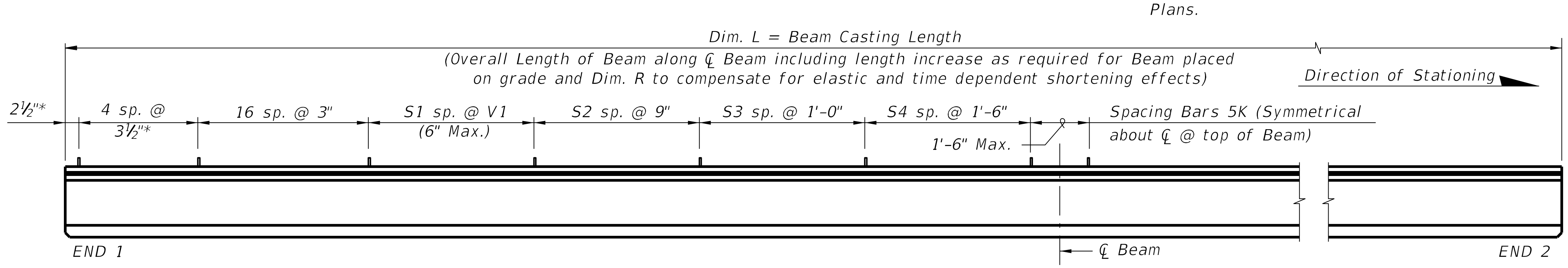
BENDING DIAGRAMS (See Note 1)



NOTES:
A. Work this Index with Index No. 20010 - Typical Florida-I Beam Details and Notes and the Florida-I Beam - Table of Beam Variables in Structures Plans.
B. For referenced notes, see Index No. 20010.
C. For Dimensions A, B, C, D, L, R & V1 and number of spaces S1 thru S4, see Florida-I Beam - Table of Beam Variables in Structures Plans.



SECTION A-A FOR CONVENTIONAL REINFORCING
(Showing Bars 5K, 5Y & 5Z Only)



ELEVATION

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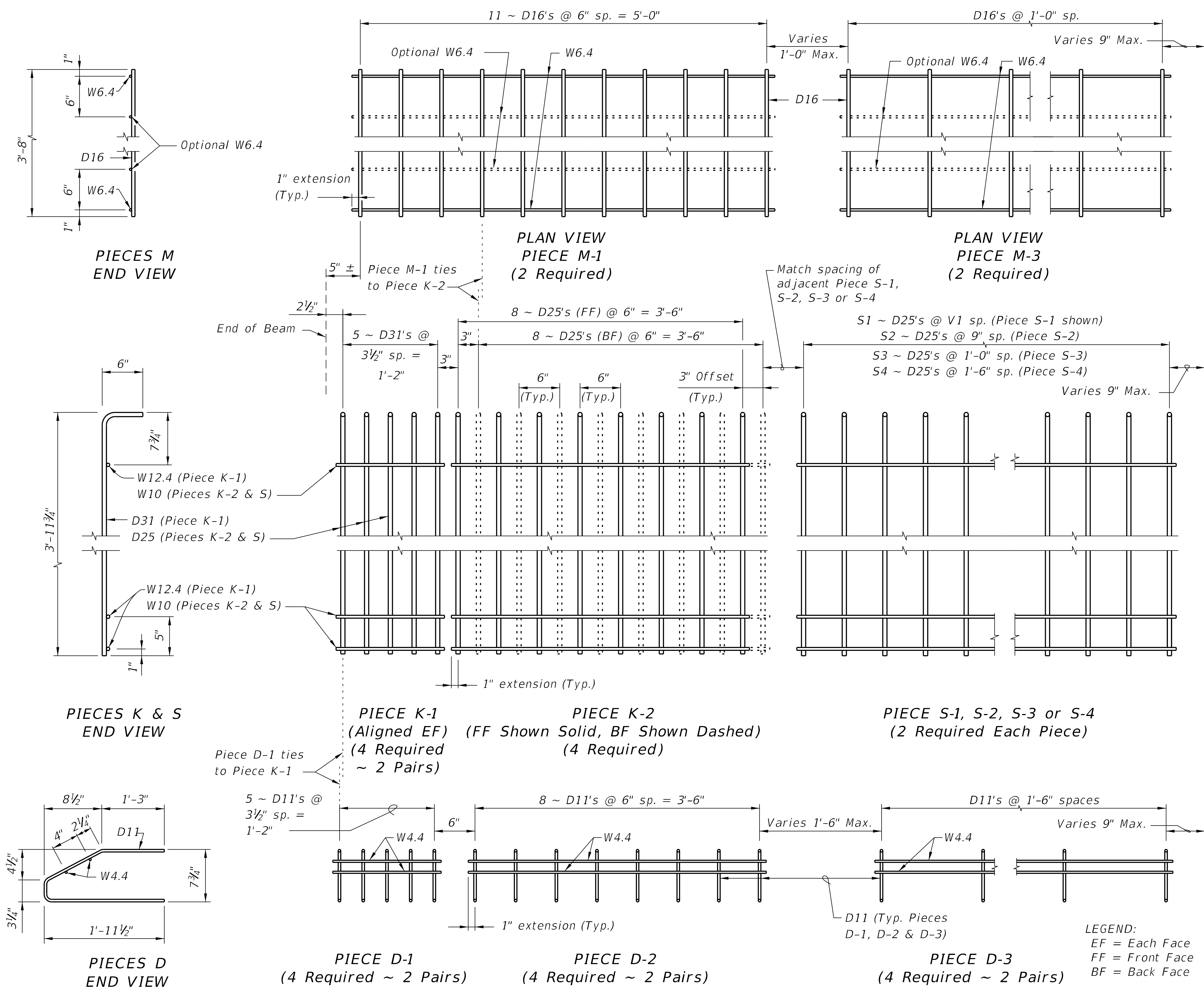
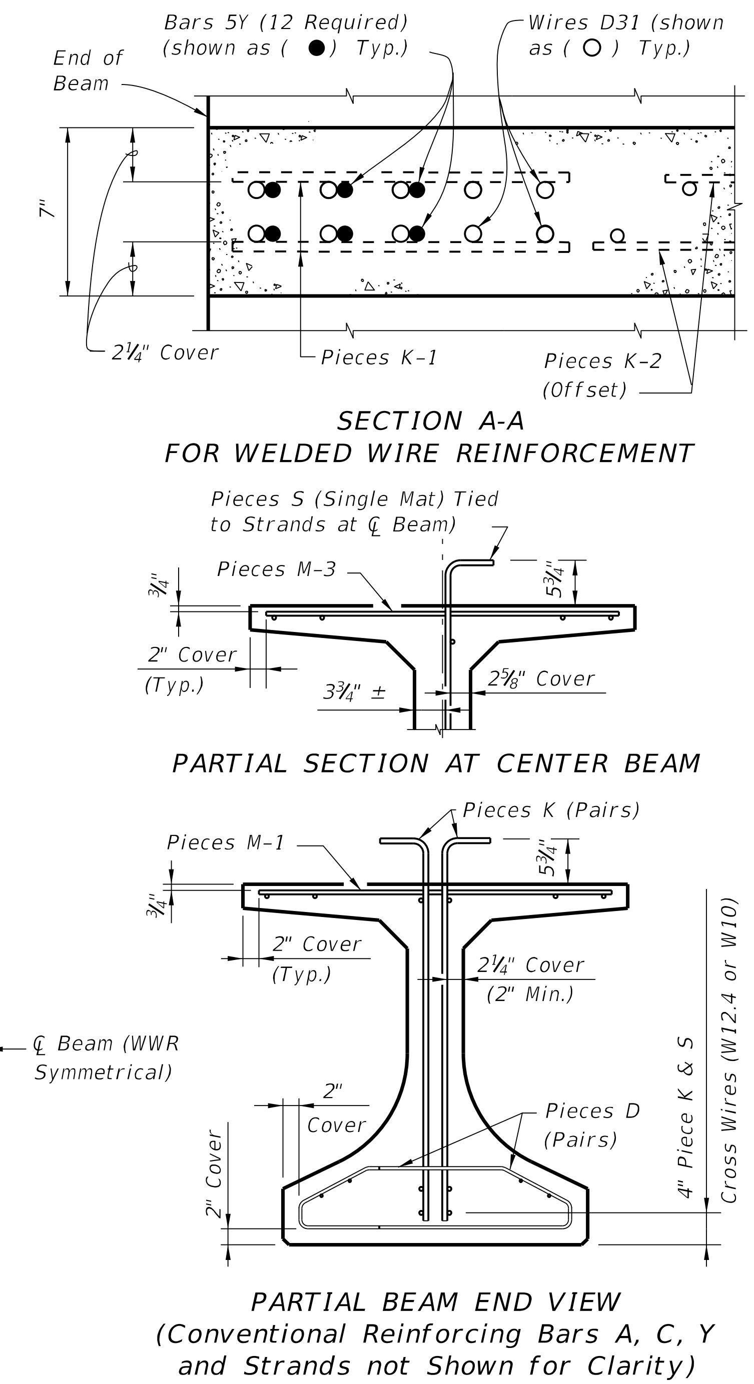
5/22/2014

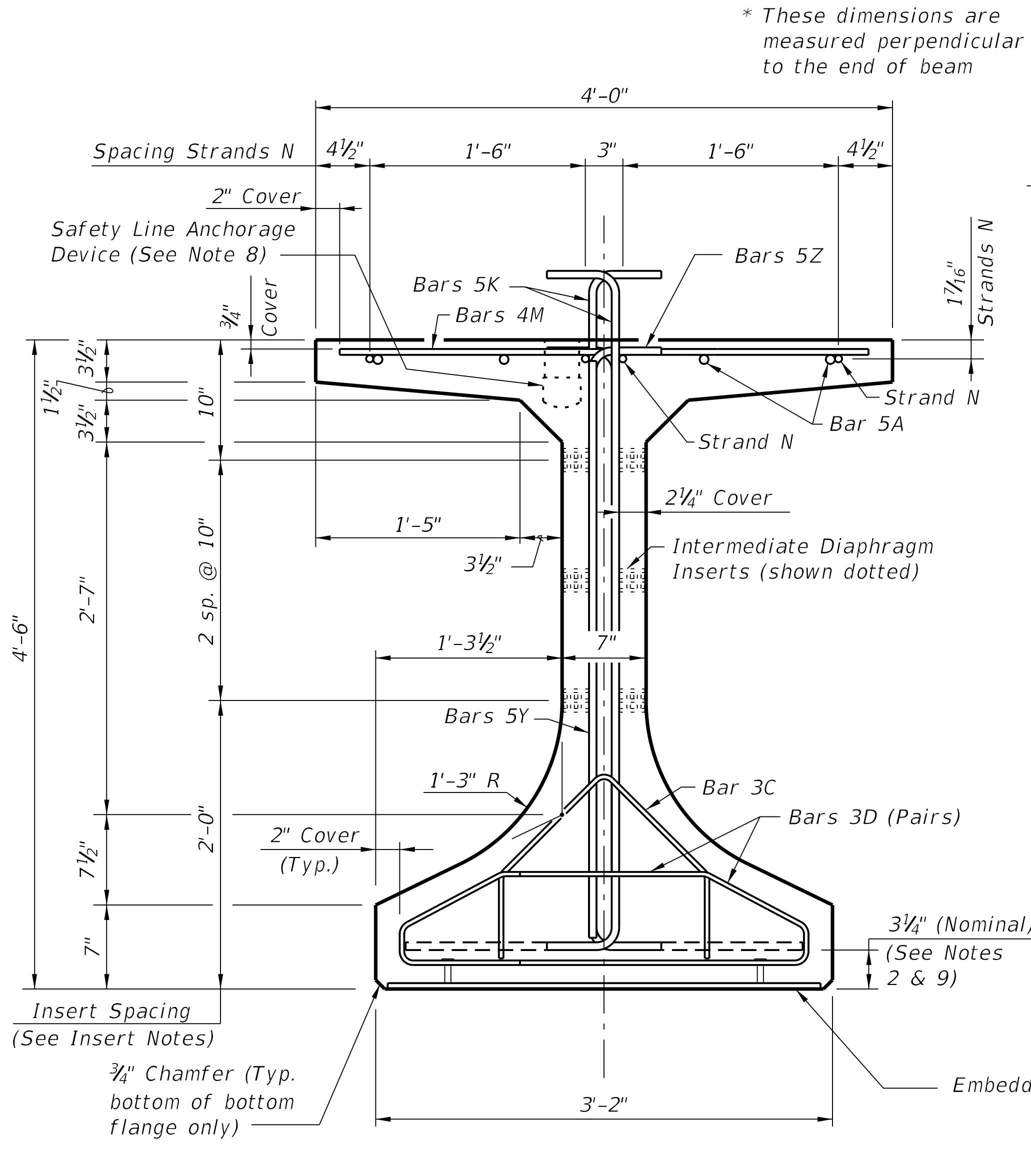
LAST REVISION	REVISION	DESCRIPTION:			INDEX NO.	SHEET NO.
07/01/12			FDOT 2015 DESIGN STANDARDS	FLORIDA-I 45 BEAM - STANDARD DETAILS	20045	1 of 2



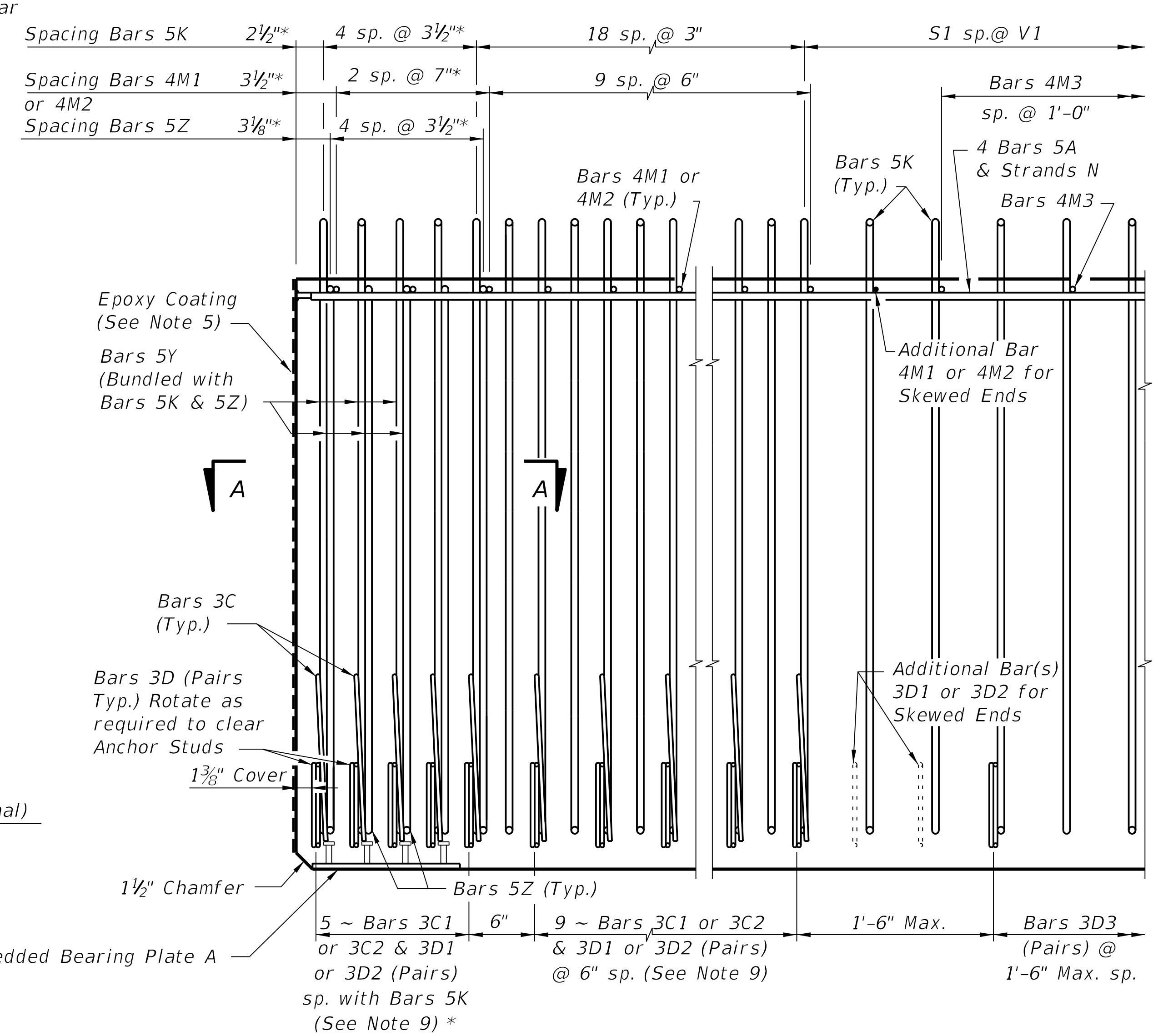


LEGEND:
EF = Each Face
FF = Front Face
BF = Back Face

NOTES:
a. See Sheet 1 for placement details & Table of Beam Variables in Structures Plans for variables S1, S2, S3, S4 & V1.
b. Place Conventional Reinforcement Bars 5A & 3C as shown on Sheet 1. Place additional Bars 5Y 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 & M-1 shall not be used; Conventional Reinforcement Bars D1, D2, C1, C2, M1 & M2 shall be used. See Index No. 20010 Skew Details and Note 9 for placement details. Shift Pieces K & Bars 5Y to accommodate skewed end conditions and align with Bars C and D.



END VIEW



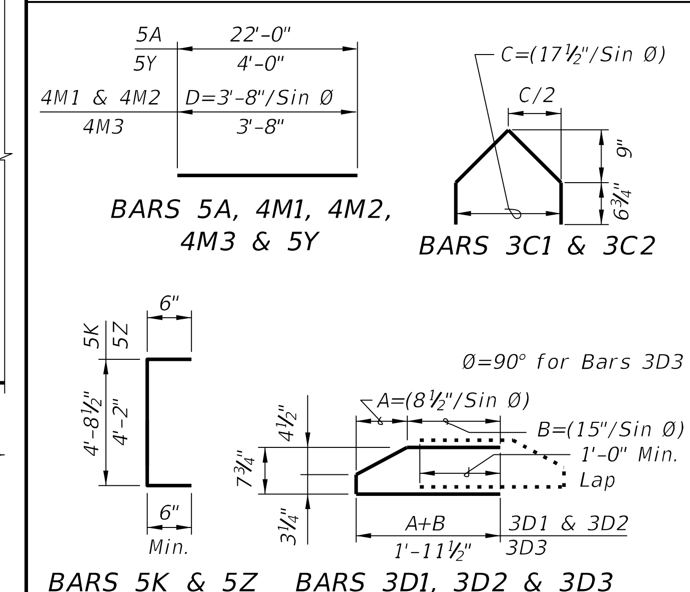
ELEVATION AT END OF BEAM
(Flanges Not Shown For Clarity)
(End 1 Shown, End 2 Similar)

CONVENTIONAL REINFORCING BAR BENDING DETAILS

BILL OF REINFORCING STEEL

MARK	NOTE NUMBERS	SIZE	NUMBER REQUIRED	LENGTH (NOTE 1)
A	—	5	8	22'-0"
C1	9, 10 & 11	3	14 (End 1)	Varies
C2	9, 10 & 11	3	14 (End 2)	Varies
D1	9, 10, 11 & 14	3	28 (End 1)	Varies
D2	9, 10, 11 & 14	3	28 (End 2)	Varies
D3	9 & 14	3	See Table	4'-3"
K	2, 9, 11 & 13	5	See Table	5'-8"
M1	9 & 10	4	12 (End 1)	Varies
M2	9 & 10	4	12 (End 2)	Varies
M3	9	4	See Table	3'-8"
N	3 & 4	⅜" Ø Strand	4	Dim. L
Y	9 & 11	5	12	4'-0"
Z	2, 9, 11 & 13	5	10	5'-2"

BENDING DIAGRAMS (See Note 1)

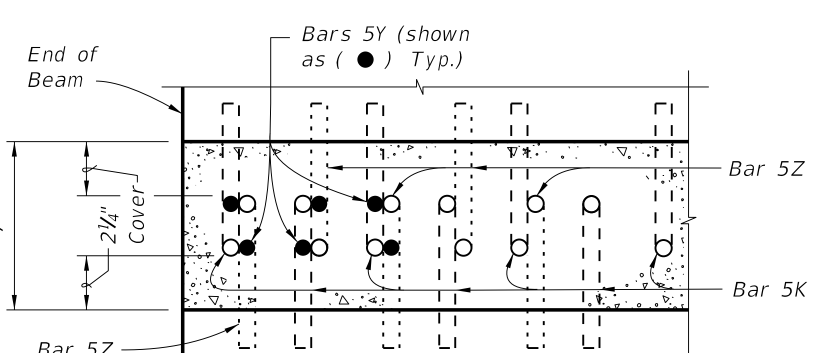


NOTES:

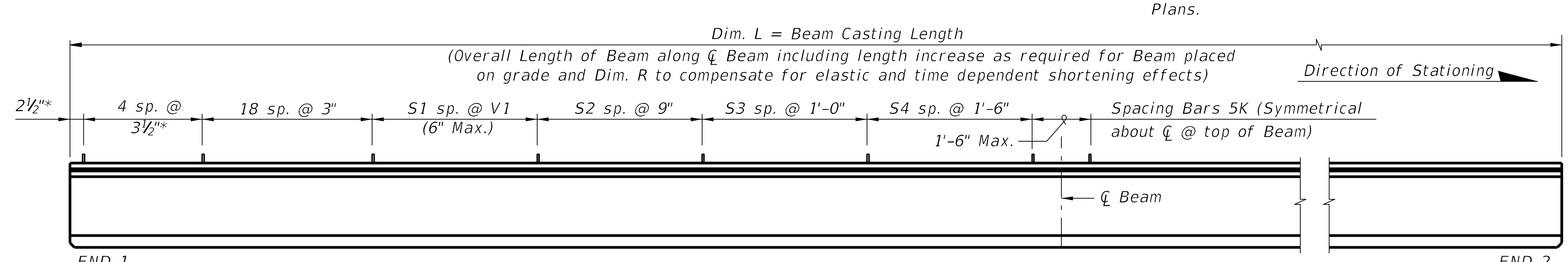
A. Work this Index with Index No. 20010 - Typical Florida-I Beam Details and Notes and the Florida-I Beam - Table of Beam Variables in Structures Plans.

B. For referenced notes, see Index No. 20010.

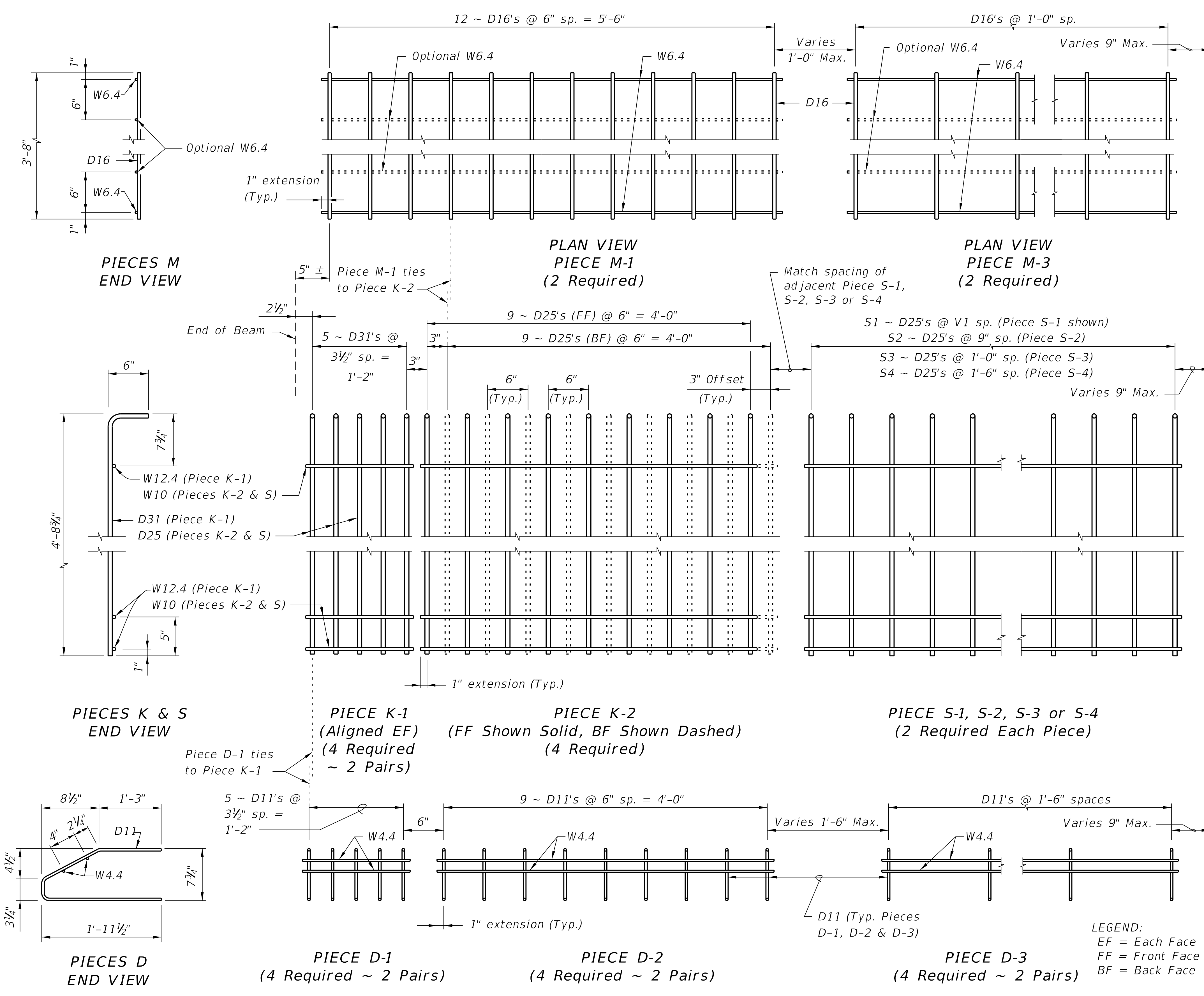
C. For Dimensions A, B, C, D, L, R & V1 and number of spaces S1 thru S4, see Florida-I Beam - Table of Beam Variables in Structures Plans.

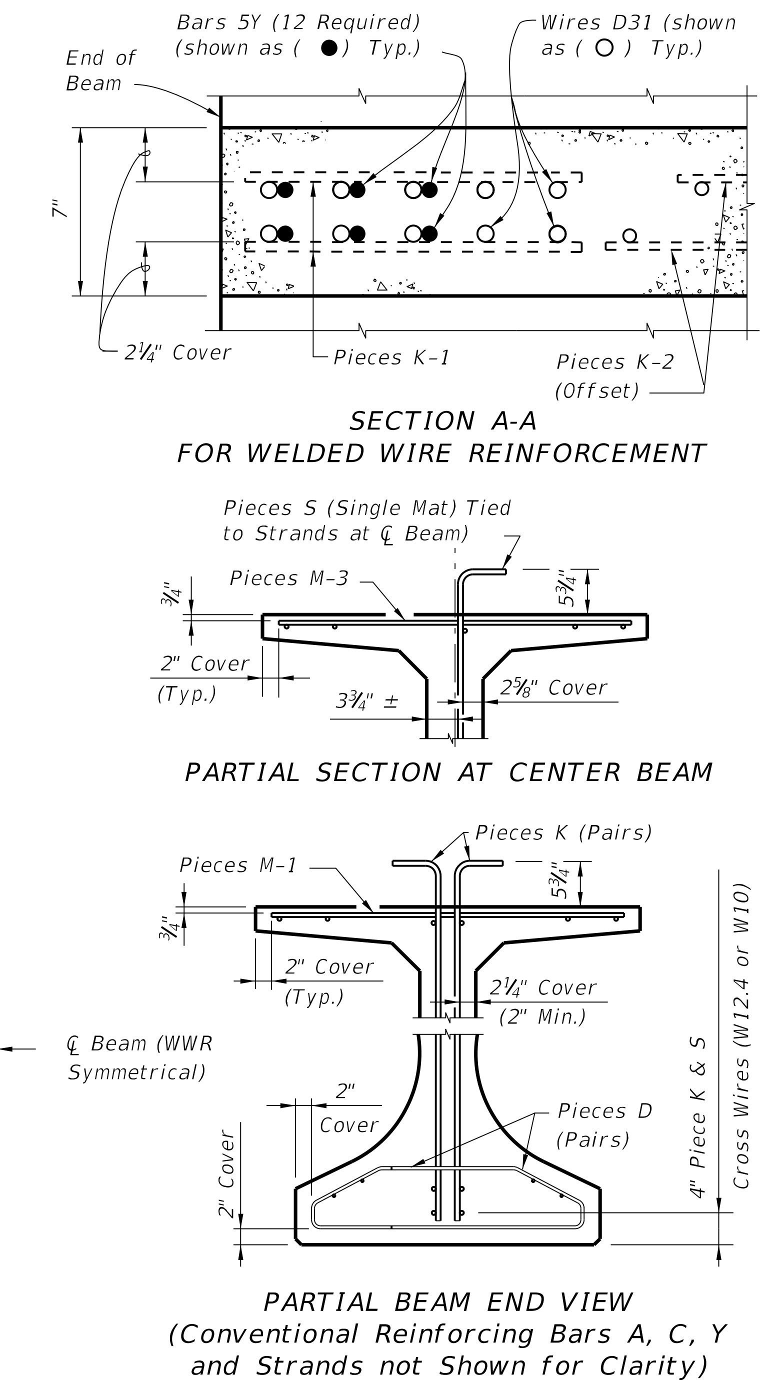


SECTION A-A FOR CONVENTIONAL REINFORCING
(Showing Bars 5K, 5Y & 5Z Only)



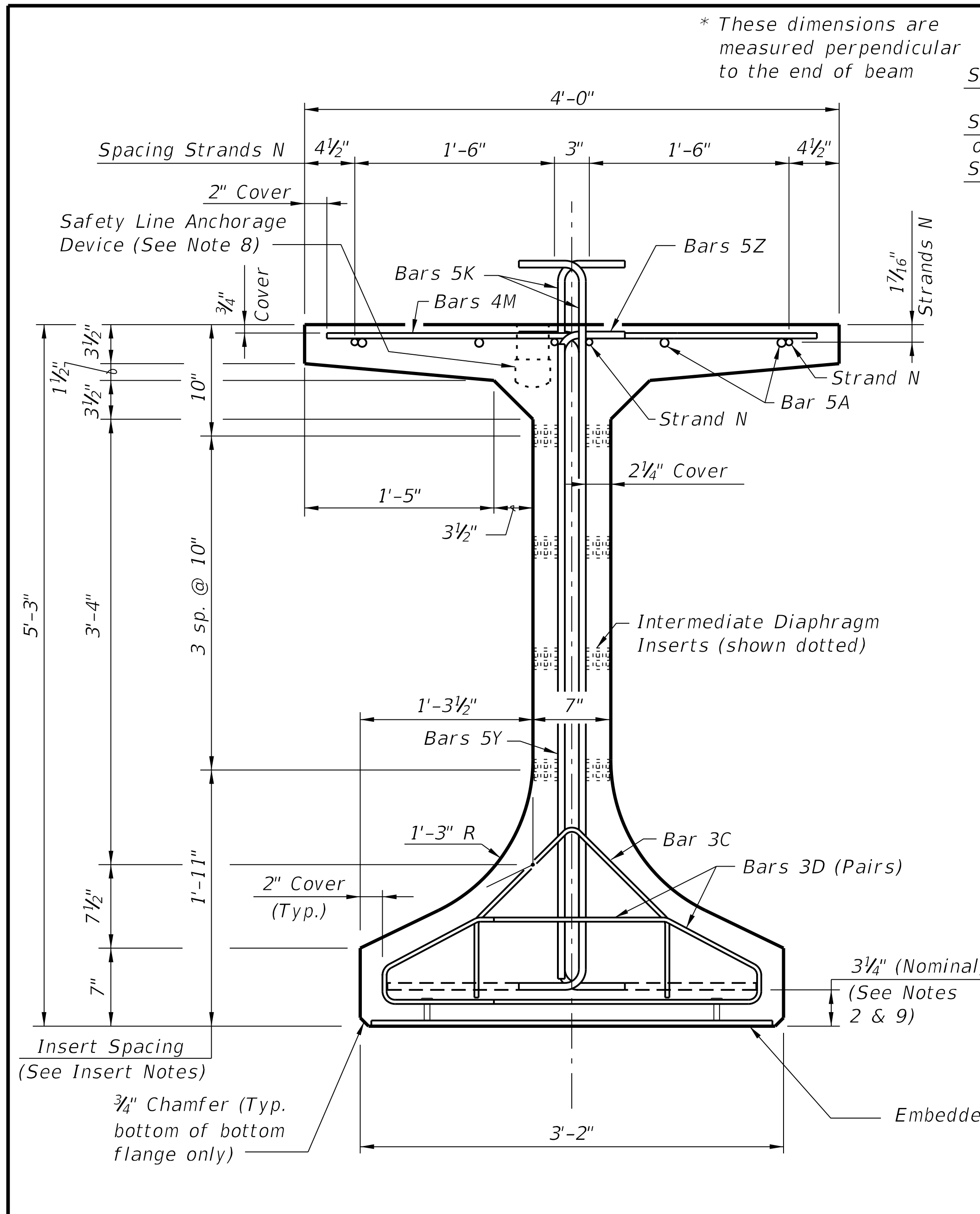
ELEVATION



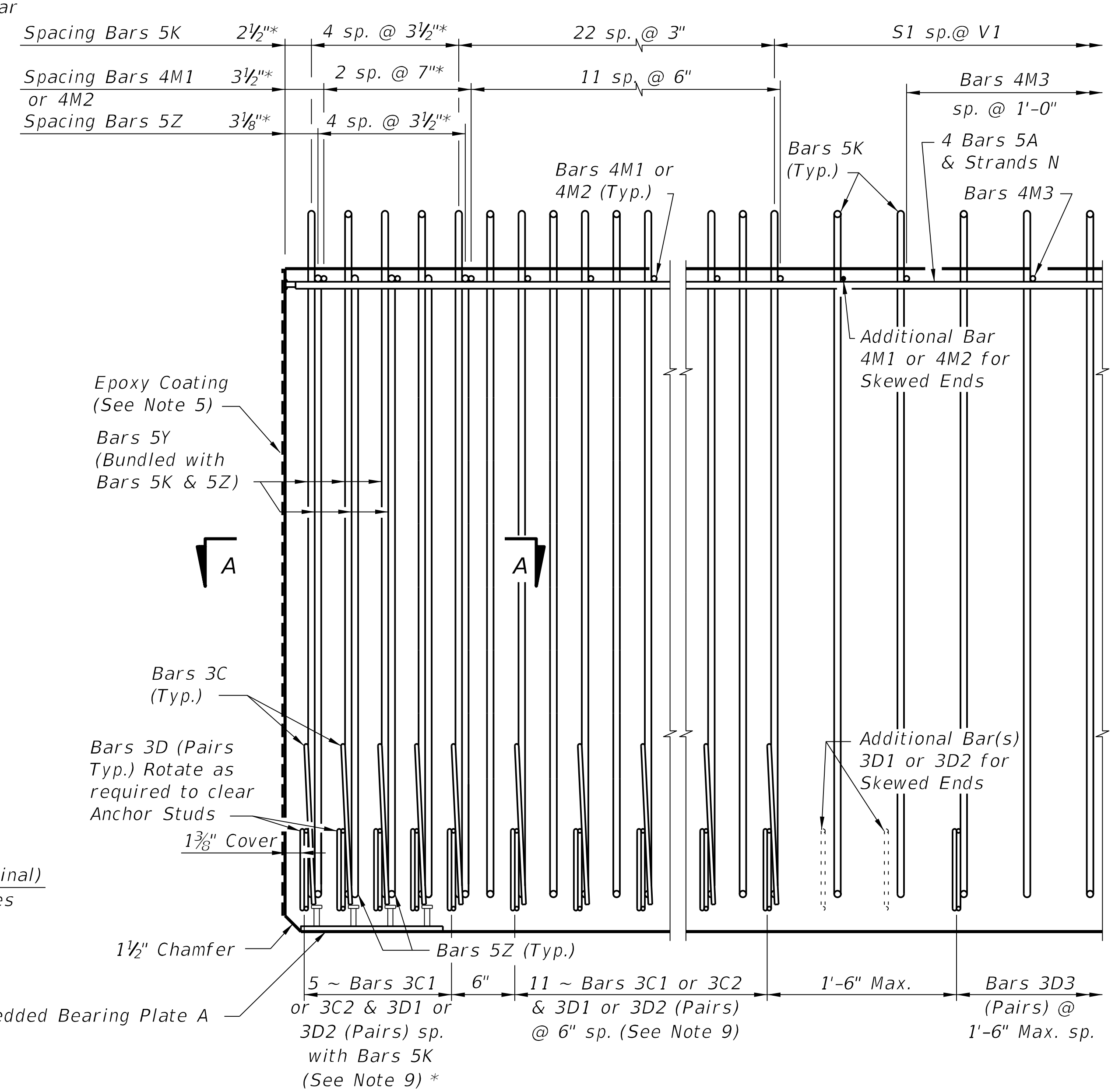


NOTES:

a. See Sheet 1 for placement details & Table of Beam Variables in Structures Plans for variables S1, S2, S3, S4 & V1.
b. Place Conventional Reinforcement Bars 5A & 3C as shown on Sheet 1. Place additional Bars 5Y 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 & M-1 shall not be used; Conventional Reinforcement Bars D1, D2, C1, C2, M1 & M2 shall be used. See Index No. 20010 Skew Details and Note 9 for placement details. Shift Pieces K & Bars 5Y to accommodate skewed end conditions and align with Bars C and D.



END VIEW



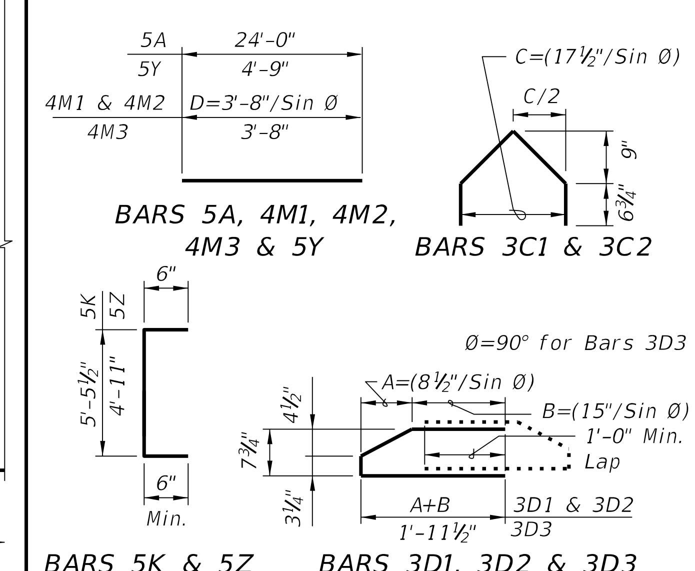
ELEVATION AT END OF BEAM
(Flanges Not Shown For Clarity)
(End 1 Shown, End 2 Similar)

CONVENTIONAL REINFORCING BAR BENDING DETAILS

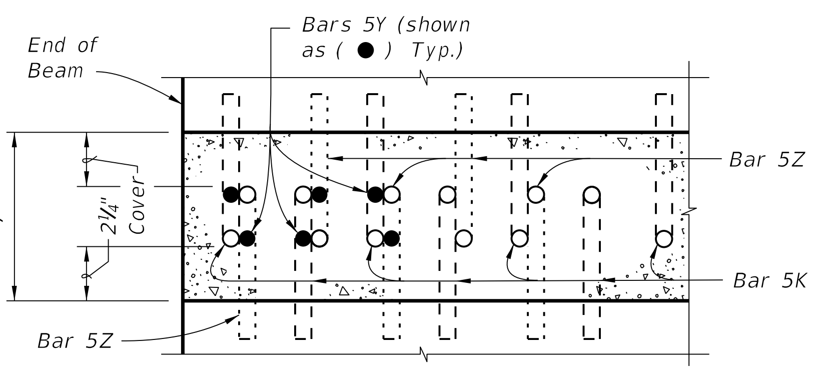
BILL OF REINFORCING STEEL

MARK	NOTE NUMBERS	SIZE	NUMBER REQUIRED	LENGTH (NOTE 1)
A	—	5	8	24'-0"
C1	9, 10 & 11	3	16 (End 1)	Varies
C2	9, 10 & 11	3	16 (End 2)	Varies
D1	9, 10, 11 & 14	3	32 (End 1)	Varies
D2	9, 10, 11 & 14	3	32 (End 2)	Varies
D3	9 & 14	3	See Table	4'-3"
K	2, 9, 11 & 13	5	See Table	6'-5"
M1	9 & 10	4	14 (End 1)	Varies
M2	9 & 10	4	14 (End 2)	Varies
M3	9	4	See Table	3'-8"
N	3 & 4	⅜" Ø Strand	4	Dim. L
Y	9 & 11	5	12	4'-9"
Z	2, 9, 11 & 13	5	10	5'-11"

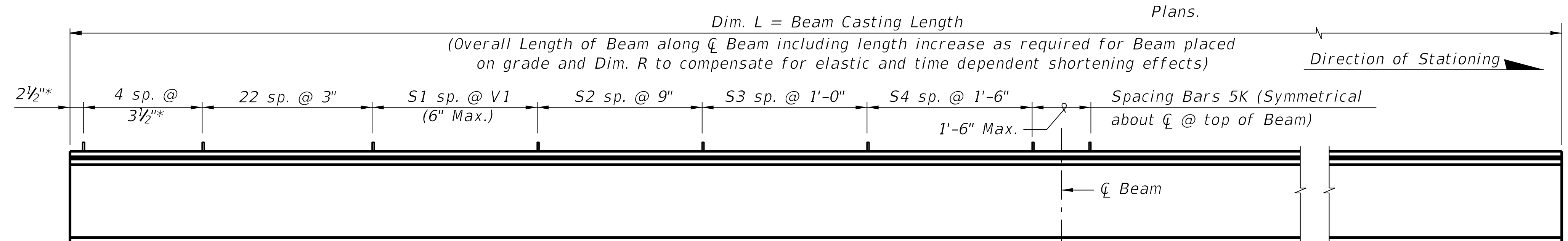
BENDING DIAGRAMS (See Note 1)



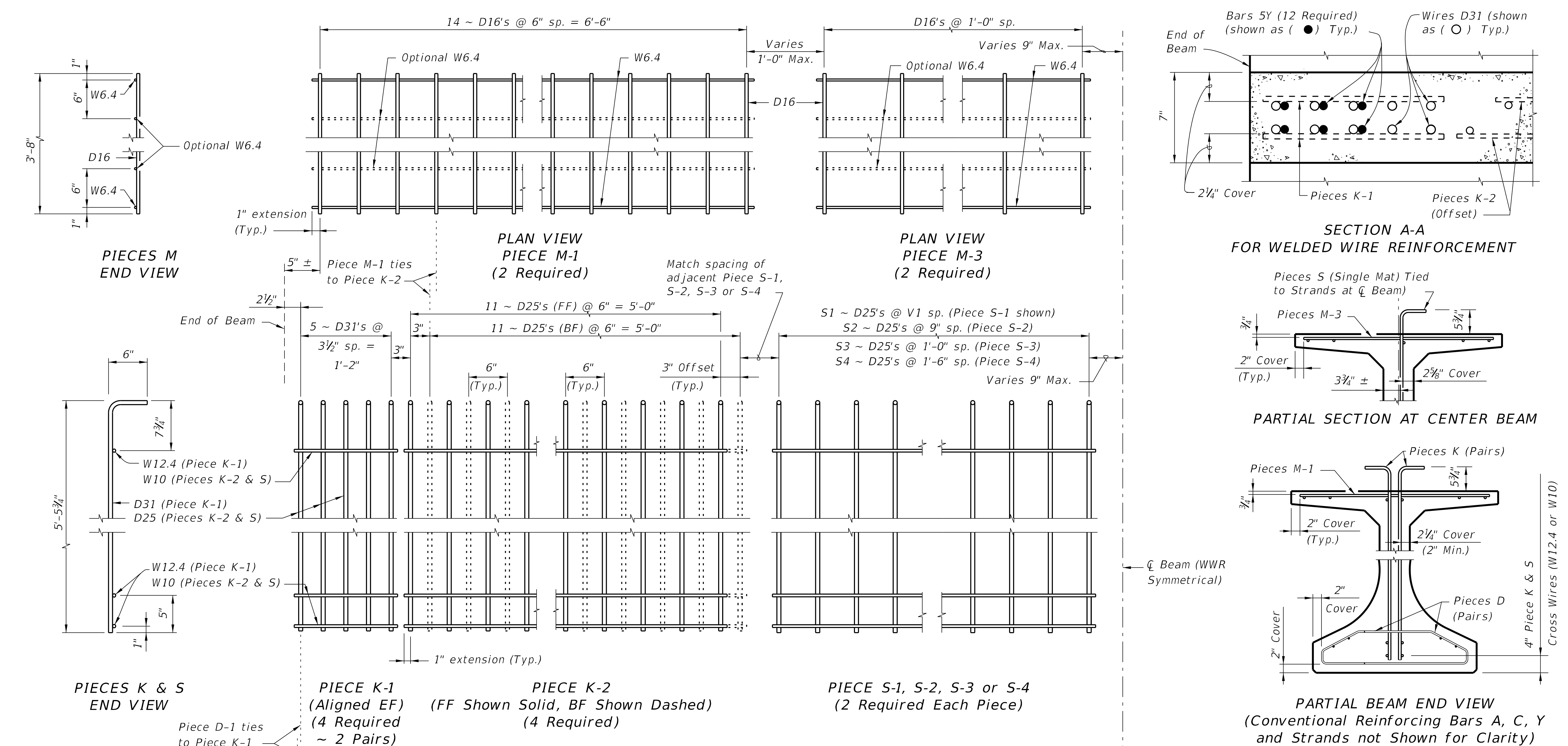
NOTES:
A. Work this Index with Index No. 20010 - Typical Florida-I Beam Details and Notes and the Florida-I Beam - Table of Beam Variables in Structures Plans.
B. For referenced notes, see Index No. 20010.
C. For Dimensions A, B, C, D, L, R & V1 and number of spaces S1 thru S4, see Florida-I Beam - Table of Beam Variables in Structures Plans.

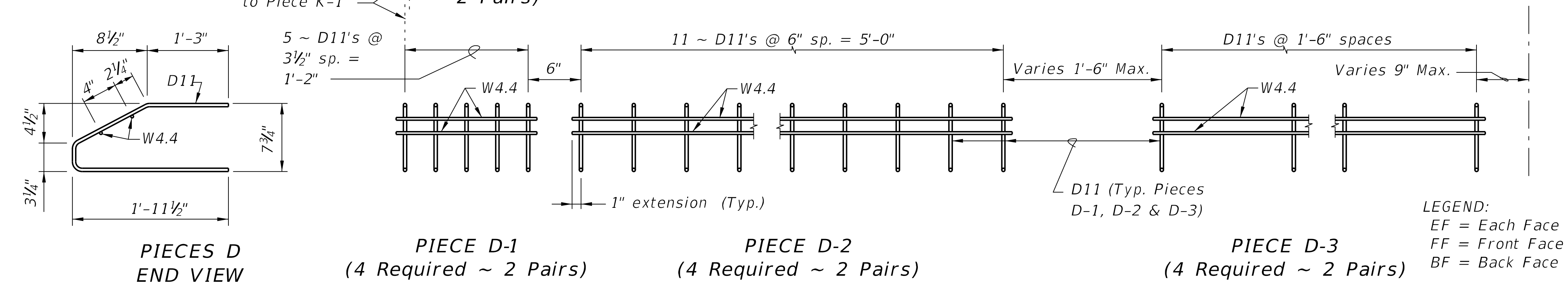


SECTION A-A FOR CONVENTIONAL REINFORCING
(Showing Bars 5K, 5Y & 5Z Only)



ELEVATION





NOTES:

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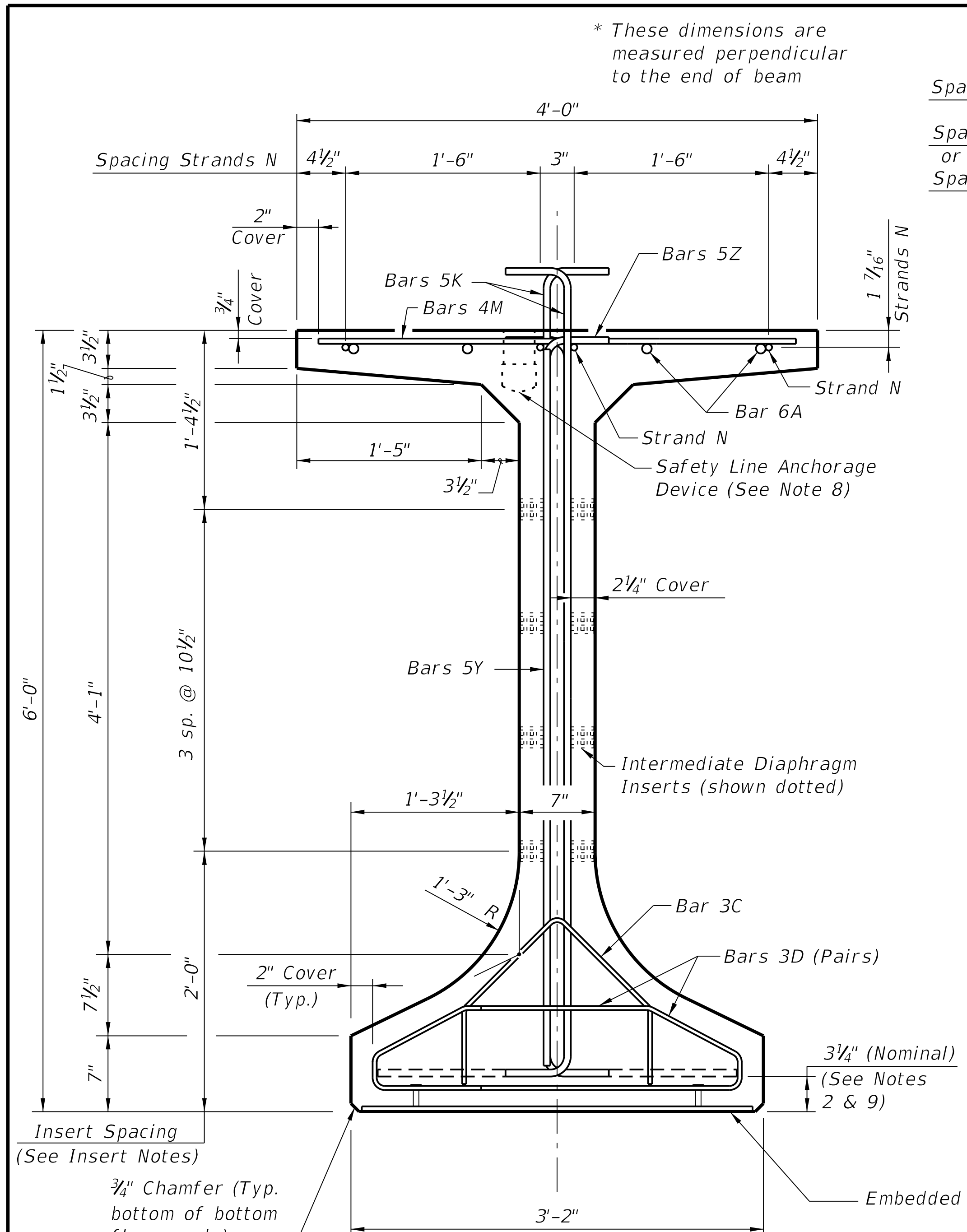
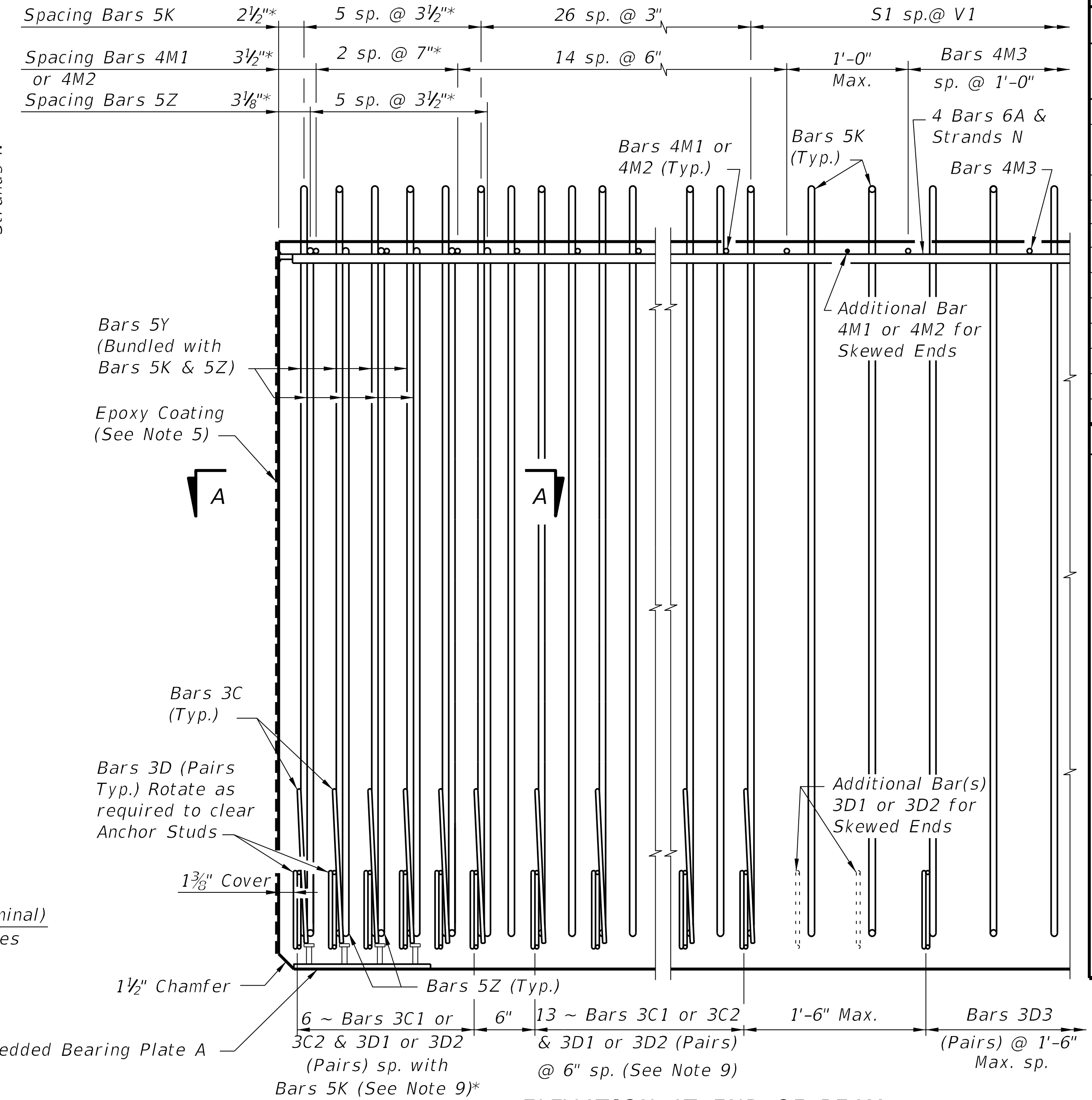


END VIEW



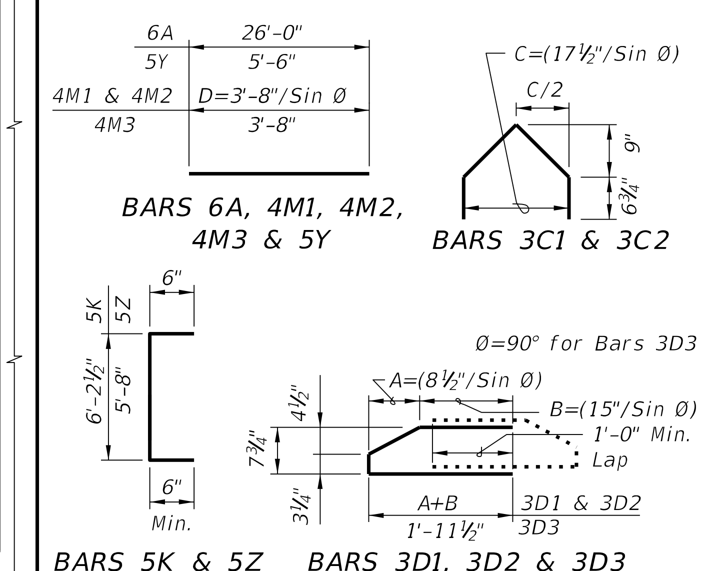
ELEVATION AT END OF BEAM
(Flanges Not Shown For Clarity)
(End 1 Shown, End 2 Similar)

CONVENTIONAL REINFORCING BAR BENDING DETAILS

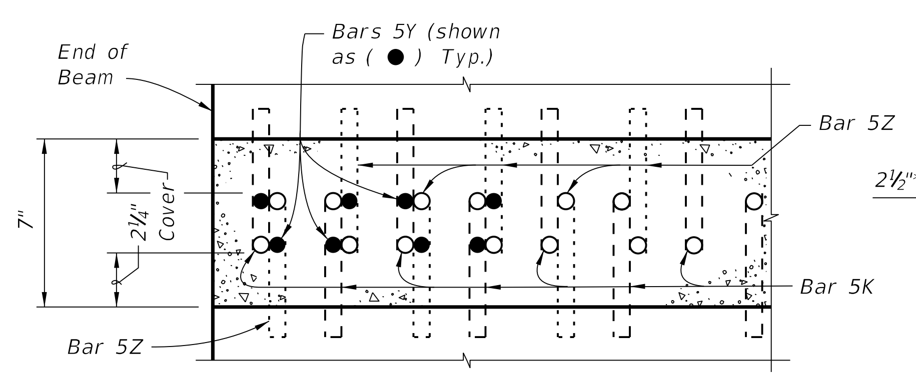
BILL OF REINFORCING STEEL

MARK	NOTE NUMBERS	SIZE	NUMBER REQUIRED	LENGTH (NOTE 1)
A	—	6	8	26'-0"
C1	9, 10 & 11	3	19 (End 1)	Varies
C2	9, 10 & 11	3	19 (End 2)	Varies
D1	9, 10, 11 & 14	3	38 (End 1)	Varies
D2	9, 10, 11 & 14	3	38 (End 2)	Varies
D3	9 & 14	3	See Table	4'-3"
K	2, 9, 11 & 13	5	See Table	7'-2"
M1	9 & 10	4	17 (End 1)	Varies
M2	9 & 10	4	17 (End 2)	Varies
M3	9	4	See Table	3'-8"
N	3 & 4	⅜" Ø Strand	4	Dim. L
Y	9 & 11	5	16	5'-6"
Z	2, 9, 11 & 13	5	12	6'-8"

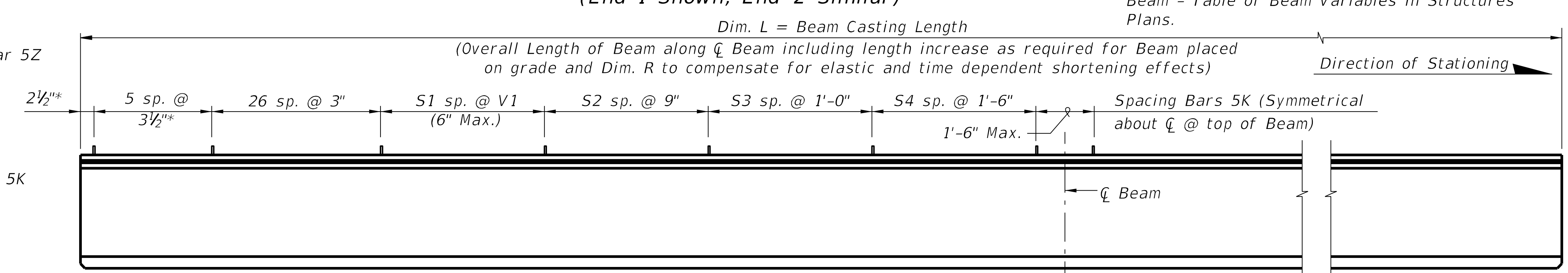
BENDING DIAGRAMS (See Note 1)



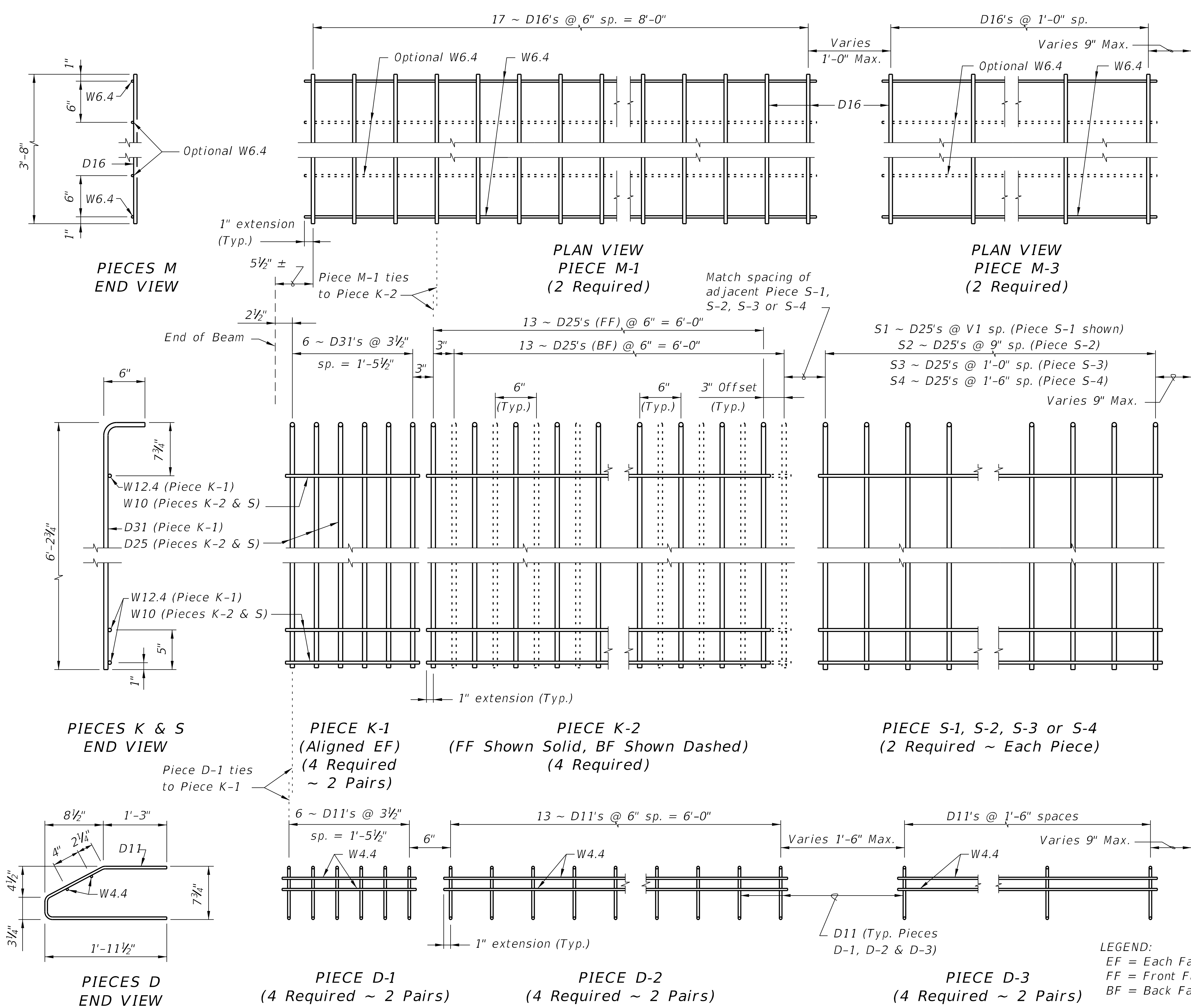
NOTES:
A. Work this Index with Index No. 20010 - Typical Florida-I Beam Details and Notes and the Florida-I Beam - Table of Beam Variables in Structures Plans.
B. For referenced notes, see Index No. 20010.
C. For Dimensions A, B, C, D, L, R & V1 and number of spaces S1 thru S4, see Florida-I Beam - Table of Beam Variables in Structures Plans.



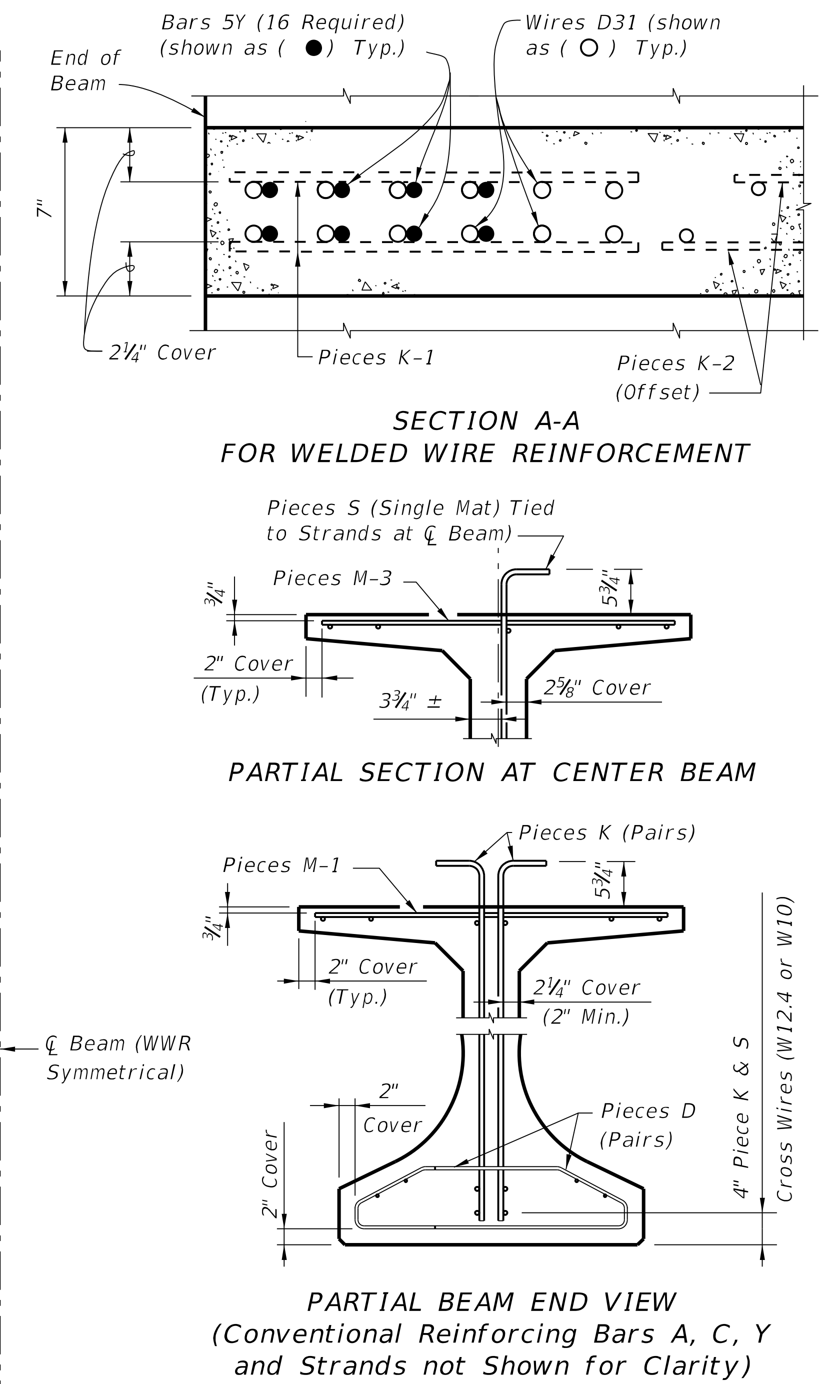
SECTION A-A FOR CONVENTIONAL REINFORCING
(Showing Bars 5K, 5Y & 5Z Only)



ELEVATION



LEGEND:
EF = Each Face
FF = Front Face
BF = Back Face



NOTES:

a. See Sheet 1 for placement details & Table of Beam Variables in Structures Plans for variables S1, S2, S3, S4 & V1.
b. Place Conventional Reinforcement Bars 6A & 3C as shown on Sheet 1. Place additional Bars 5Y as shown in Section A-A for Welded Wire Reinforcement. Bars 5Z will not be used with the WWR Option.
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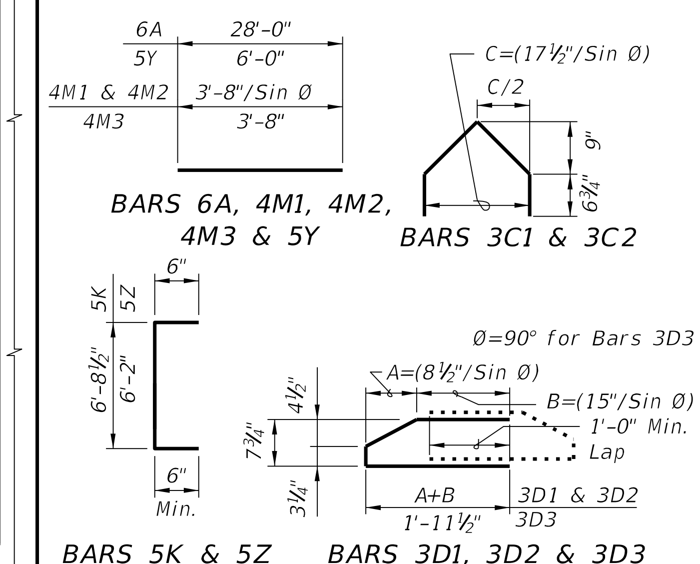
d. For beams with skewed end conditions, Pieces D-1, D-2 & M-1 shall not be used; Conventional Reinforcement Bars D1, D2, C1, C2, M1 & M2 shall be used. See Index No. 20010 Skew Details and Note 9 for placement details. Shift Pieces K & Bars 5Y to accommodate skewed end conditions and align with Bars C and D.

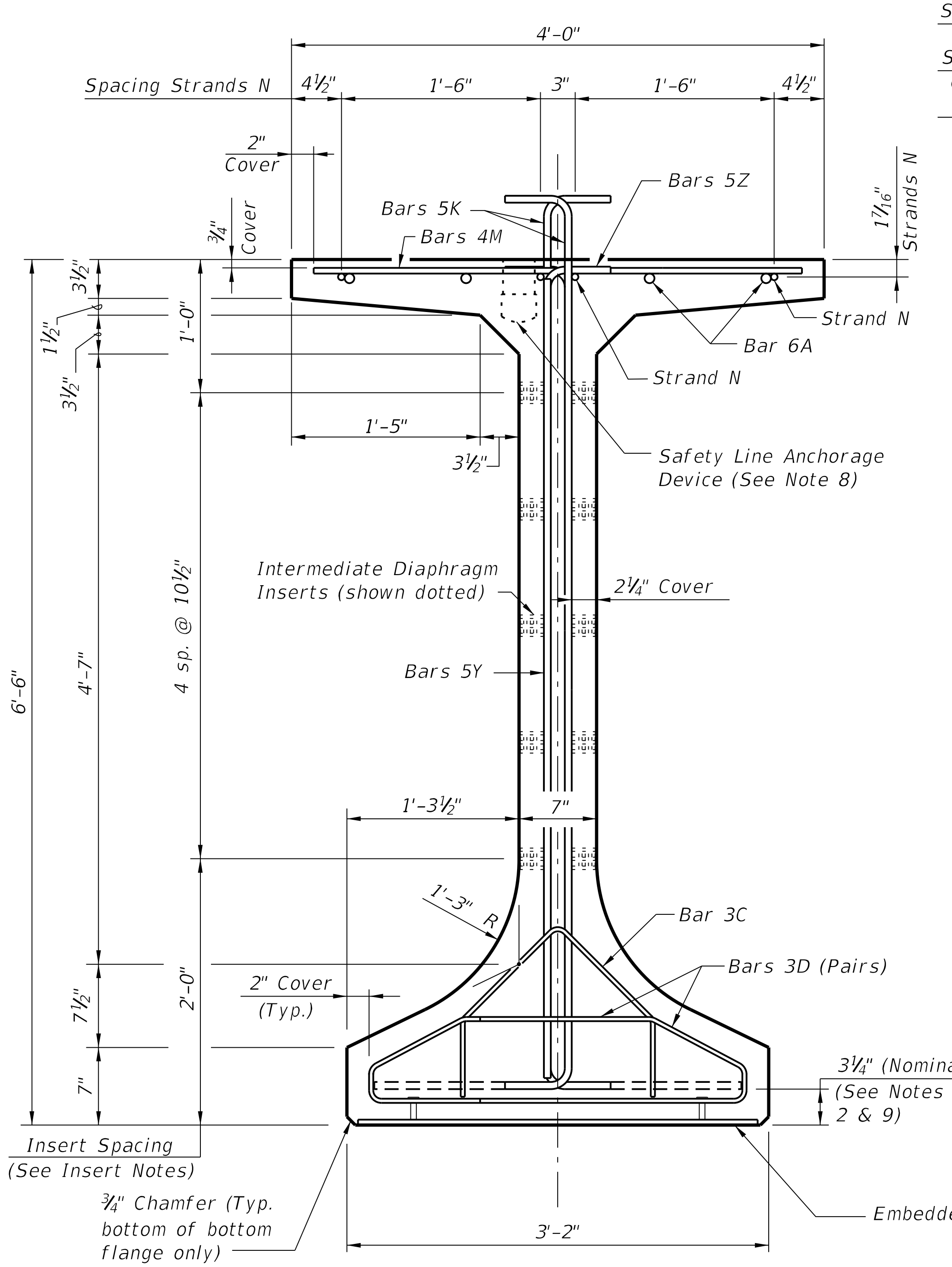
CONVENTIONAL REINFORCING BAR BENDING DETAILS

BILL OF REINFORCING STEEL

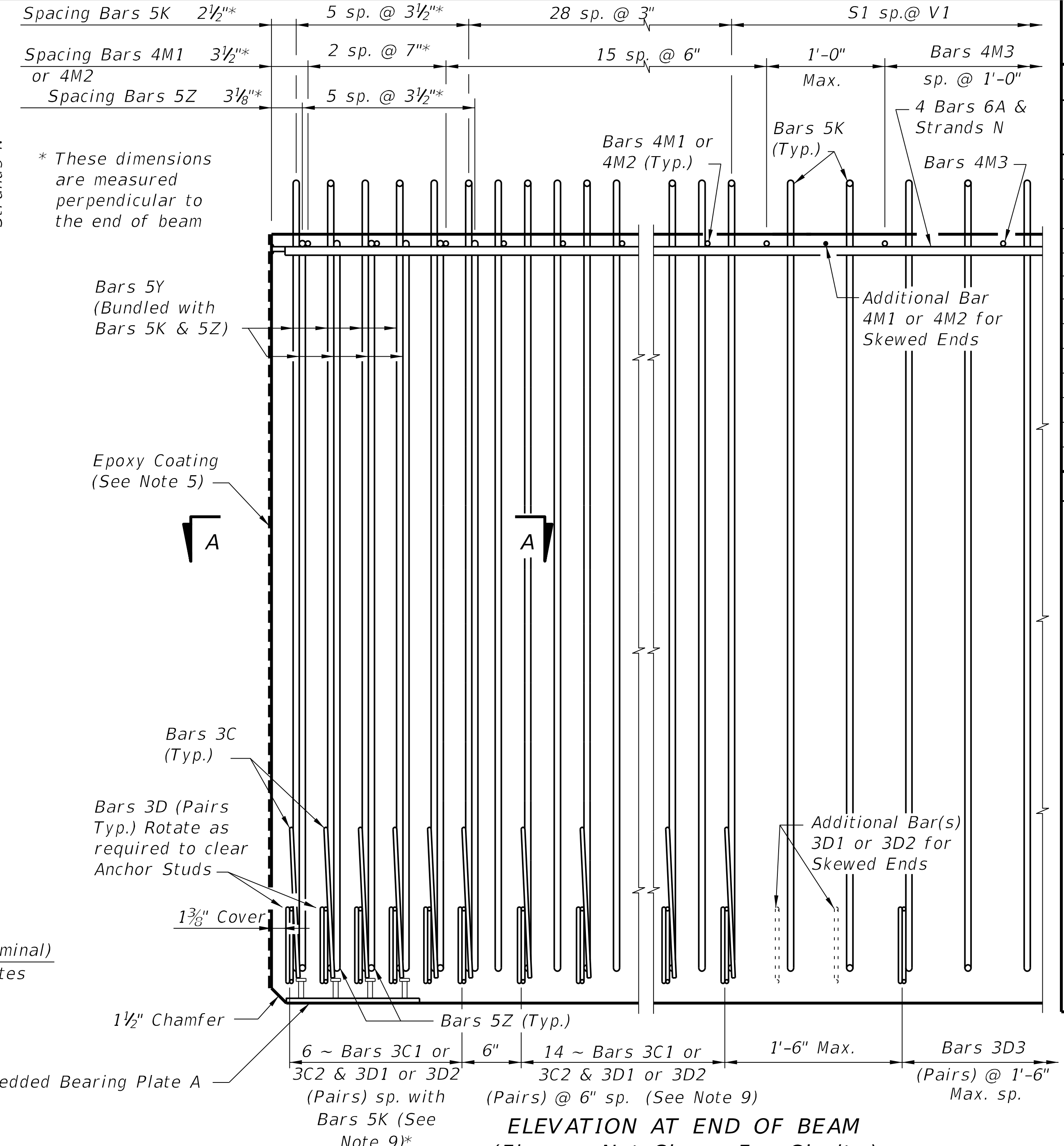
MARK	NOTE NUMBERS	SIZE	NUMBER REQUIRED	LENGTH (NOTE 1)
A	—	6	8	28'-0"
C1	9, 10 & 11	3	20 (End 1)	Varies
C2	9, 10 & 11	3	20 (End 2)	Varies
D1	9, 10, 11 & 14	3	40 (End 1)	Varies
D2	9, 10, 11 & 14	3	40 (End 2)	Varies
D3	9 & 14	3	See Table	4'-3"
K	2, 9, 11 & 13	5	See Table	7'-8"
M1	9 & 10	4	18 (End 1)	Varies
M2	9 & 10	4	18 (End 2)	Varies
M3	9	4	See Table	3'-8"
N	3 & 4	3/8" Ø Strand	4	Dim. L
Y	9 & 11	5	16	6'-0"
Z	2, 9, 11 & 13	5	12	7'-2"

BENDING DIAGRAMS (See Note 1)





END VIEW



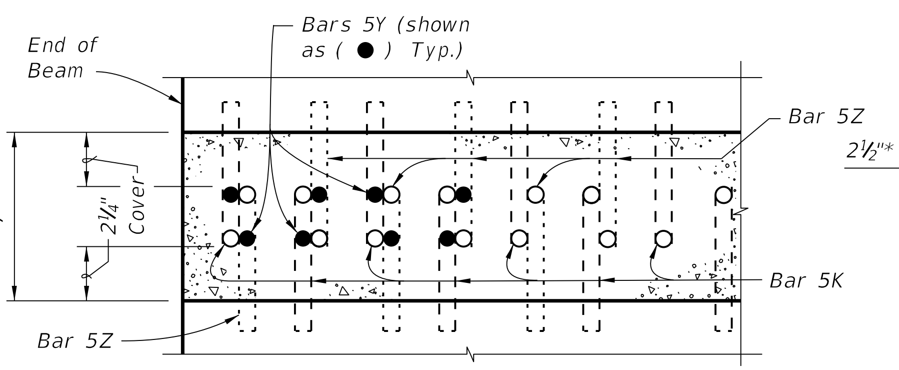
ELEVATION AT END OF BEAM
(Flanges Not Shown For Clarity)
(End 1 Shown, End 2 Similar)

NOTES:

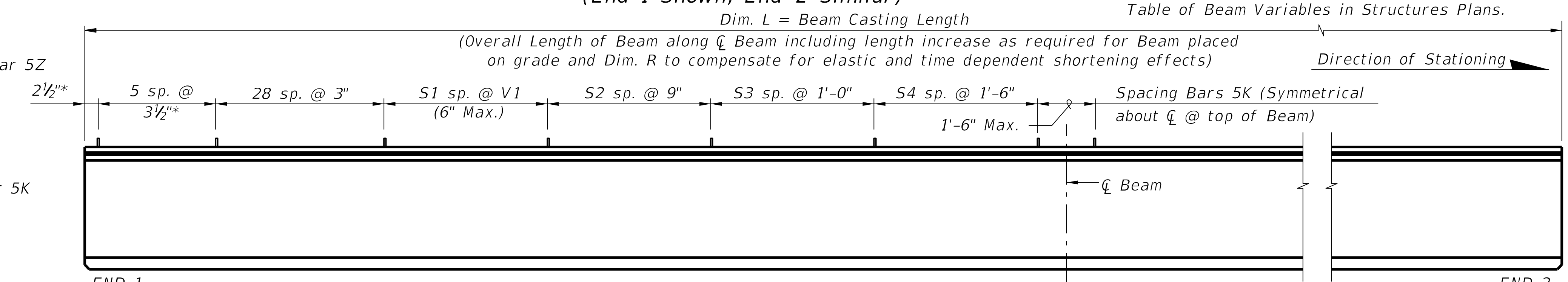
A. Work this Index with Index No. 20010 - Typical Florida-I Beam Details and Notes and the Florida-I Beam - Table of Beam Variables in Structures Plans.

B. For referenced notes, see Index No. 20010.

C. For Dimensions A, B, C, D, L, R & V1 and number of spaces S1 thru S4, see Florida-I Beam - Table of Beam Variables in Structures Plans.

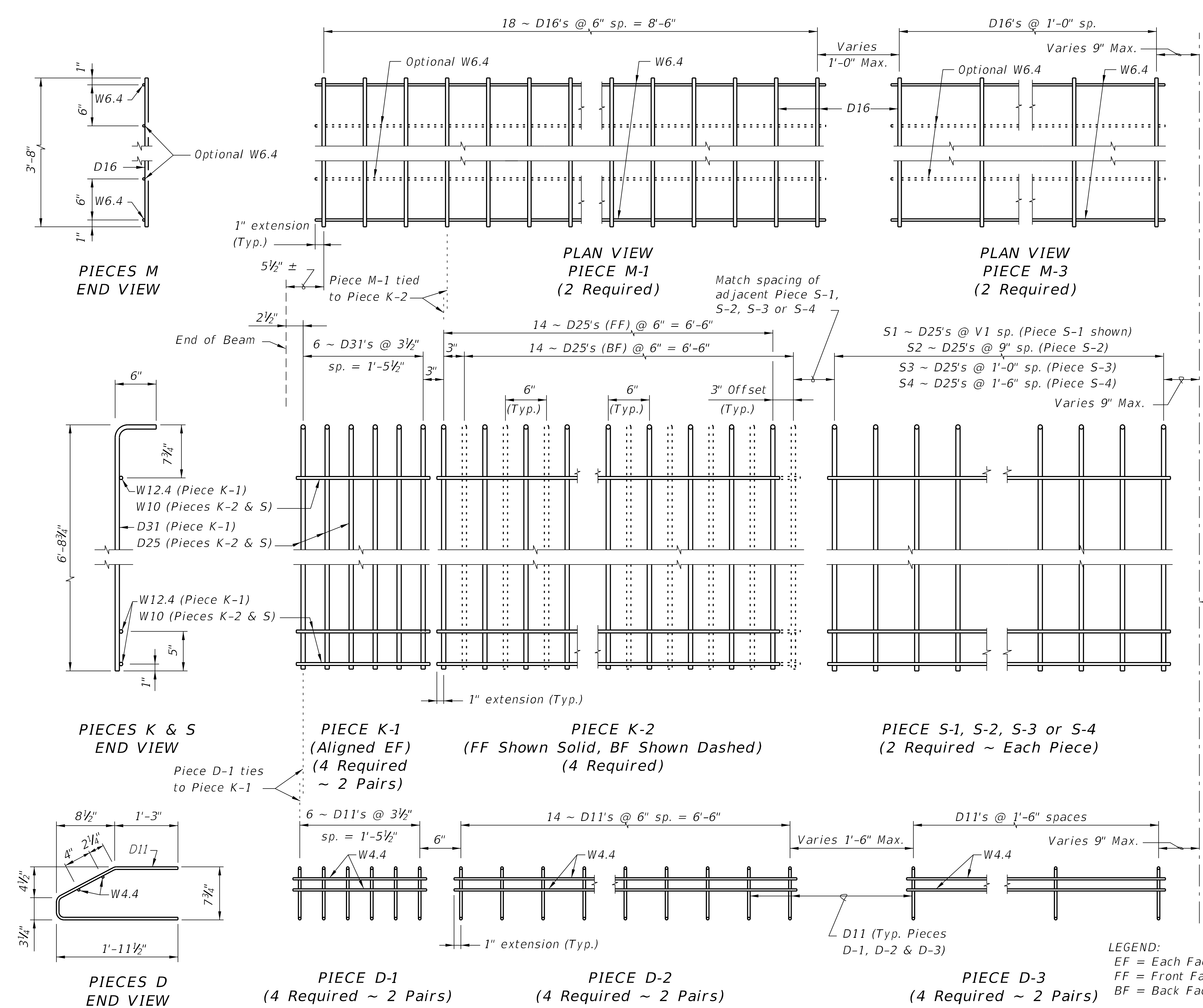


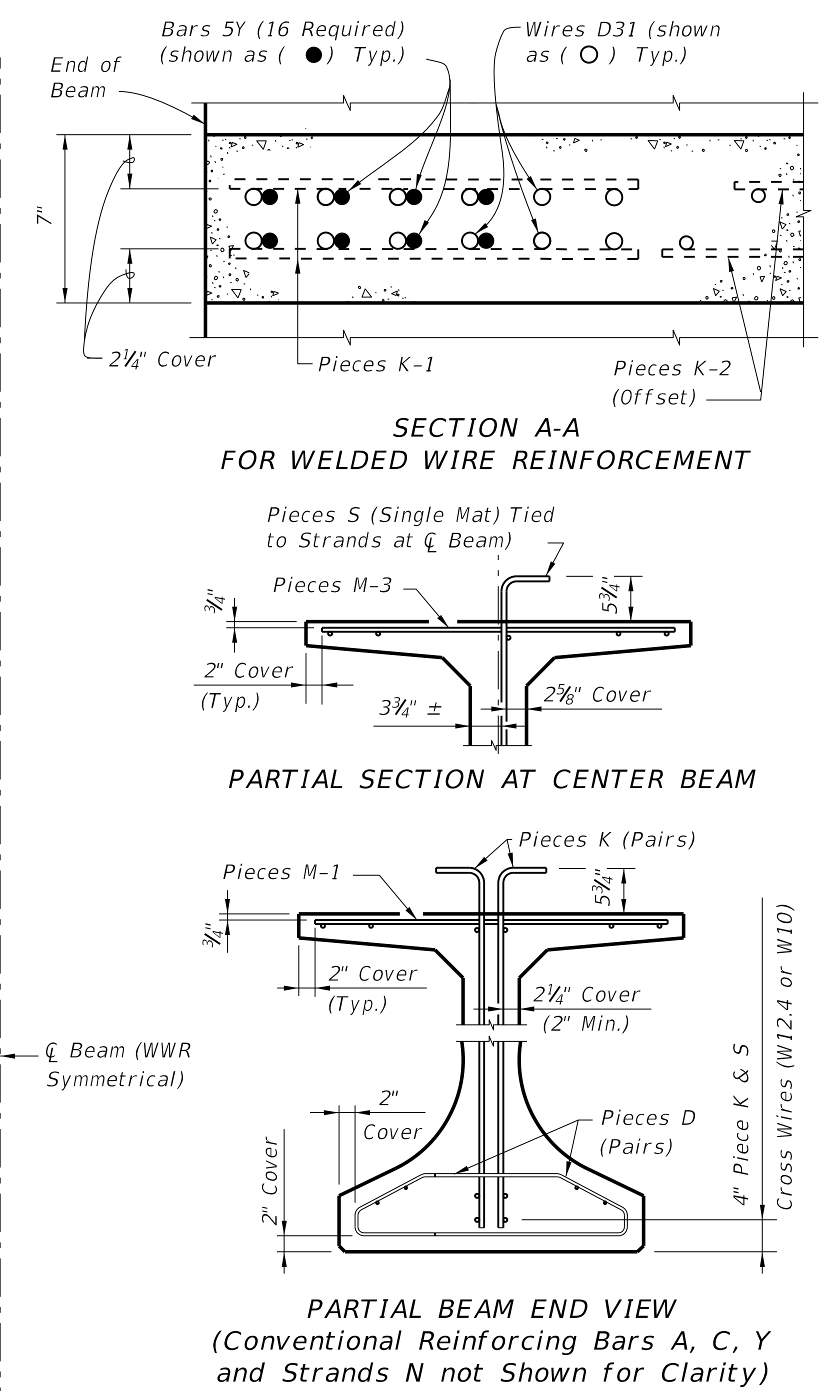
SECTION A-A FOR CONVENTIONAL REINFORCING
(Showing Bars 5K, 5Y & 5Z Only)



ELEVATION

LAST REVISION	REVISION	DESCRIPTION:			INDEX NO.	SHEET NO.
07/01/12			FDOT 2015 DESIGN STANDARDS	FLORIDA-I 78 BEAM - STANDARD DETAILS	20078	1 of 2





NOTES:

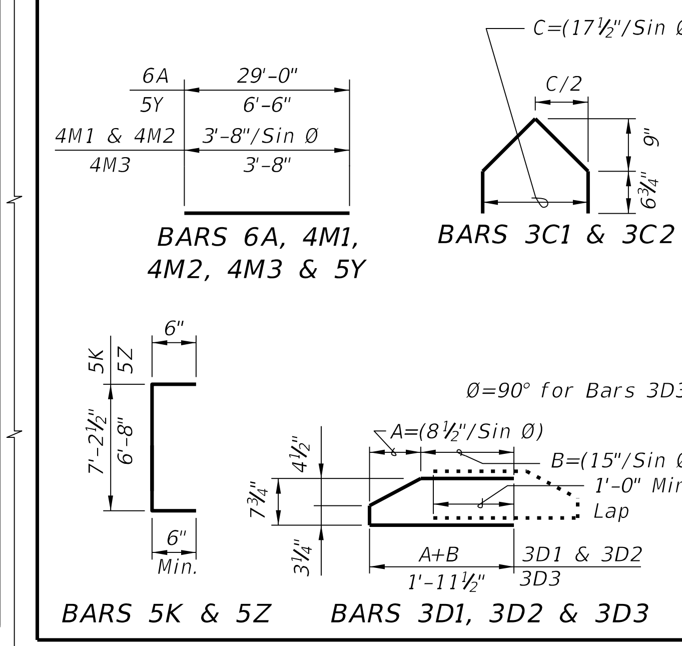
a. See Sheet 1 for placement details & Table of Beam Variables in Structures Plans for variables S1, S2, S3, S4 & V1.
b. Place Conventional Reinforcement Bars 6A & 3C as shown on Sheet 1. Place additional Bars 5Y as shown in Section A-A for Welded Wire Reinforcement. Bars 5Z will not be used with the WWR Option.
c. Pieces may be fabricated in multiple length sections.
d. For beams with skewed end conditions, Pieces D-1, D-2 & M-1 shall not be used; Conventional Reinforcement Bars D1, D2, C1, C2, M1 & M2 shall be used. See Index No. 20010 Skew Details and Note 9 for placement details. Shift Pieces K & Bars 5Y to accommodate skewed end conditions and align with Bars C and D.

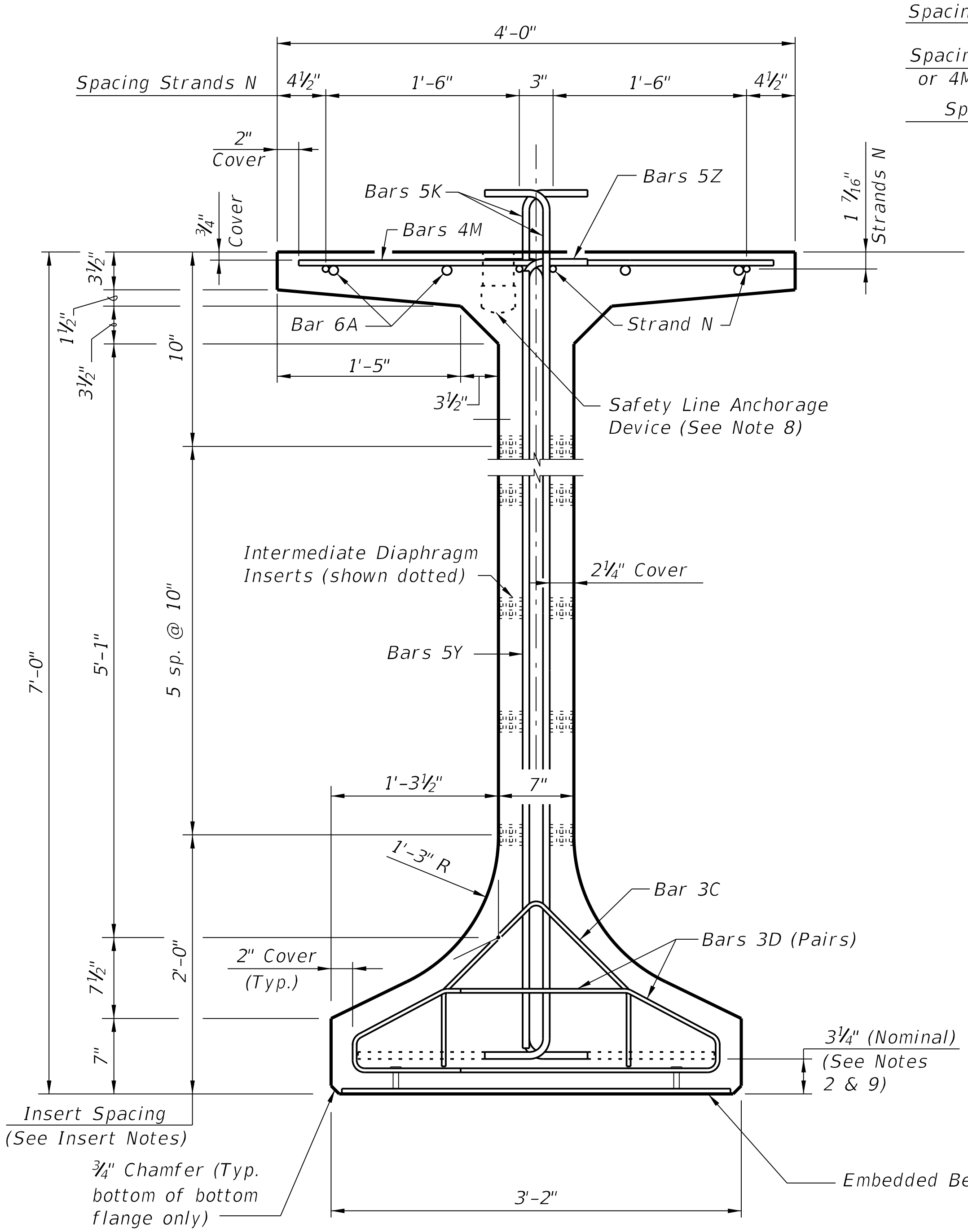
CONVENTIONAL REINFORCING BAR BENDING DETAILS

BILL OF REINFORCING STEEL

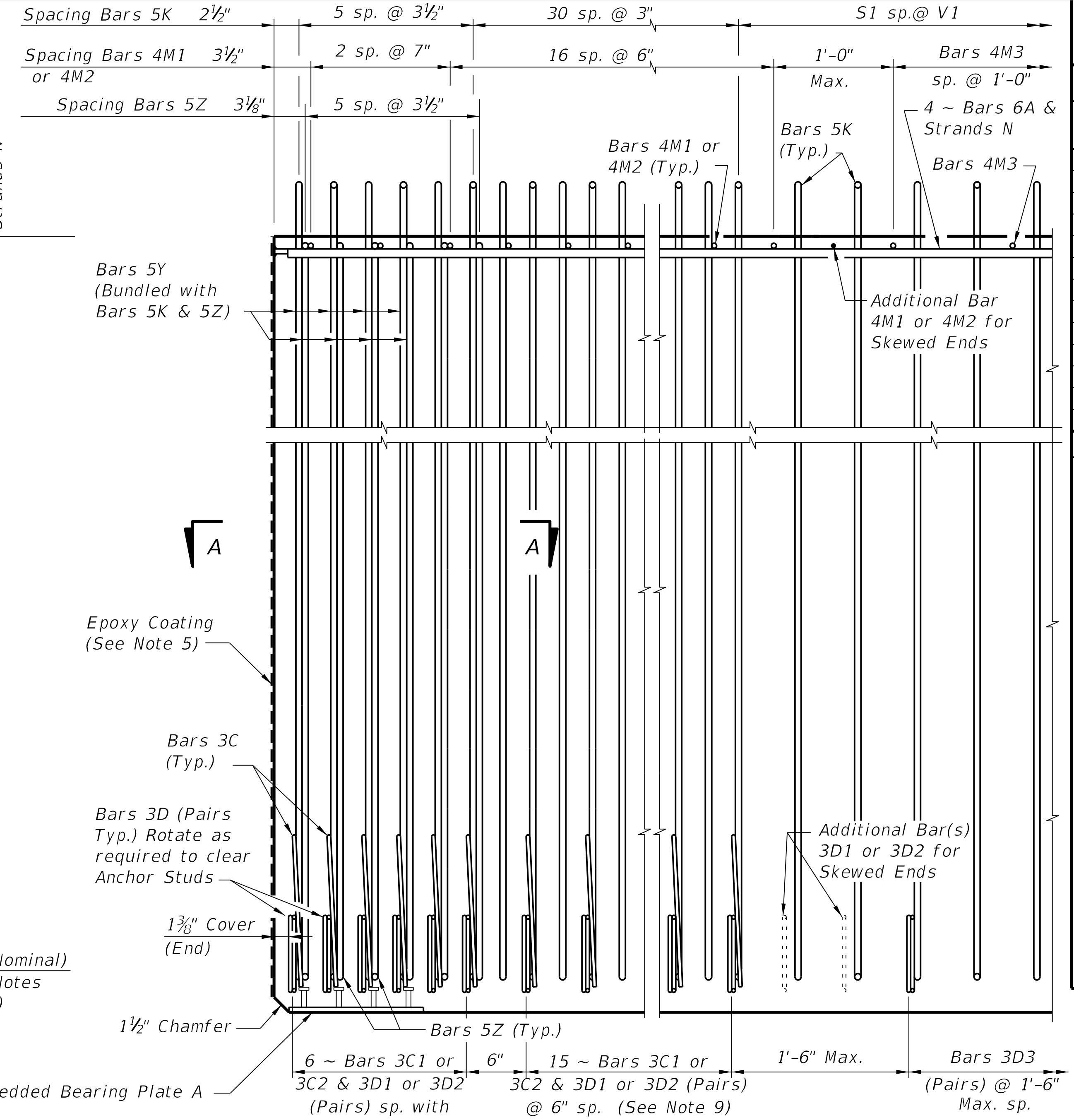
MARK	NOTE NUMBERS	SIZE	NUMBER REQUIRED	LENGTH (NOTE 1)
A	—	6	8	29'-0"
C1	9, 10 & 11	3	21 (End 1)	Varies
C2	9, 10 & 11	3	21 (End 2)	Varies
D1	9, 10, 11 & 14	3	42 (End 1)	Varies
D2	9, 10, 11 & 14	3	42 (End 2)	Varies
D3	9 & 14	3	See Table	4'-3"
K	2, 9, 11 & 13	5	See Table	8'-2"
M1	9 & 10	4	19 (End 1)	Varies
M2	9 & 10	4	19 (End 2)	Varies
M3	9	4	See Table	3'-8"
N	3 & 4	½" Ø Strand	4	Dim. L
Y	9 & 11	5	16	6'-6"
Z	2, 9, 11 & 13	5	12	7'-8"

BENDING DIAGRAMS (See Note 1)





END VIEW



ELEVATION AT END OF BEAM
(Flanges Not Shown For Clarity)
(End 1 Shown, End 2 Similar)

NOTES:
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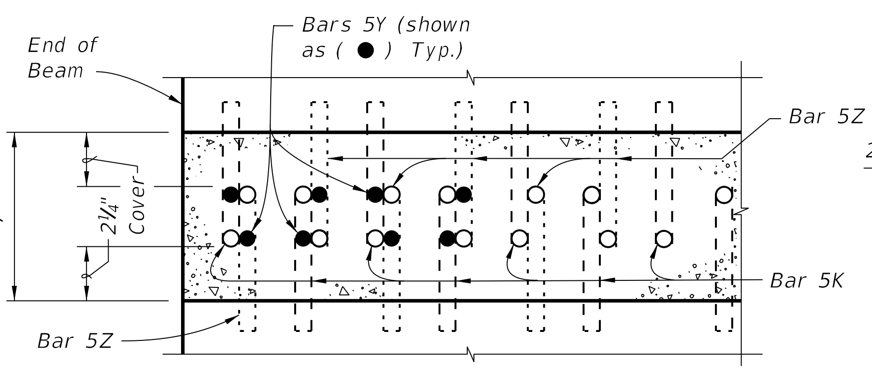
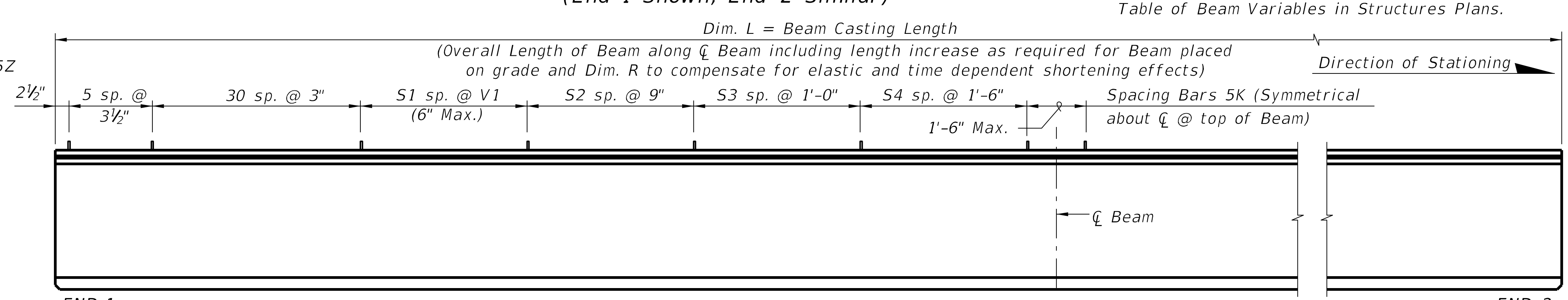
C. For Dimensions A, B, C, D, L, R & V1 and number of spaces S1 thru S4, see Florida-I Beam - Table of Beam Variables in Structures Plans.



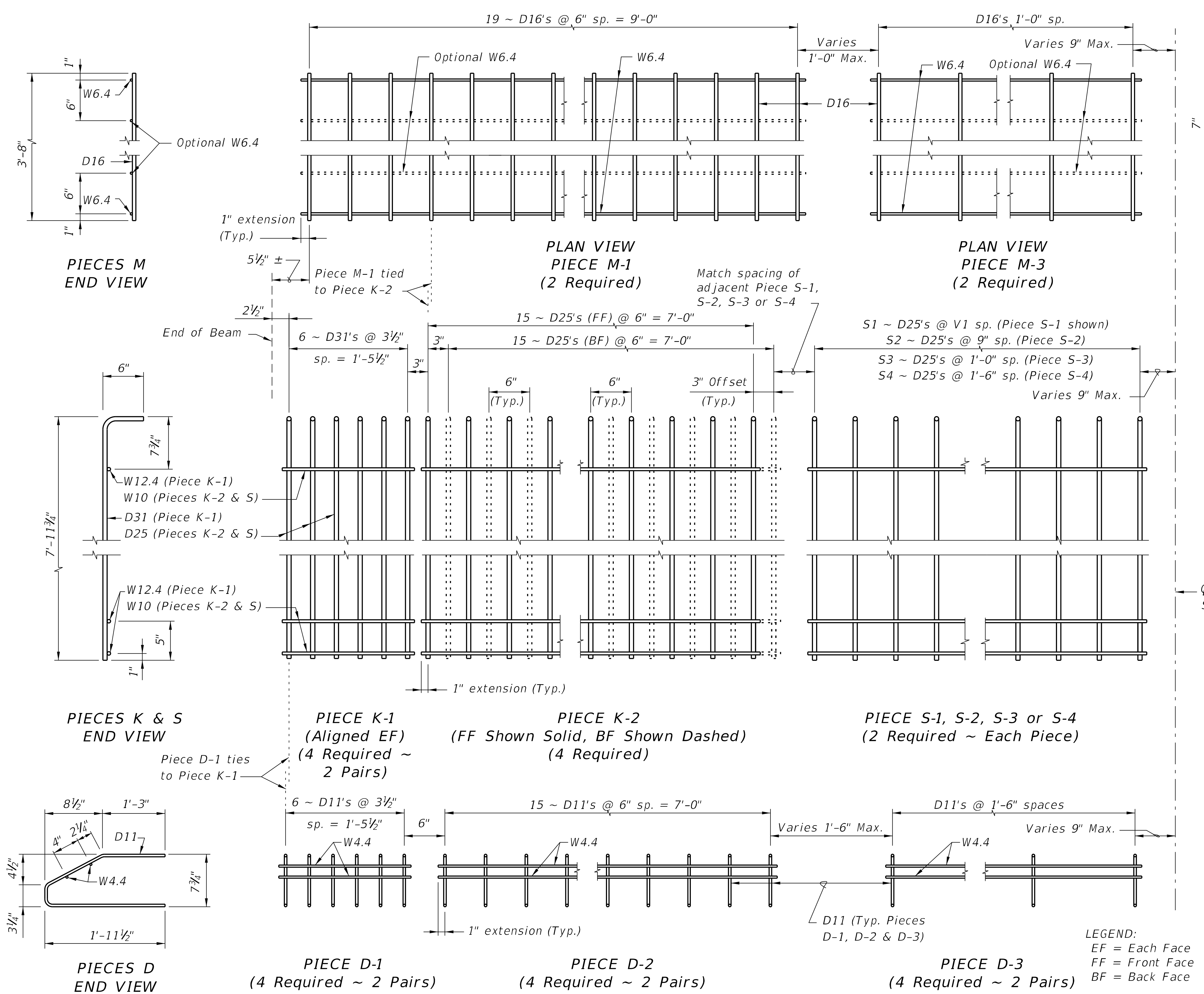
SECTION A-A FOR CONVENTIONAL REINFORCING
(Showing Bars 5K, 5Y & 5Z Only)

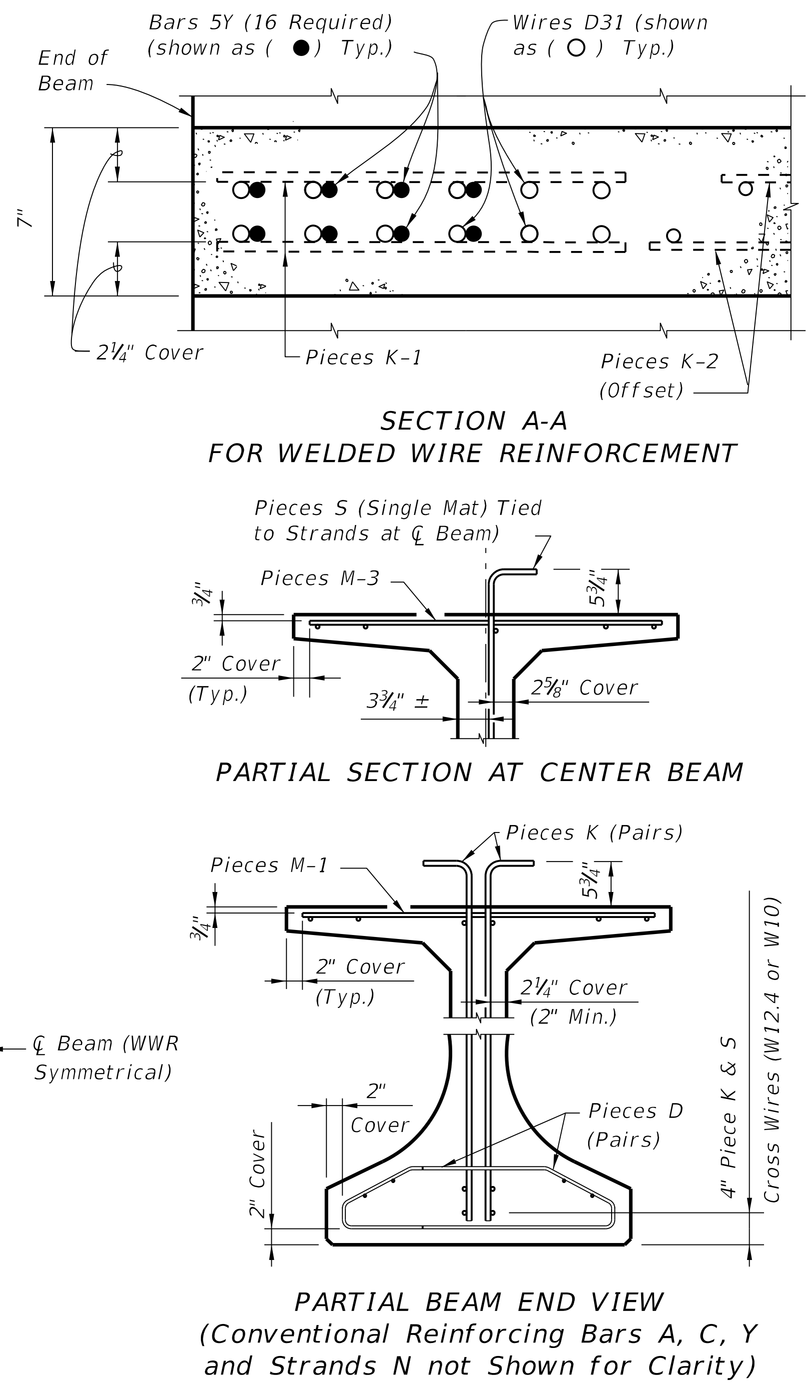


ELEVATION

5/22/2014 1:13:45 PM

LAST REVISION	REVISION	DESCRIPTION:			INDEX NO.	SHEET NO.
07/01/12			FDOT 2015 DESIGN STANDARDS	FLORIDA-I 84 BEAM - STANDARD DETAILS	20084	1 of 2





NOTES:

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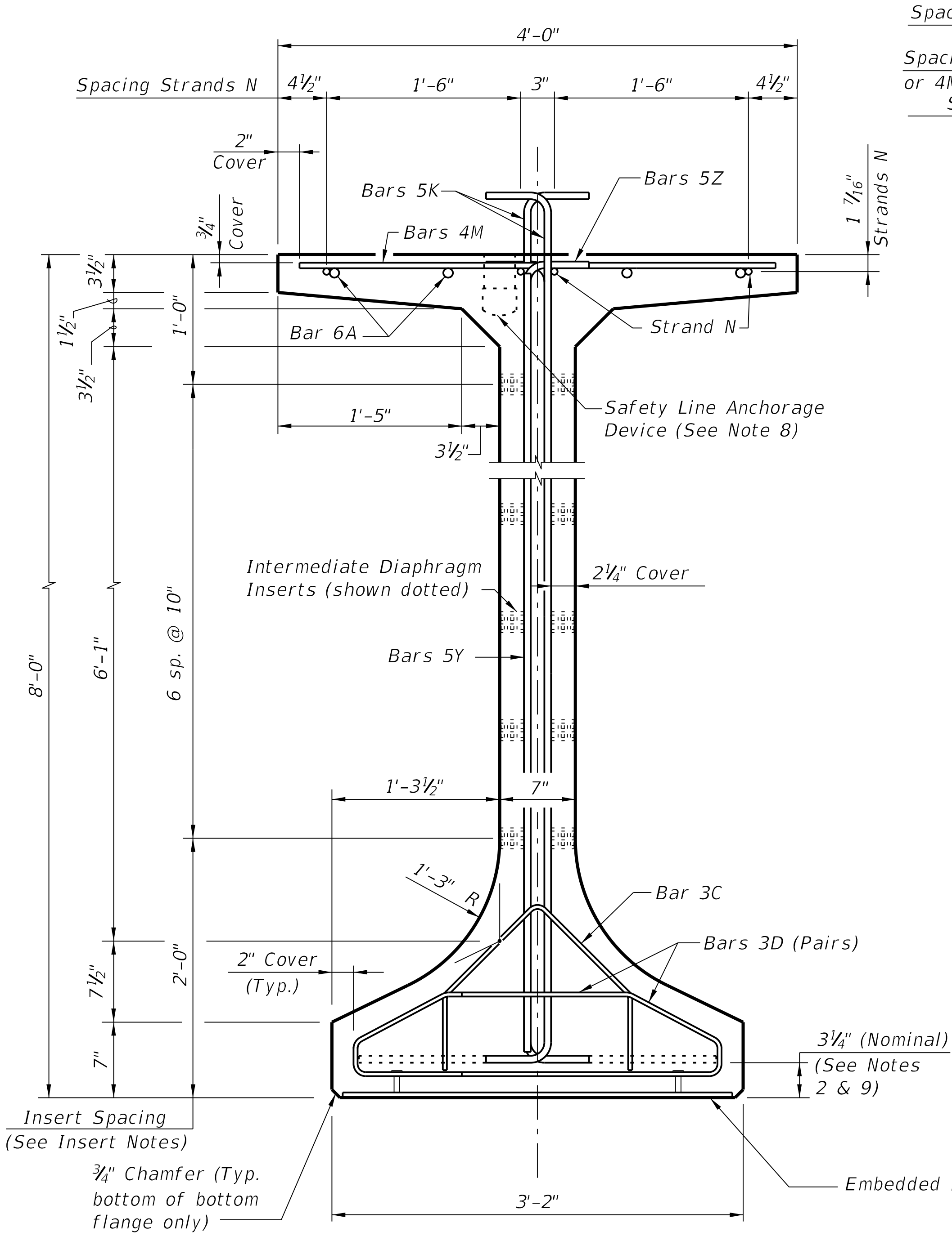
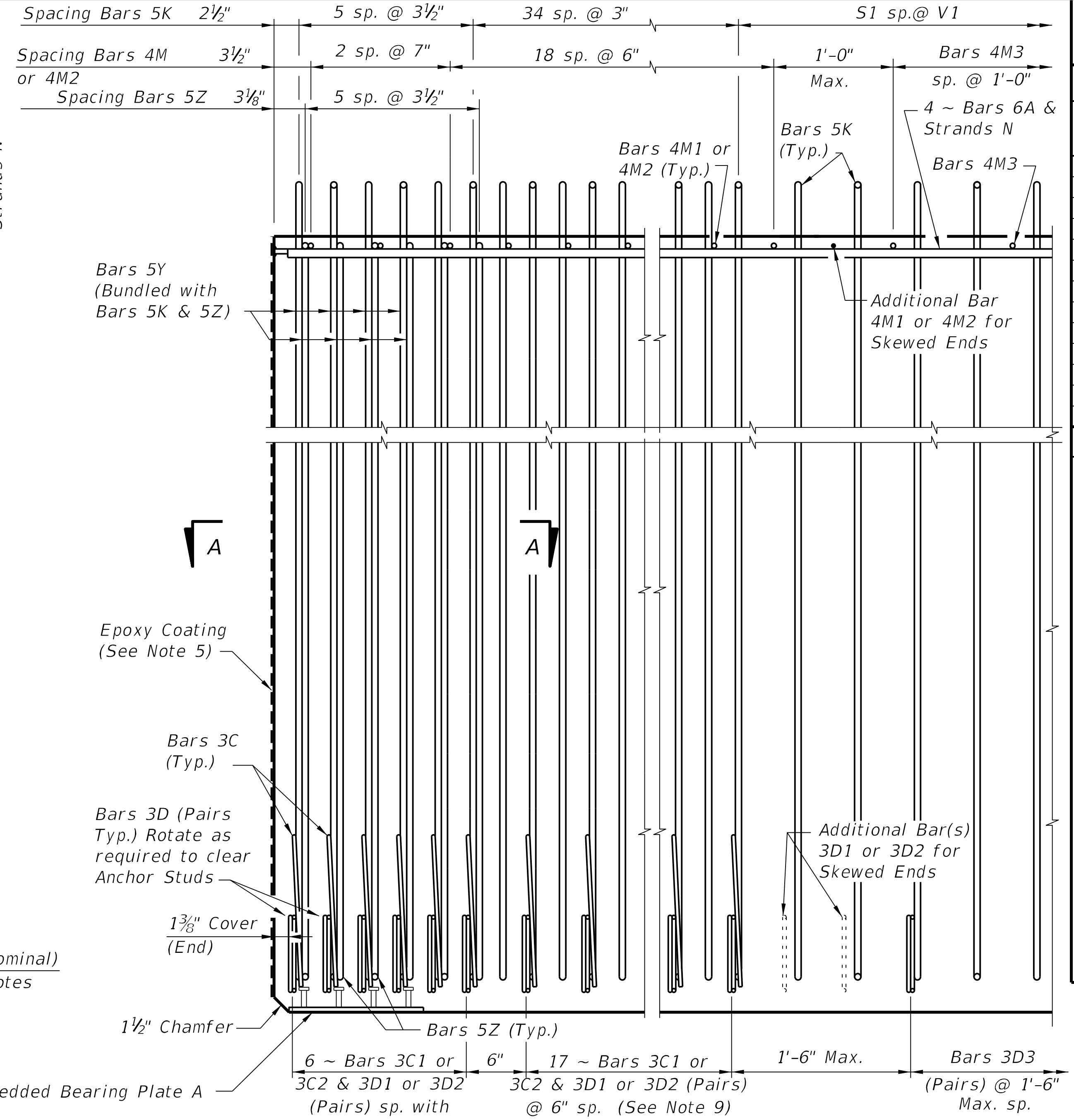


END VIEW



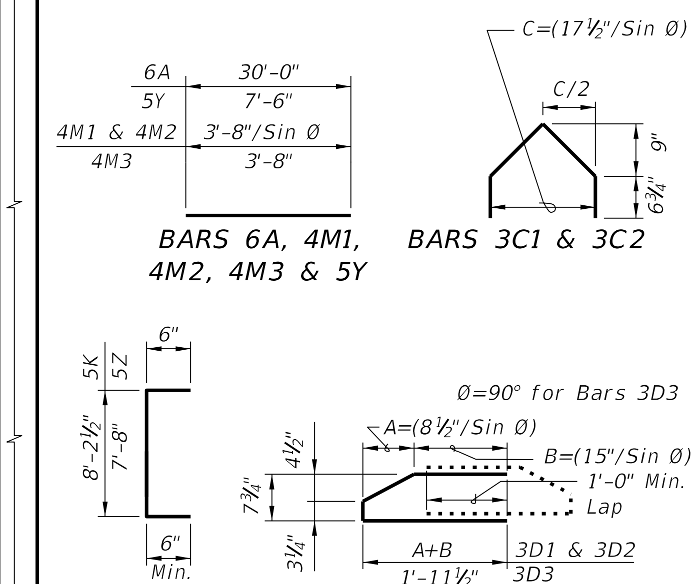
ELEVATION AT END OF BEAM
(Flanges Not Shown For Clarity)
(End 1 Shown, End 2 Similar)

CONVENTIONAL REINFORCING BAR BENDING DETAILS

BILL OF REINFORCING STEEL

MARK	NOTE NUMBERS	SIZE	NUMBER REQUIRED	LENGTH (NOTE 1)
A	—	6	8	30'-0"
C1	9, 10 & 11	3	23 (End 1)	Varies
C2	9, 10 & 11	3	23 (End 2)	Varies
D1	9, 10, 11 & 14	3	46 (End 1)	Varies
D2	9, 10, 11 & 14	3	46 (End 2)	Varies
D3	9 & 14	3	See Table	4'-3"
K	2, 9, 11 & 13	5	See Table	9'-2"
M1	9 & 10	4	21 (End 1)	Varies
M2	9 & 10	4	21 (End 2)	Varies
M3	9	4	See Table	3'-8"
N	3 & 4	½" Ø Strand	4	Dim. L
Y	9 & 11	5	16	7'-6"
Z	2, 9, 11 & 13	5	12	8'-8"

BENDING DIAGRAMS (See Note 1)



BARS 6A, 4M1, 4M2, 4M3 & 5Y

BARS 3C1 & 3C2

BARS 5K & 5Z

BARS 3D1, 3D2 & 3D3

NOTES:
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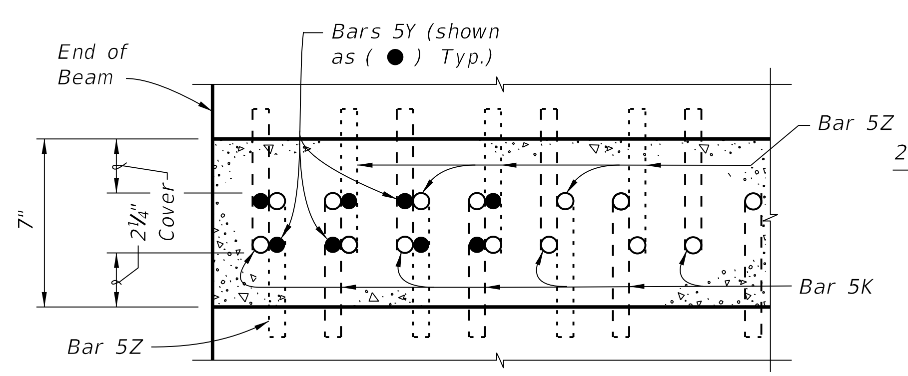
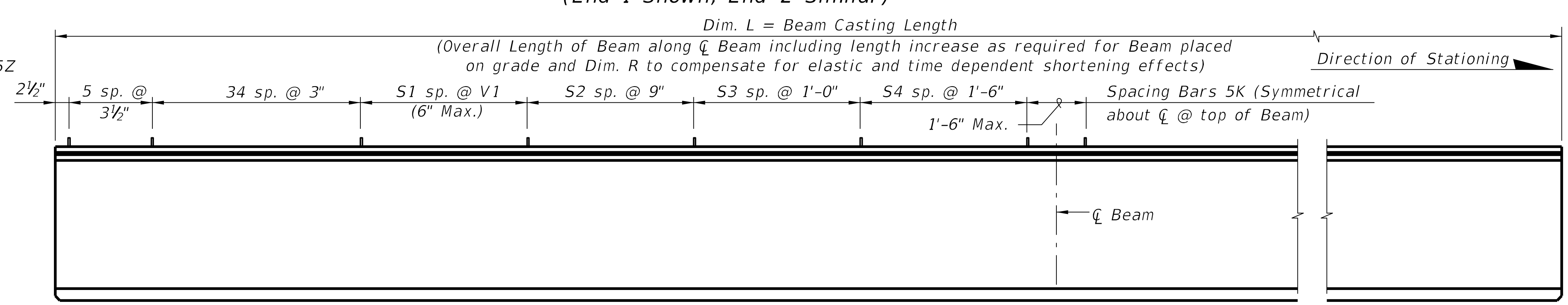
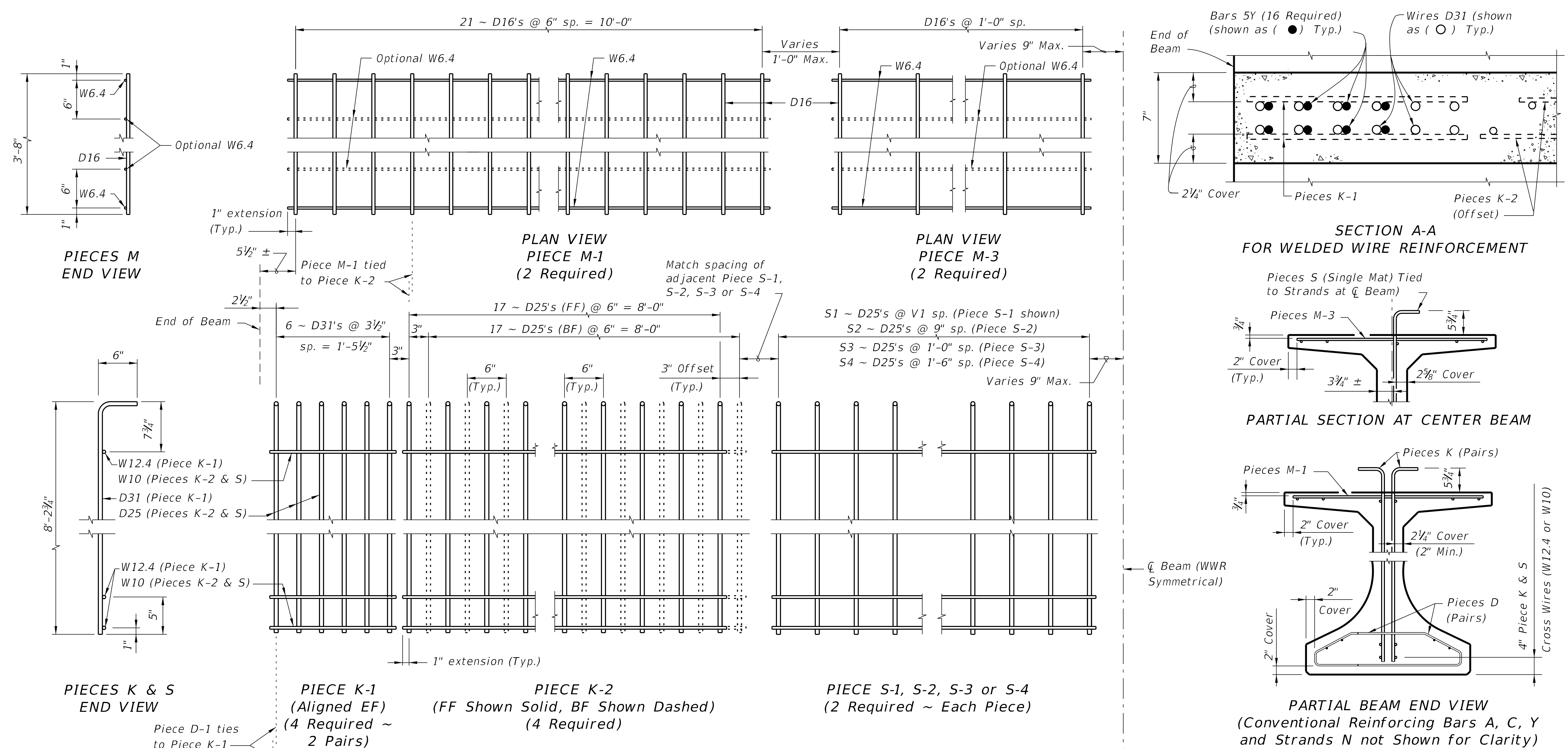
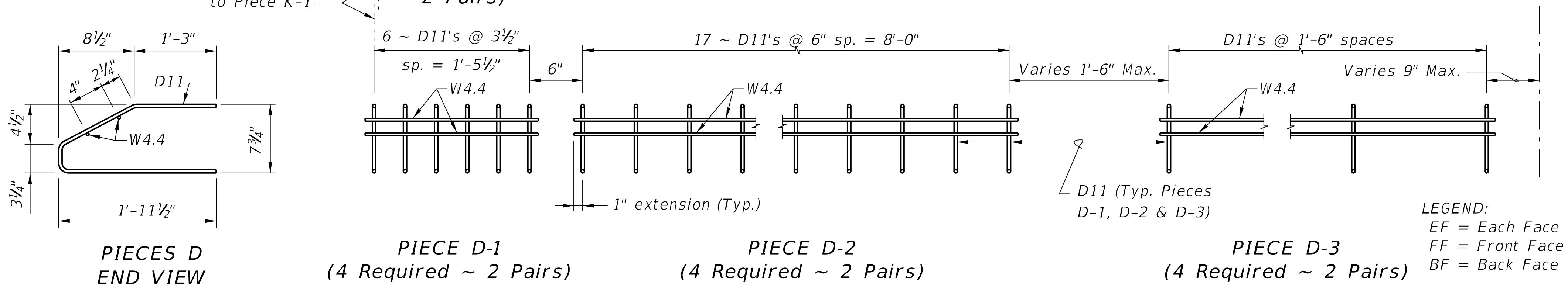


SECTION A-A FOR CONVENTIONAL REINFORCING
(Showing Bars 5K, 5Y & 5Z Only)



ELEVATION





NOTES:

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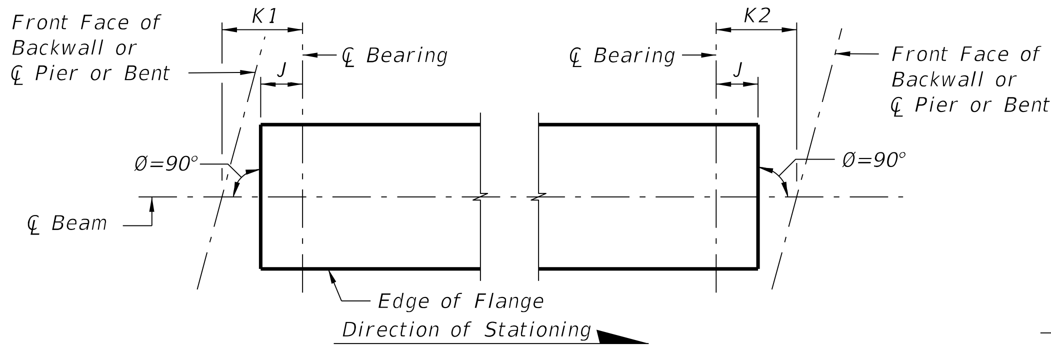
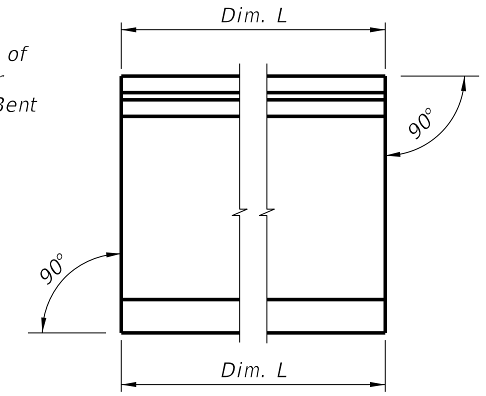
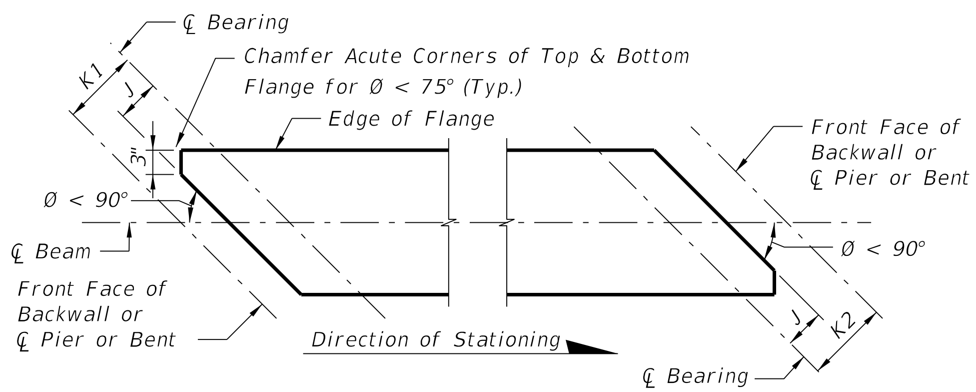


END 1 END 2

CASE 1
(Standard Orientation for New Construction)

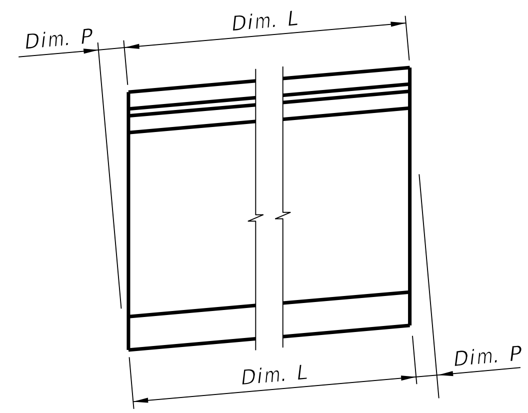


CONDITION 1
(Dim P = 0.0)

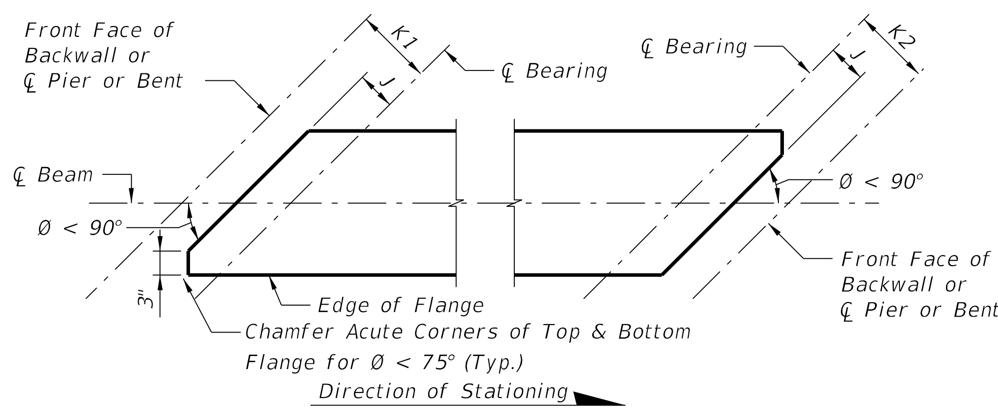


END 1 END 2

CASE 2
(Special Orientation for Widenings)

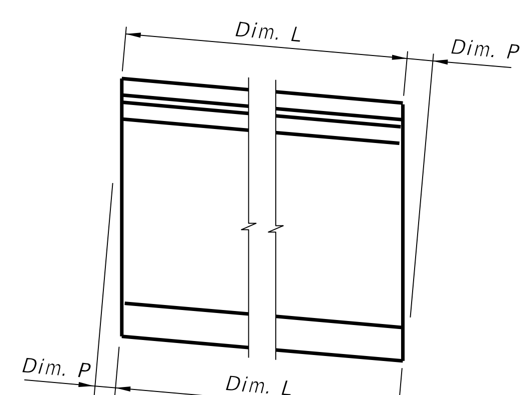


CONDITION 2



END 1 END 2

CASE 3
(Special Orientation for Widenings)



CONDITION 3

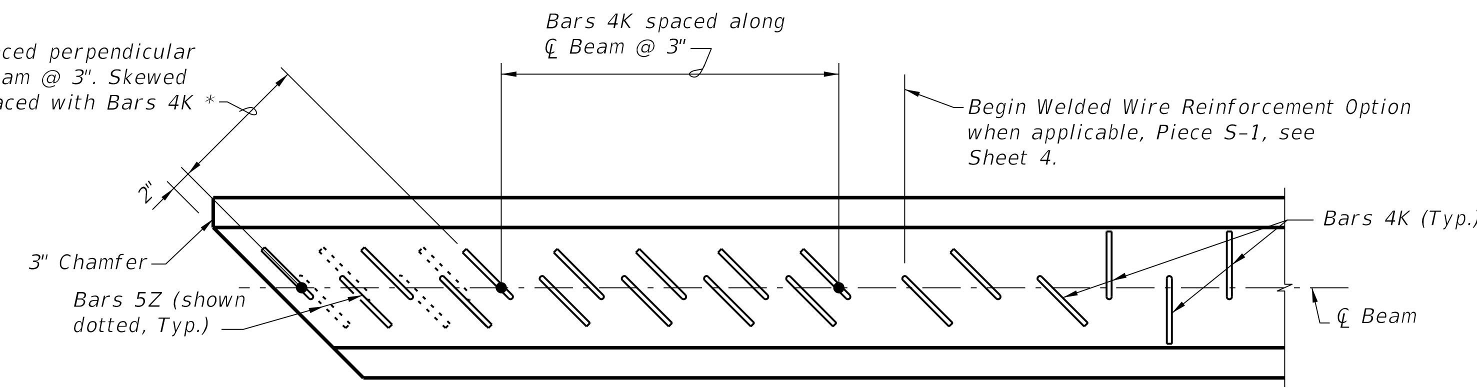
SCHEMATIC PLAN VIEWS AT BEAM ENDS

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

BEAM NOTES

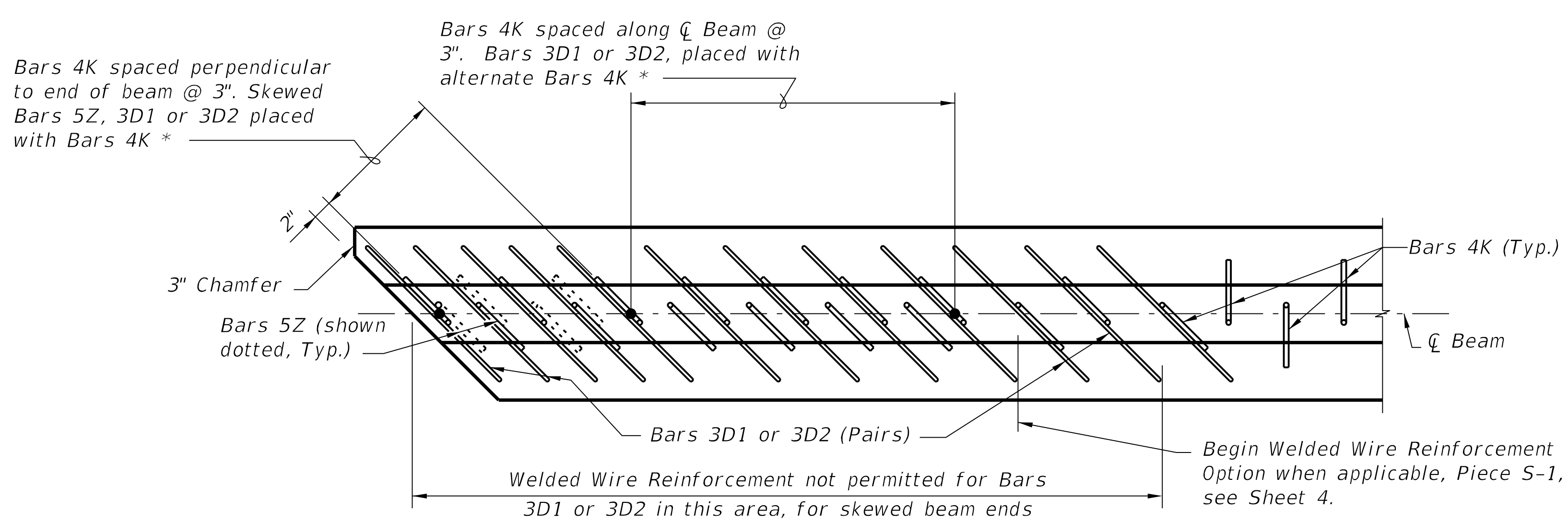
1. All bar dimensions are out-to-out.
2. Place one (1) Bar 4K, or 5Z at each location as detailed alternating the direction of the ends for each bar (see "ELEVATION AT END OF BEAM", Sheet 3).
3. Strands N shall be ASTM A416, Grade 270, seven-wire strands $\frac{3}{8}$" Ø or larger, stressed to 10,000 lbs. each.
4. For beams with ends not to be encased in permanent concrete diaphragms, after detensioning cut wedge to recess Prestressing Strands at the end of the beam without damaging the surrounding concrete. See "STRAND CUTTING AND PROTECTING DETAIL" on Sheet 2.
5. For beams with ends not to be encased in permanent concrete diaphragms, protect end of recessed strands in accordance with Specification Section 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 meet requirements of Specification Section 931.
8. Safety Line Anchorage Devices or sleeves are required and permitted in the top flange only to accomodate 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 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".
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



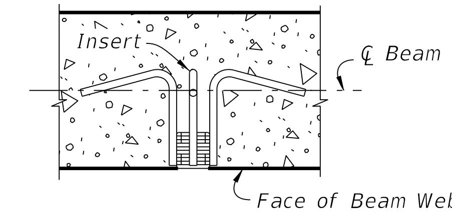
PARTIAL PLAN VIEW (SHOWING TOP FLANGE)
(End 1 Shown, End 2 Similar)
(Bars 5A, 4Y & Strands N not shown for clarity)

* 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)

SKEWED BEAM END DETAILS FOR WIDENING EXISTING BRIDGES

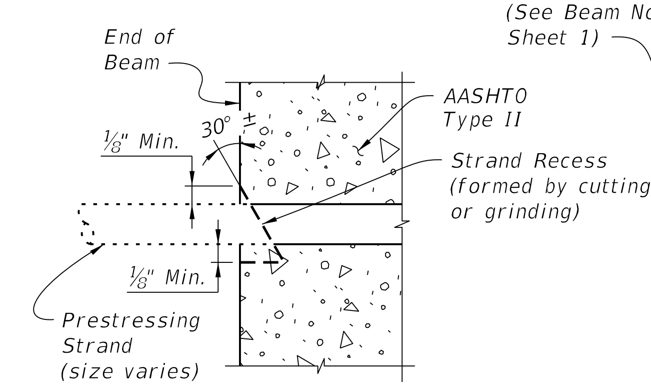


PLAN SECTION THRU BEAM WEB AT
INSERT FOR DIAPHRAGM REINFORCING
(When Intermediate Diaphragms are Required by Design)

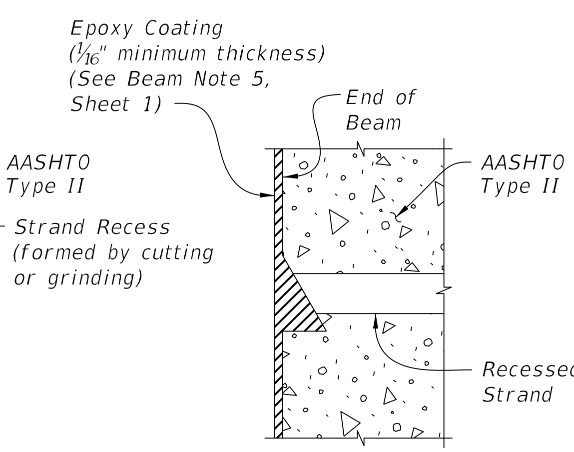
INSERT NOTES

1. Provide 1" Ø, zinc-electroplated, ferrule wing nut or coil inserts, UNC threads, 1/0 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 CUT STRAND RECESS LIMITS



TYPICAL SECTION
AFTER PROTECTING

STRAND CUTTING AND PROTECTING DETAIL

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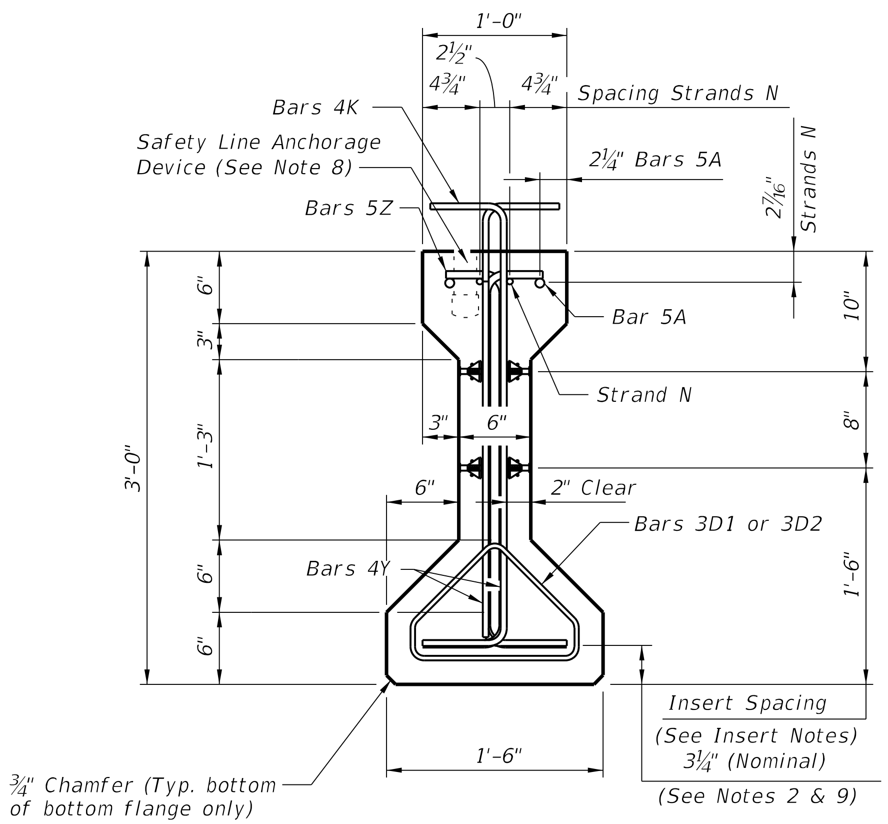
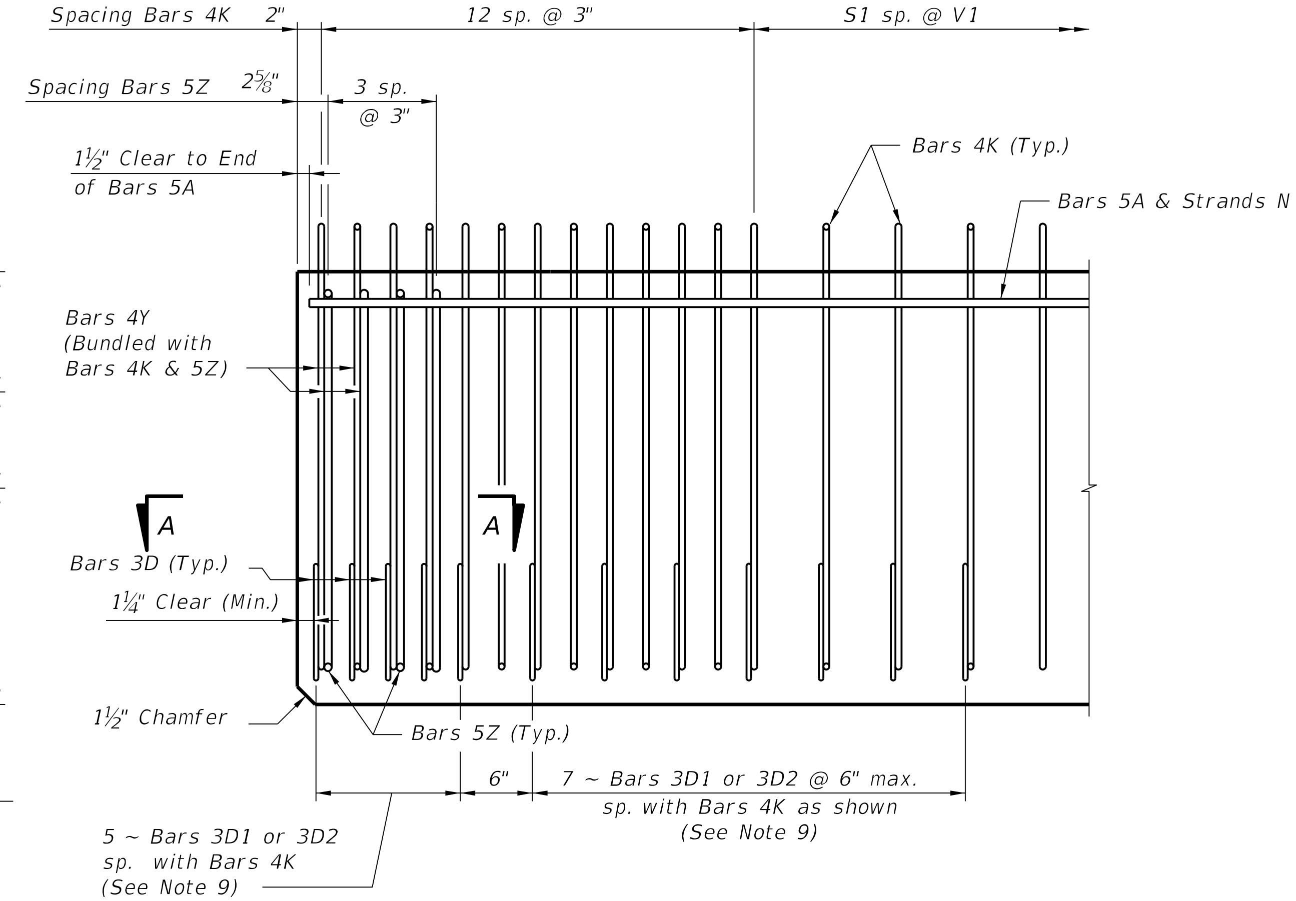
DETAILS AND NOTES

LAST REVISION	REVISION	DESCRIPTION:	FDOT	2015 DESIGN STANDARDS	AASHTO TYPE II BEAM	INDEX NO.	SHEET NO.
07/01/14						20120	2 of 4



END VIEW

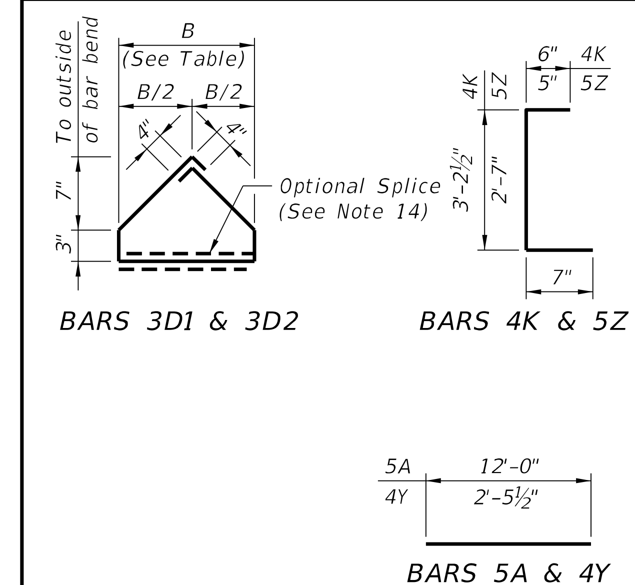


ELEVATION AT END OF BEAM
(Flanges Not Shown For Clarity)

BILL OF REINFORCING STEEL FOR ONE BEAM ONLY

MARK	NOTE NUMBERS	SIZE	NUMBER REQUIRED	LENGTH (NOTE 1)
A	—	5	4	12'-0"
D1	9, 11 & 14	3	12	See Table
D2	9, 11 & 14	3	12	See Table
K	2, 9, 11 & 13	4	See Table	4'-4"
N	3 & 5	⅜" Ø Strand	2	DIM L+5"
Y	9 & 11	4	8	2'-6"
Z	2, 9, 11 & 13	5	8	3'-7"

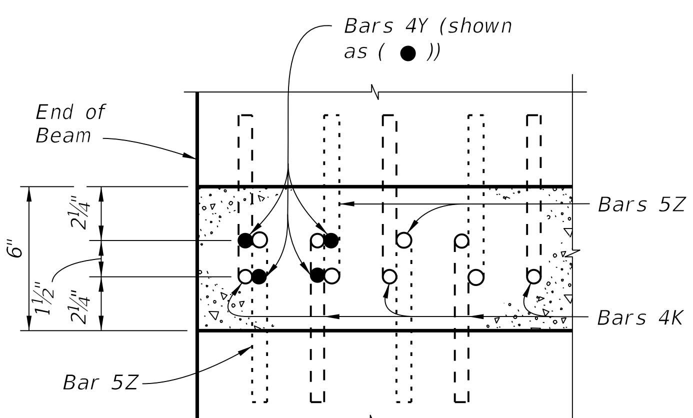
BENDING DIAGRAMS (See Note 1)



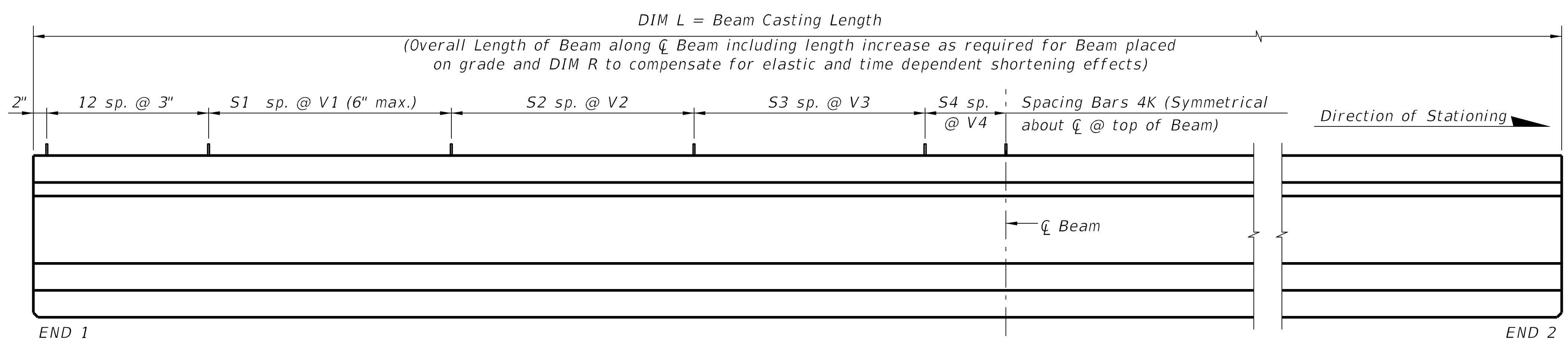
NOTES:
Work this Index with the AASHTO Type II Beam – Table of Beam Variables in Structures Plans.

For referenced notes, see Sheet 1.

For Dimensions L, R, V1 thru V4 and number of spaces S1 thru S4, see AASHTO Type II Beam – Table of Beam Variables.



SECTION A-A
(Showing Bars 4K, 4Y & 5Z Only)



ELEVATION

STANDARD DETAILS

LAST REVISION	REVISION	DESCRIPTION:	FDOT 2015 DESIGN STANDARDS	AASHTO TYPE II BEAM	INDEX NO.	SHEET NO.
07/01/13					20120	3 of 4

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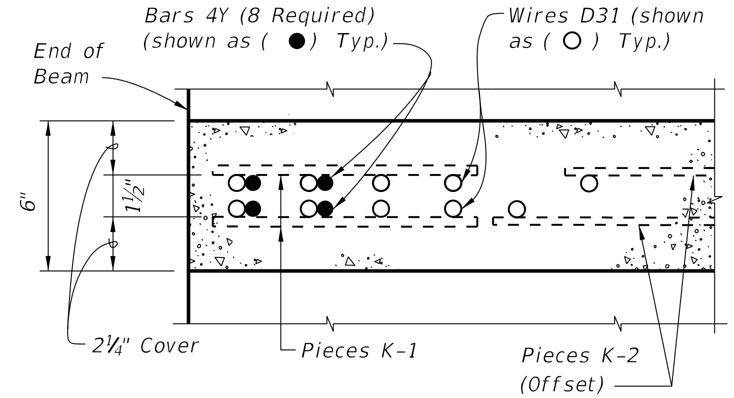
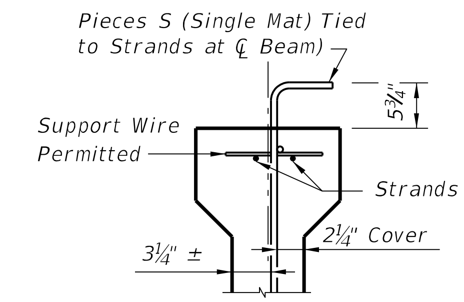
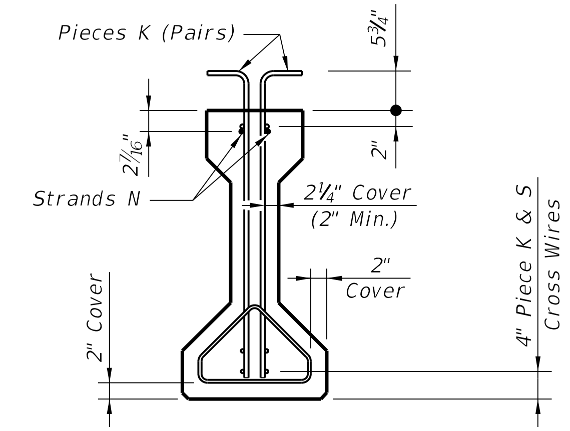


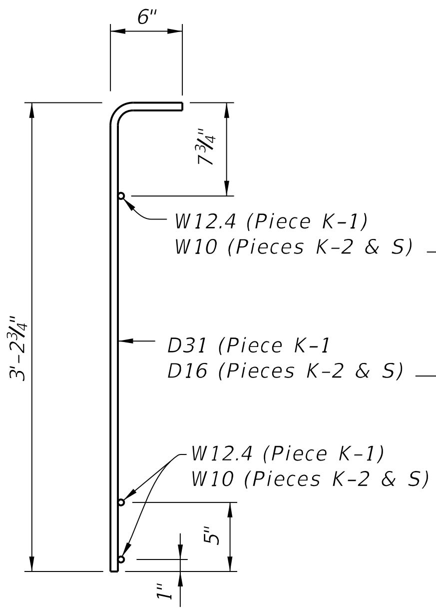
SECTION A-A
FOR WELDED WIRE REINFORCEMENT



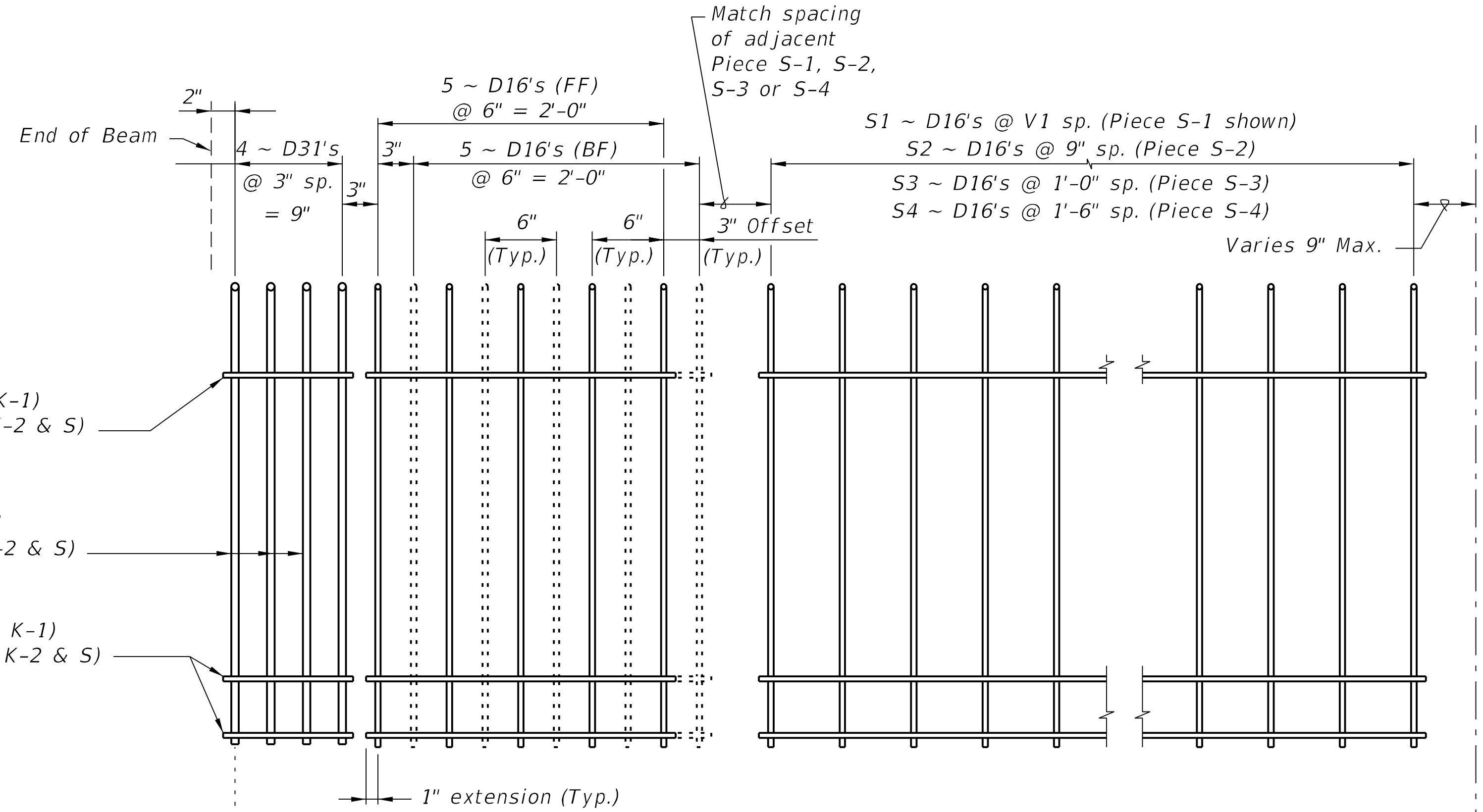
PARTIAL SECTION AT CENTER BEAM



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



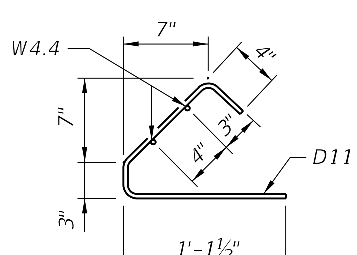
PIECES K & S
END VIEW



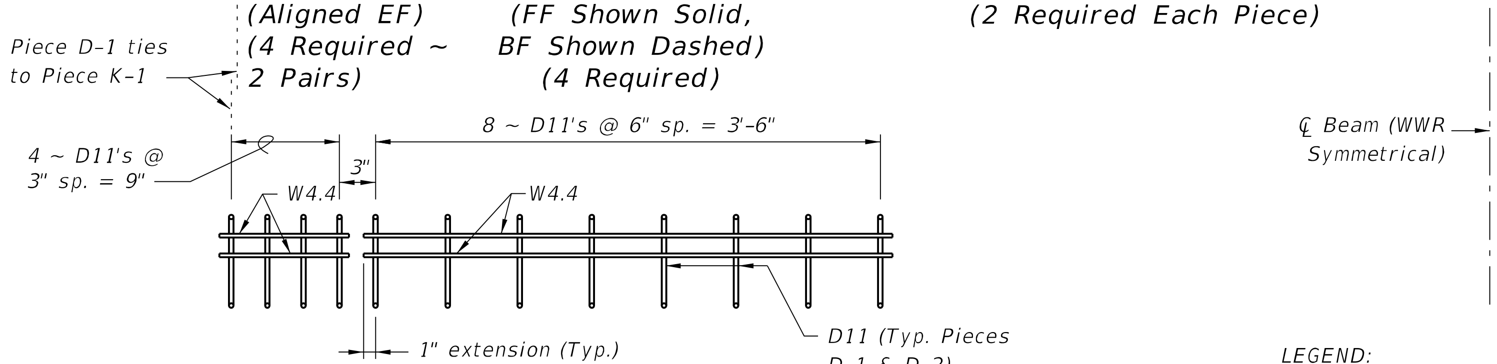
PIECE K-1
(Aligned EF)
(4 Required ~ 2 Pairs)

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

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



PIECES D
END VIEW



PIECE D-1
(4 Required ~ 2 Pairs)

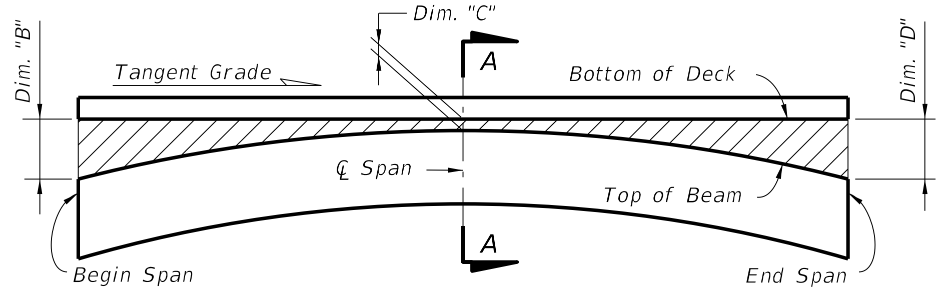
PIECE D-2
(4 Required ~ 2 Pairs)

LEGEND:
EF = Each Face
FF = Front Face
BF = Back Face

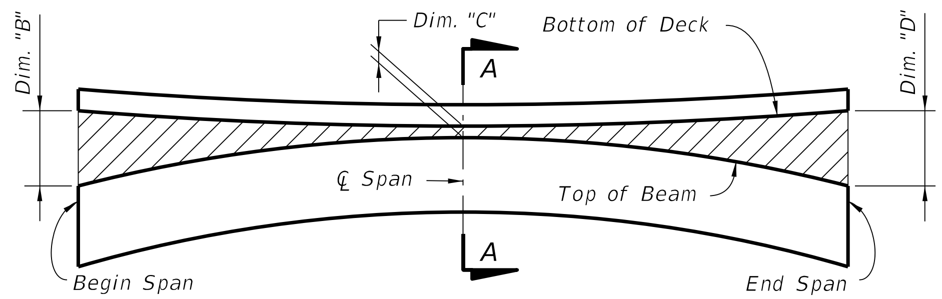
NOTES:

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 Skew Details and Sheet 1 Note 9 for placement details. Shift Pieces K & Bars 4Y to accommodate skewed end conditions and align with Bars D.

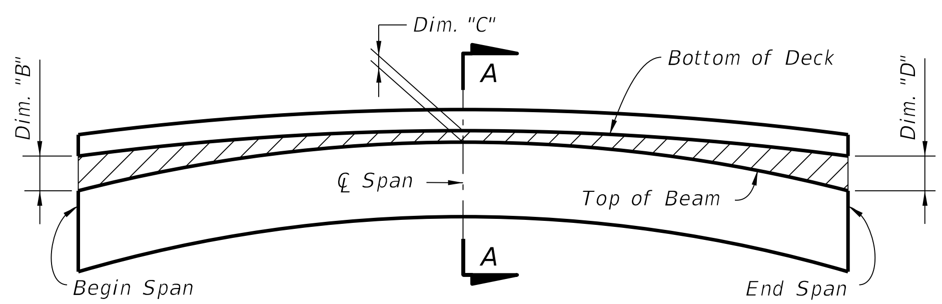
STANDARD DETAILS



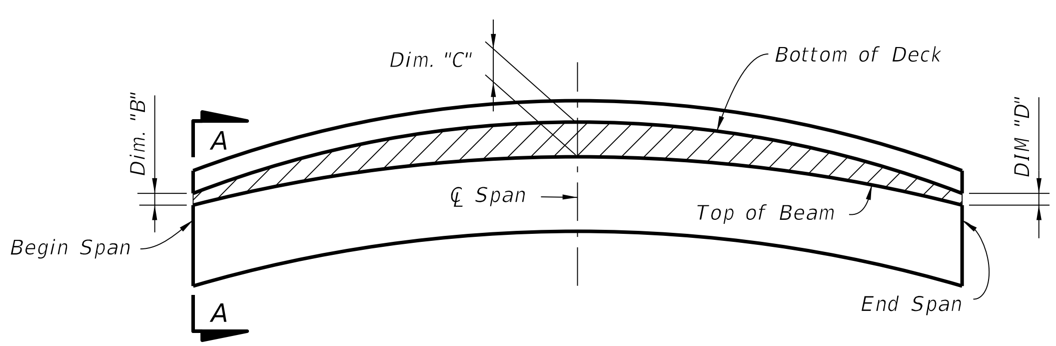
BUILD-UP DIAGRAM FOR TANGENT SPANS
(ALONG ℄ BEAM) (CASE 1)



BUILD-UP DIAGRAM FOR SAG VERTICAL CURVE SPANS
(ALONG ℄ BEAM) (CASE 2)



BUILD-UP DIAGRAM FOR CREST VERTICAL CURVE SPANS
- CONTROL AT ℄ SPAN
(ALONG ℄ BEAM) (CASE 3)

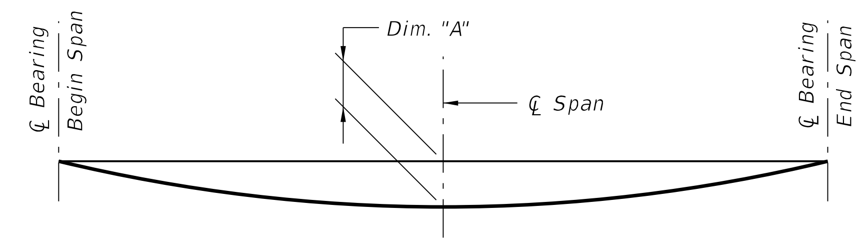


BUILD-UP DIAGRAM FOR CREST VERTICAL CURVE SPANS
- CONTROL AT BEGIN OR END SPAN
(ALONG ℄ BEAM) (CASE 4)

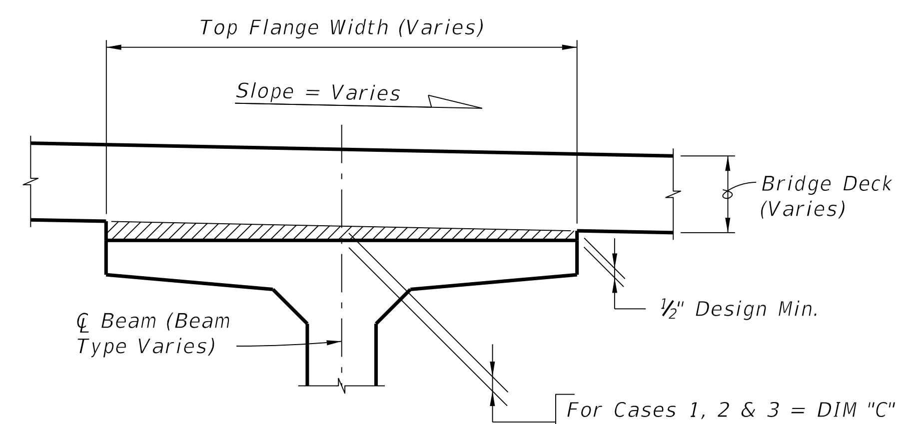
BEAM CAMBER AND BUILD-UP NOTES:

The build-up values given in the Data Table are based on theoretical beam cambers. The Contractor shall monitor beam cambers for the purpose of predicting camber values at the time of the deck pour. If the predicted cambers based on field measurements differ more than +/- ½" from the theoretical "Net Beam Camber @ 120 Days" shown in the Data Table*, obtain approval from the Engineer to modify the build-up dimensions as required. When the measured beam cambers create a conflict with the bottom mat of deck steel, notify the Engineer a minimum of 21 days prior to casting.*

Dim. "A" includes the weight of the Stay-In-Place Formwork.



DEAD LOAD DEFLECTION DIAGRAM



SECTION A-A
BUILD-UP OVER BEAMS
(Florida-I Beam Shown
AASHTO Type II Similar)

* NOTE:
Work this Index with the Build-up and Deflection Data Table for Florida-I and AASHTO Type II Beams in Structures Plans.

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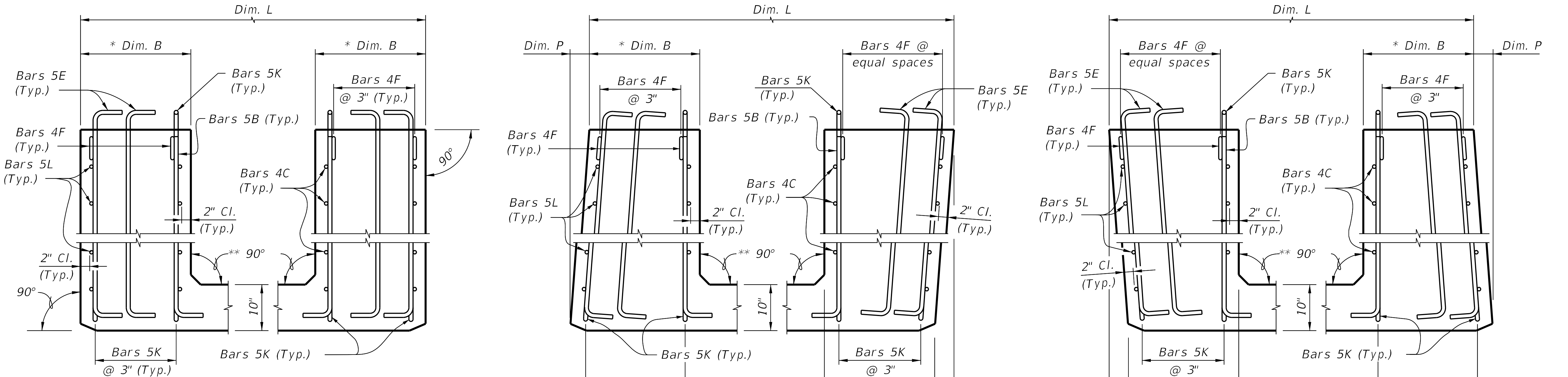


* Dim. B is 1'-6" for Florida-U 48 and 54 Beams and 2'-0" for Florida-U 63 and 72 Beams.

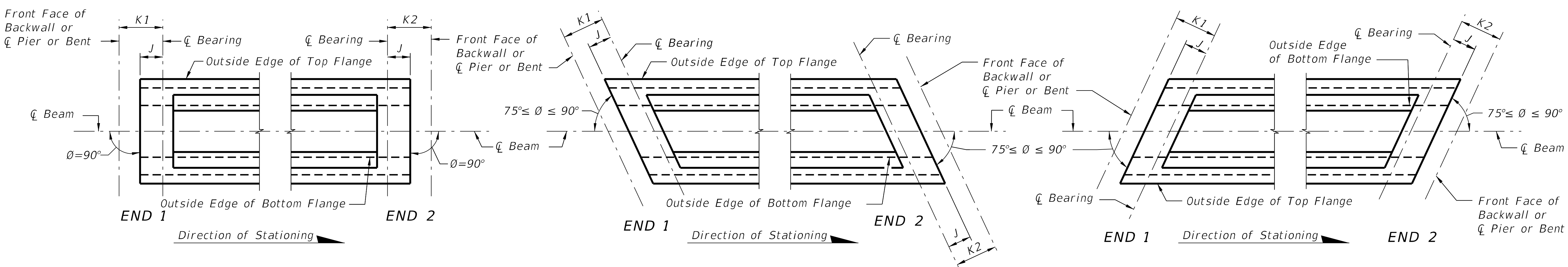
** Concrete face may be sloped with a maximum 1:24 draft to facilitate formwork removal.

CONDITION 1
(P = 0.0)

CONDITION 2

CONDITION 3

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



CASE 1

CASE 2

CASE 3

SCHEMATIC PLAN VIEWS AT BEAM ENDS

NOTE:
Work this Index with Florida-U Beam - Table of Beam Variables in Structures Plans.

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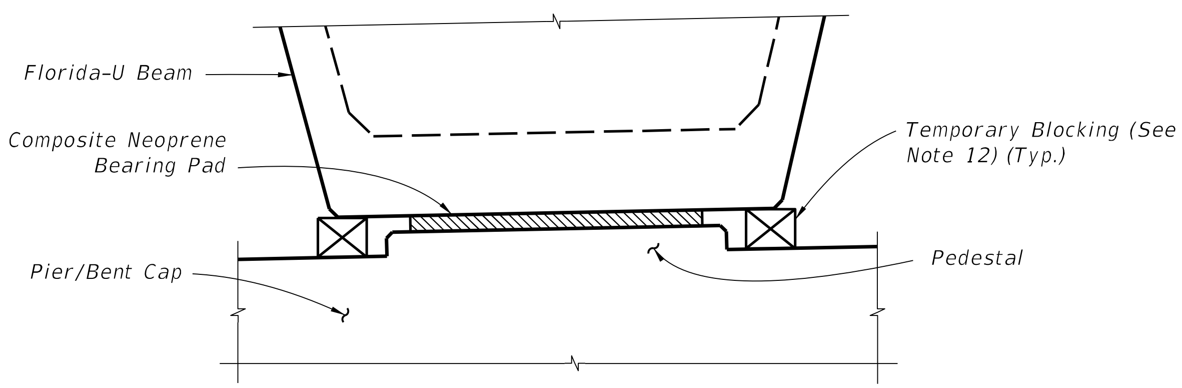
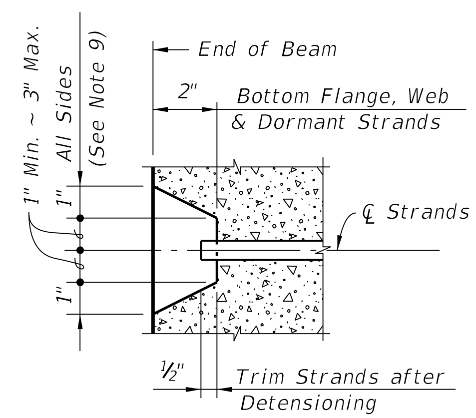
LAST REVISION	REVISION	DESCRIPTION:	FDOT 2015 DESIGN STANDARDS	TYPICAL FLORIDA-U BEAM DETAILS AND NOTES	INDEX NO.	SHEET NO.
01/01/12					20210	1 of 2



TEMPORARY BLOCKING OF BEAM ENDS



TYPICAL STRAND BLOCKOUT DETAIL

BEAM NOTES

1. All bar dimensions are out-to-out.
2. Strands N (Dormant Strands) shall be ASTM A416, Grade 270, seven-wire strands ⅜" Ø or larger, stressed to 10,000 lbs. each.
3. Unless otherwise noted in Structures Plans, the minimum concrete cover for reinforcing steel shall be 2".
4. At the option of the Contractor and with the Engineer's Approval, deformed welded wire reinforcement (WWR) may be used in lieu of Bars 6A1, 4A2, 5B, 4C, 3D, 5E, 4F, 4G, 4H, 5K, 5L and 4M except as noted below in note 7, provided the wire sizes and spacing match those shown on the Standard Beam Detail sheets for these bars. WWR must consist of Deformed wire meeting the requirements of Specification Section 931.
5. Safety Line Anchorage Devices or sleeves are required and permitted in the top flanges only to accomodate fall protection systems used during construction. See shop drawings for details and spacing of any required embedments.
6. For Beams with vertically beveled end conditions when "Dim. P" exceeds 1", Bars 5E and the first Bars 4F and 5K shall be placed parallel to the end of the beam. The remaining Bars 4F and 5K within the limits of "Dim. B" shall be fanned at equal spaces.
7. Welded deformed wire reinforcement shall not be used for the end reinforcement (Bars 5B, 4C, 3D, 5E, 4F, 5K, and 5L) for beams with skewed end conditions or vertically beveled end conditions when "Dim. P" exceeds 1".
8. Bars 5K shall be placed and tied to the fully bonded strands in the bottom row (see "STRAND PATTERN" in Structures Plans).
9. Strand Protection at beam ends shall consist of a 2" deep recess formed around all strands (including dormant) or strand groups. Extend recess to face of web and bottom of flange for bottom row of strands. After detensioning, cut strands ½" from recessed surface and fill the recess with a Type F-2 or Q Epoxy Compound in accordance with Section 926 of the Specifications.
10. Use Size No. 67 maximum sized aggregate.
11. Use Stay-in-Place metal deck forms inside the beams.
12. Prior to deck placement, based on the deck forming system and deck placement sequence, evaluate and provide, if necessary, temporary bracing between the U Beams. Also, prior to deck placement, provide temporary blocking under each web at both ends of every beam. Ensure the temporary blocking is adequate to resist movements and rotations that occur during placement of the deck. Leave temporary blocking and bracing in place for a minimum of four days after the deck placement.
13. For referenced Dimensions, Angles and Case Numbers see Table of Beam Variables in Structures Plans.

NOTE:
Work this Index with Florida-U Beam - Table of Beam Variables in Structures Plans.

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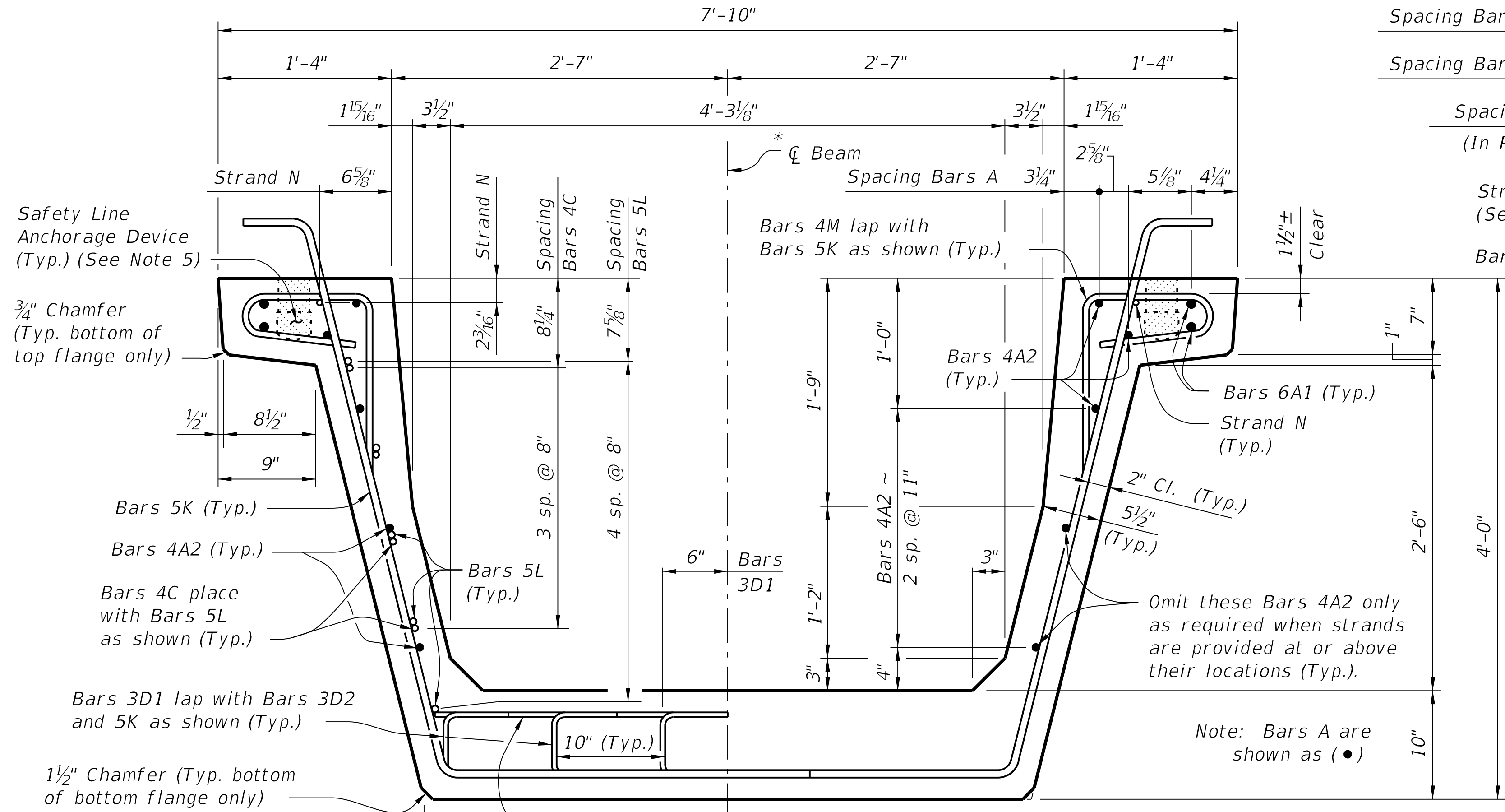


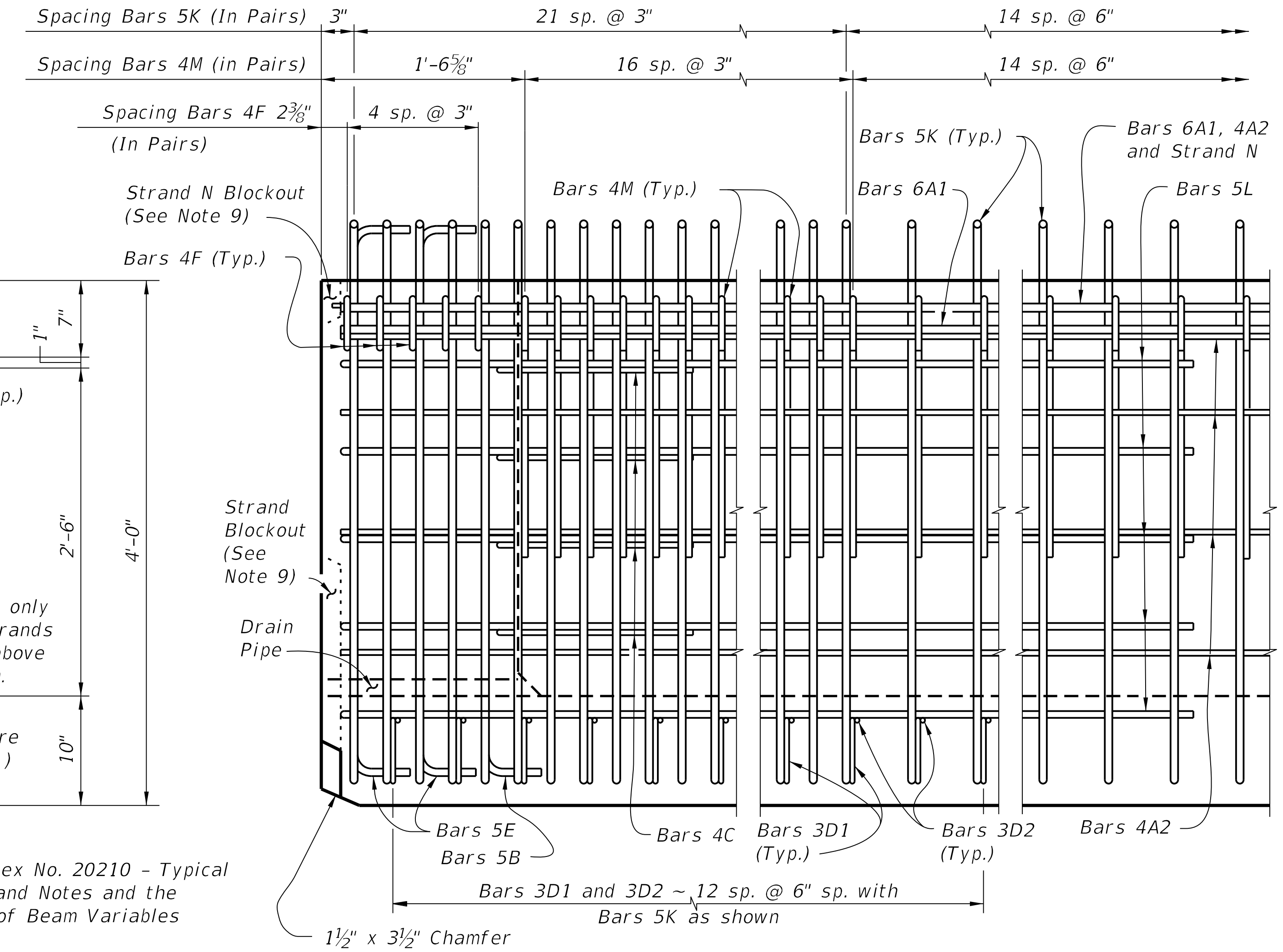
* Reinforcing steel is symmetrical about ℄ Beam for Half Sections A-A and B-B.

** Intermediate Diaphragms shall be provided:
(1) - At midspan.
(2) - At 20'-0" Max. from midspan when beam length (L) exceeds 60 Ft.

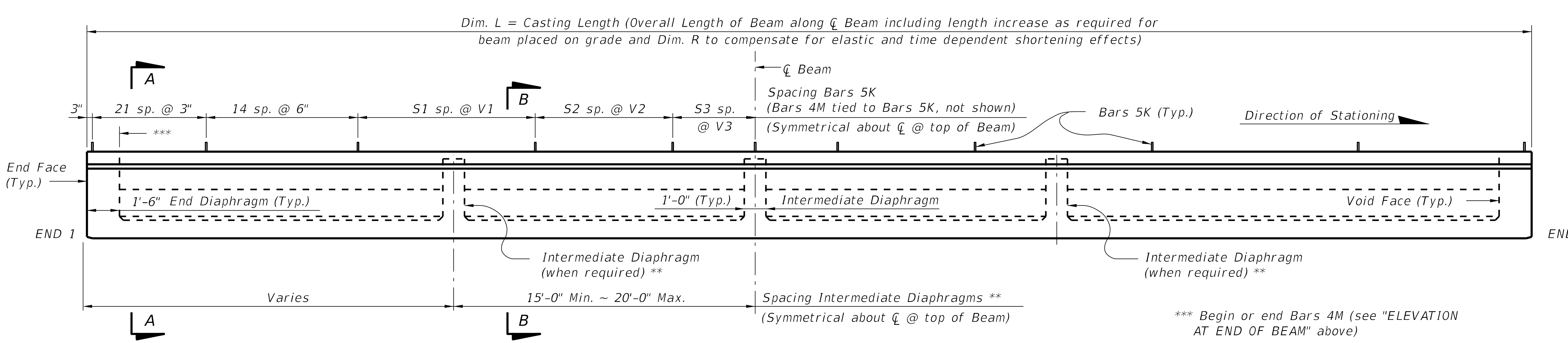
TYPICAL SECTION

NOTES:
Work this Index with Index No. 20210 - Typical Florida-U Beam Details and Notes and the Florida-U Beam - Table of Beam Variables in Structures Plans.

For referenced notes see Index No. 20210.



ELEVATION AT END OF BEAM



*** Begin or end Bars 4M (see "ELEVATION AT END OF BEAM" above)

ELEVATION

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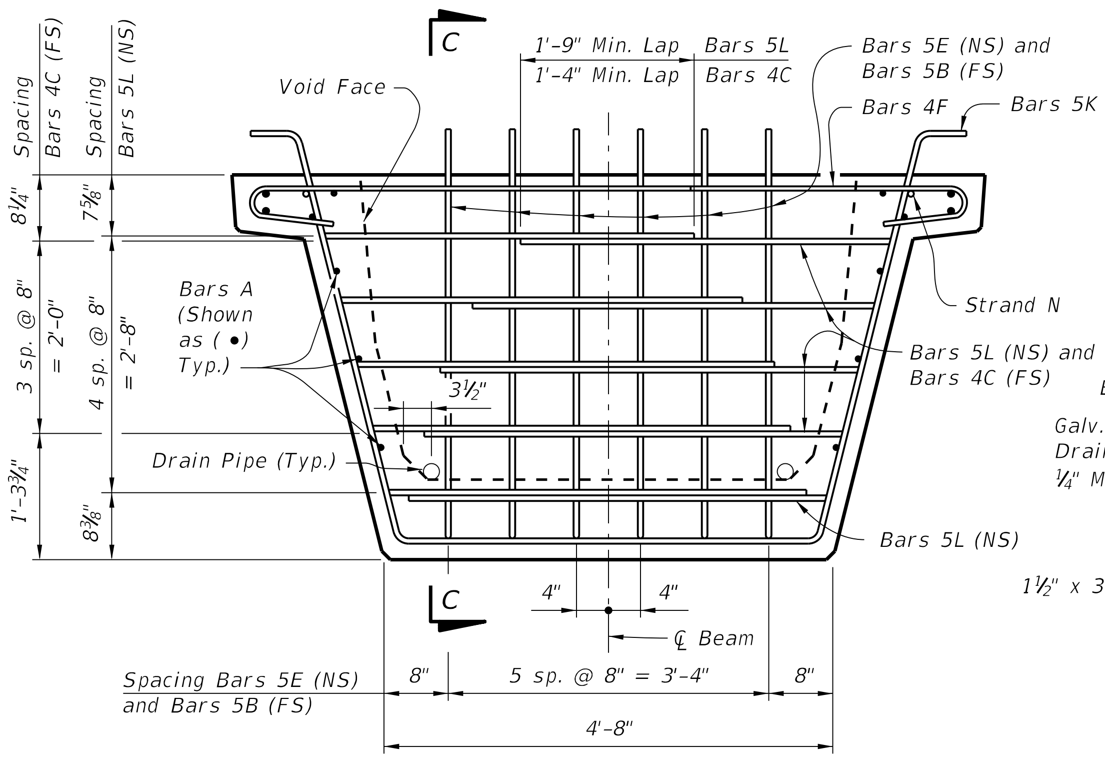
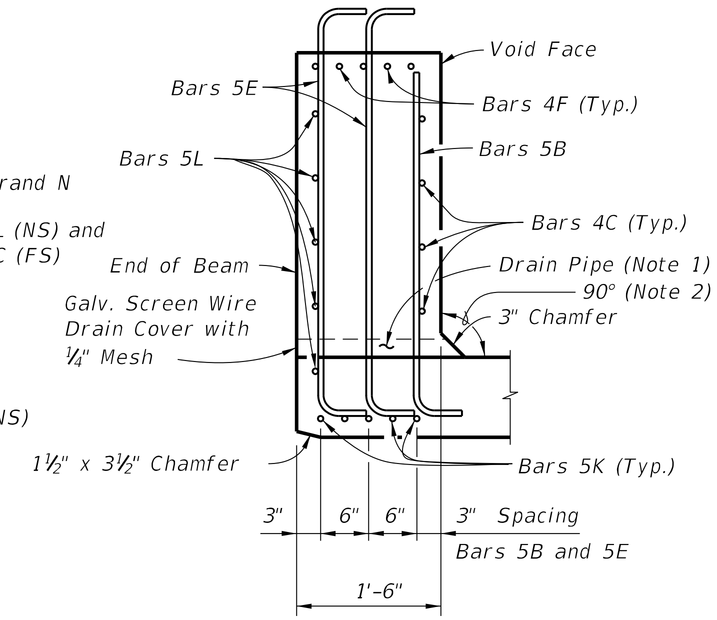
LAST REVISION	REVISION	DESCRIPTION:			INDEX NO.	SHEET NO.
07/01/12			FDOT 2015 DESIGN STANDARDS	FLORIDA-U 48 BEAM - STANDARD DETAILS	20248	1 of 3



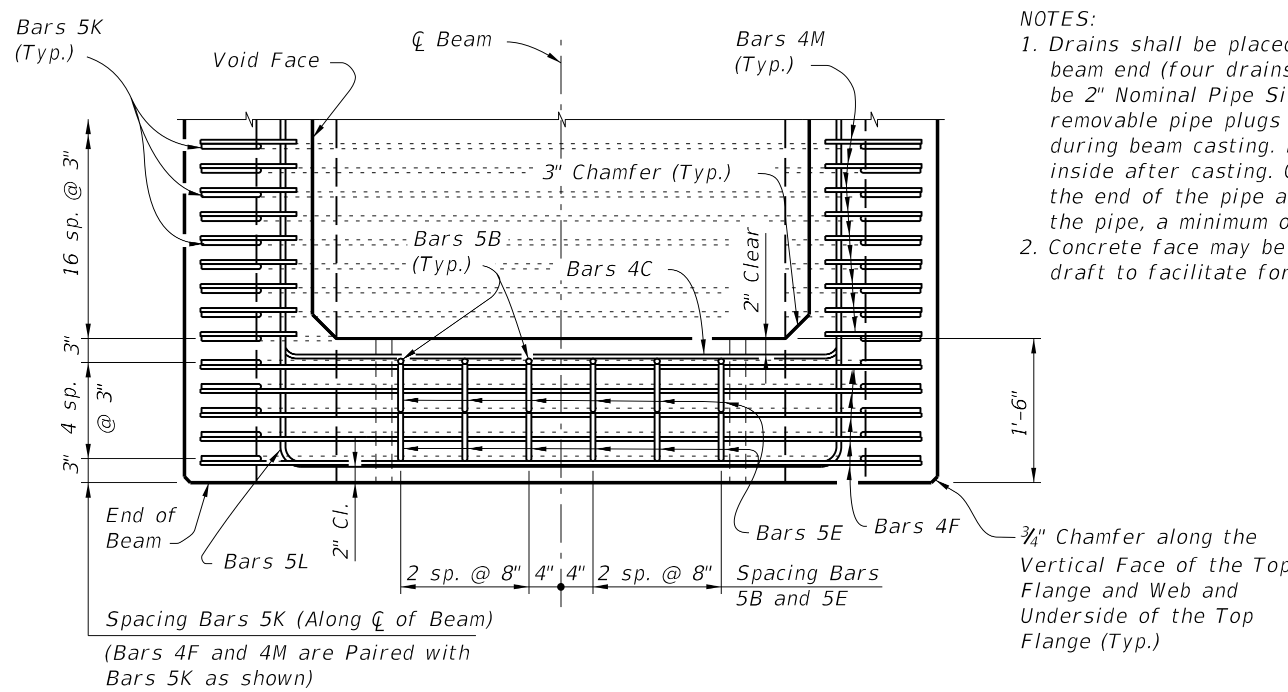
END VIEW AT END DIAPHRAGM



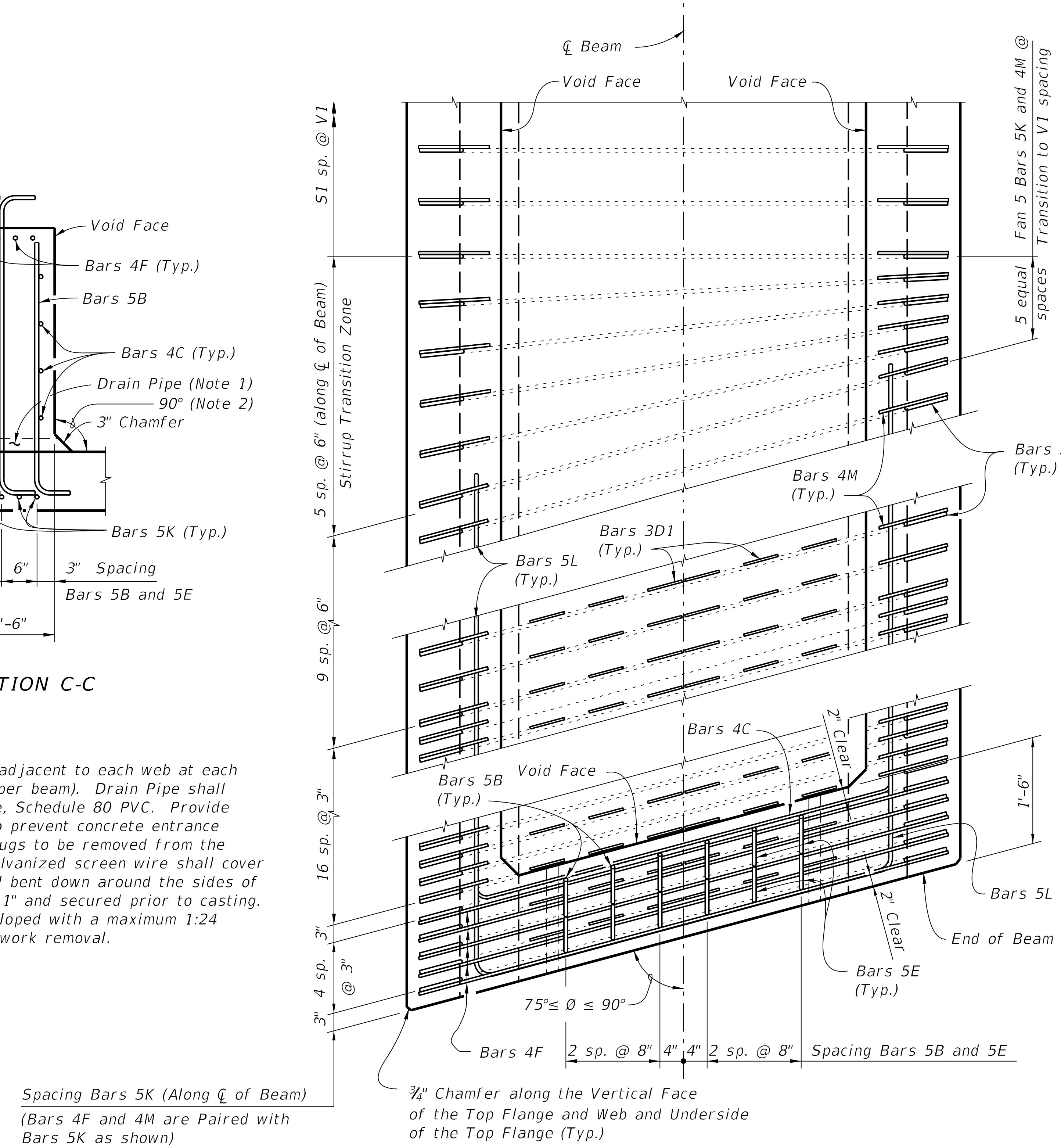
SECTION C-C

NOTES:

1. Drains shall be placed adjacent to each web at each beam end (four drains per beam). Drain Pipe shall be 2" Nominal Pipe Size, Schedule 80 PVC. Provide removable pipe plugs to prevent concrete entrance during beam casting. Plugs to be removed from the inside after casting. Galvanized screen wire shall cover the end of the pipe and bent down around the sides of the pipe, a minimum of 1" and secured prior to casting.
2. Concrete face may be sloped with a maximum 1:24 draft to facilitate formwork removal.



TOP VIEW OF END DIAPHRAGM
(Bars 3D1 And 3D2 Not Shown For Clarity)



TOP VIEW OF SKEWED END DIAPHRAGM
AND STIRRUP TRANSITION ZONE
(Bars 3D2 Not Shown For Clarity)

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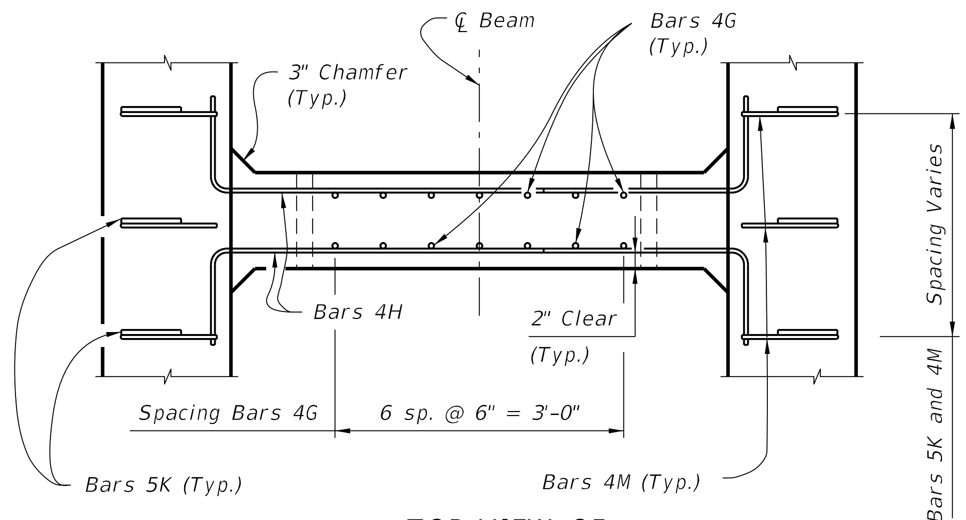
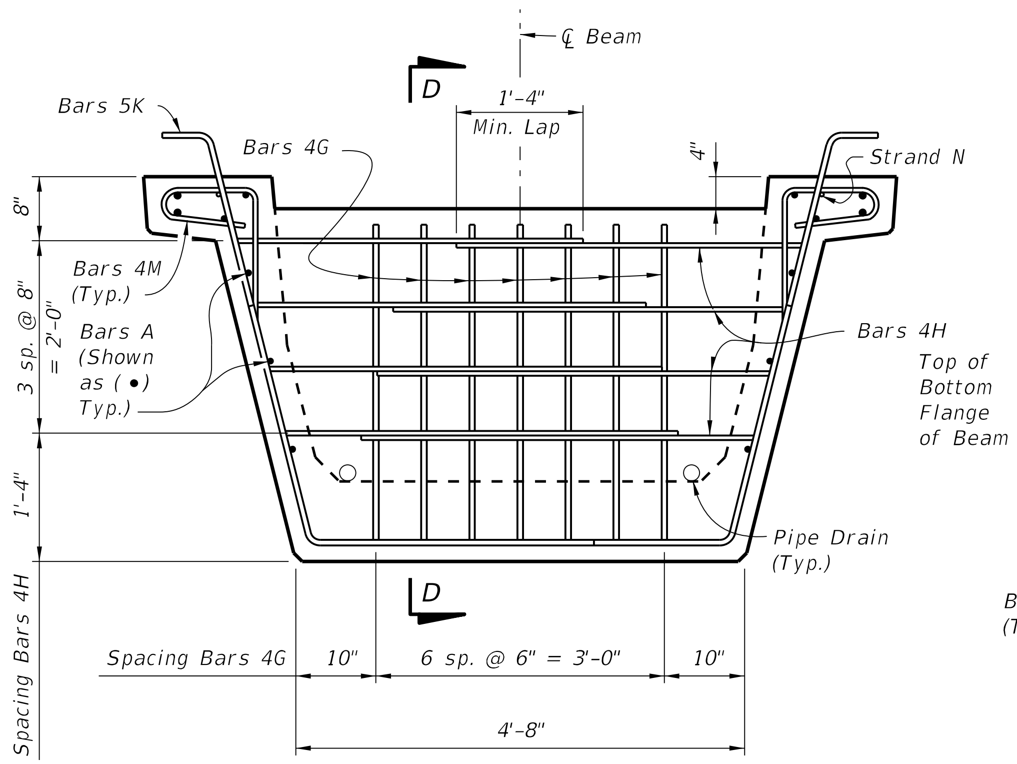
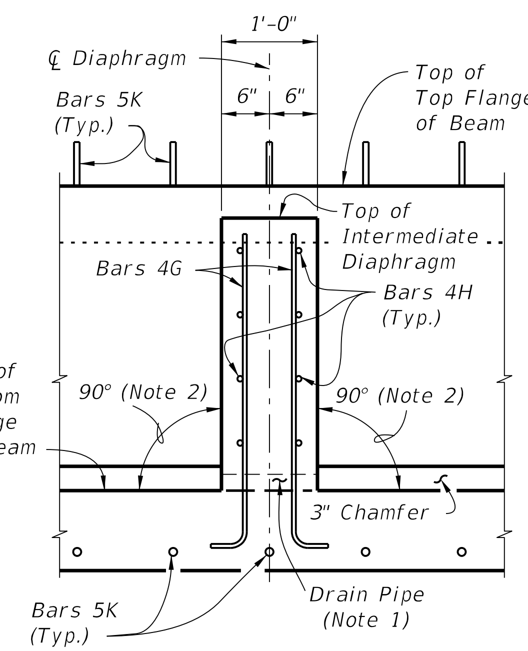
LAST REVISION	REVISION	DESCRIPTION:			INDEX NO.	SHEET NO.
07/01/05			FDOT 2015 DESIGN STANDARDS	FLORIDA-U 48 BEAM - STANDARD DETAILS	20248	2 of 3



TOP VIEW OF
INTERMEDIATE DIAPHRAGM



SECTION AT INTERMEDIATE DIAPHRAGM



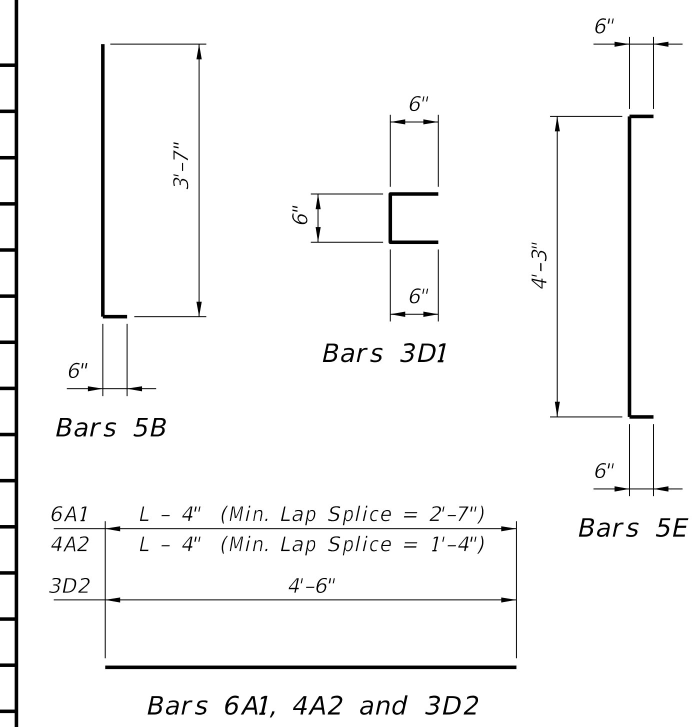
SECTION D-D

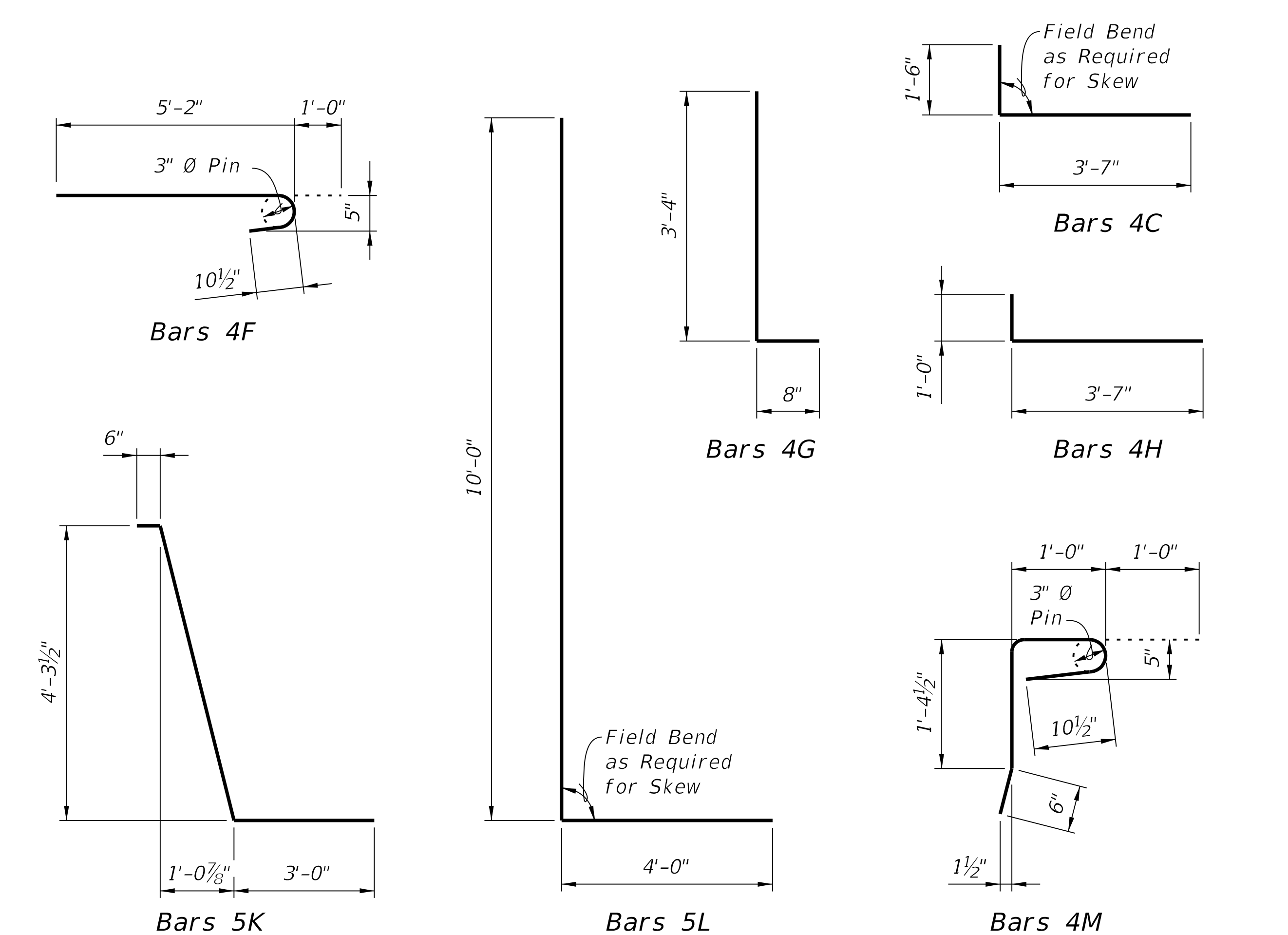
NOTES:
1. Drains shall be placed adjacent to each web at each intermediate diaphragm (two drains per intermediate diaphragm). Drain Pipe shall be 2" Nominal Pipe Size, Schedule 80 PVC. Provide removable pipe plugs to prevent concrete entrance during beam casting. Plugs to be removed from the inside after casting.
2. Concrete face may be sloped with a maximum 1:24 draft to facilitate formwork removal.
3. Intermediate diaphragms must be cast and concrete release strength obtained prior to removing beam from casting bed.

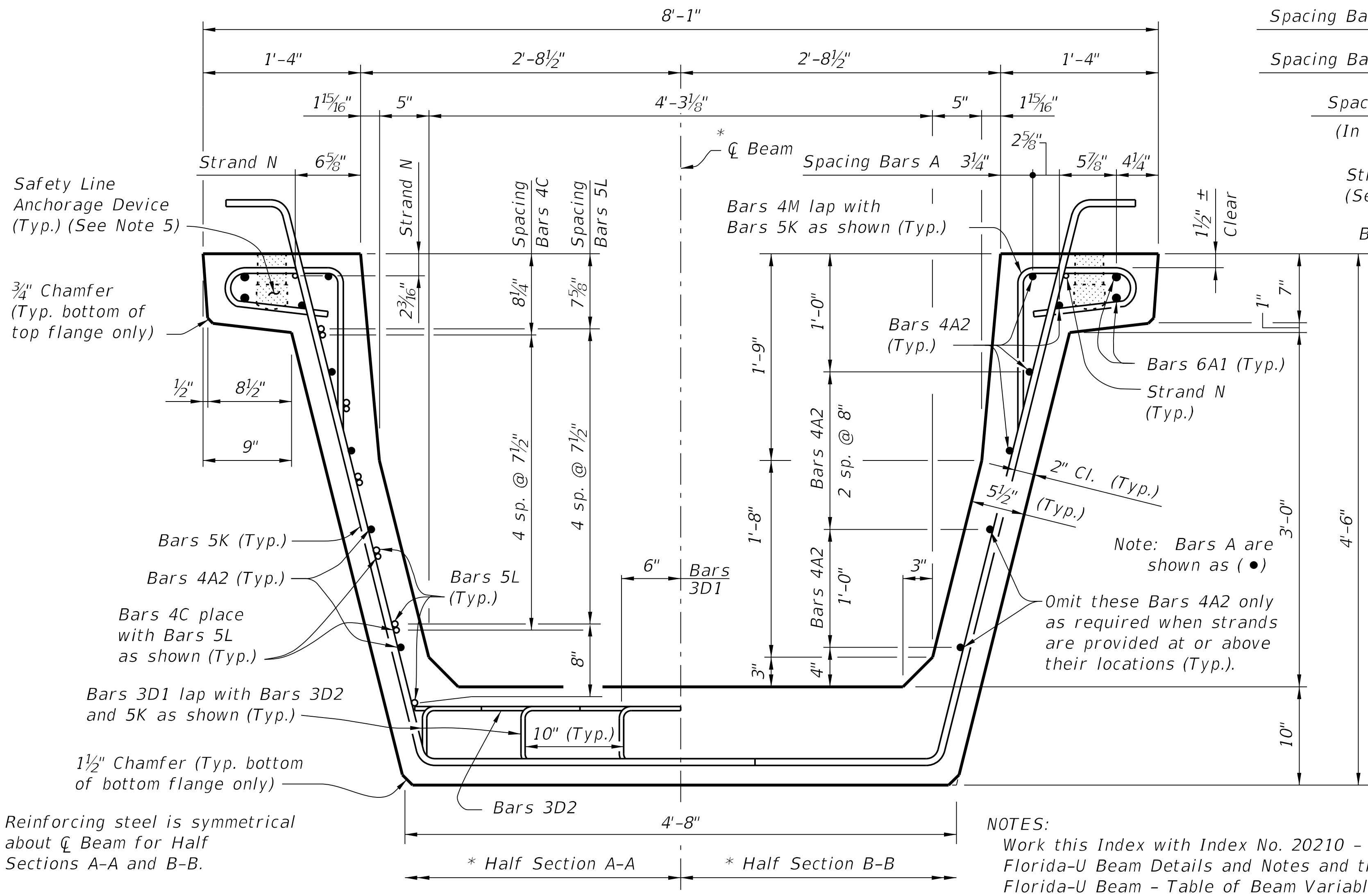
CONVENTIONAL REINFORCING STEEL BENDING DIAGRAMS

BILL OF REINFORCING STEEL FOR ONE BEAM ONLY

MARK	SIZE	NO. REQD.	LENGTH
A1	6	4	Dim. L - 4"
A2	4	10	Dim. L - 4"
B	5	12	4'-1"
C	4	16	5'-1"
D1	3	156	1'-6"
D2	3	26	4'-6"
E	5	24	5'-3"
F	4	20	6'-2"
G	4	See Table	4'-0"
H	4	See Table	4'-7"
K	5	See Table	8'-0"
L	5	20	14'-0"
M	4	See Table	3'-11"
N	⅜" Ø Strand	2	Dim. L - 3"







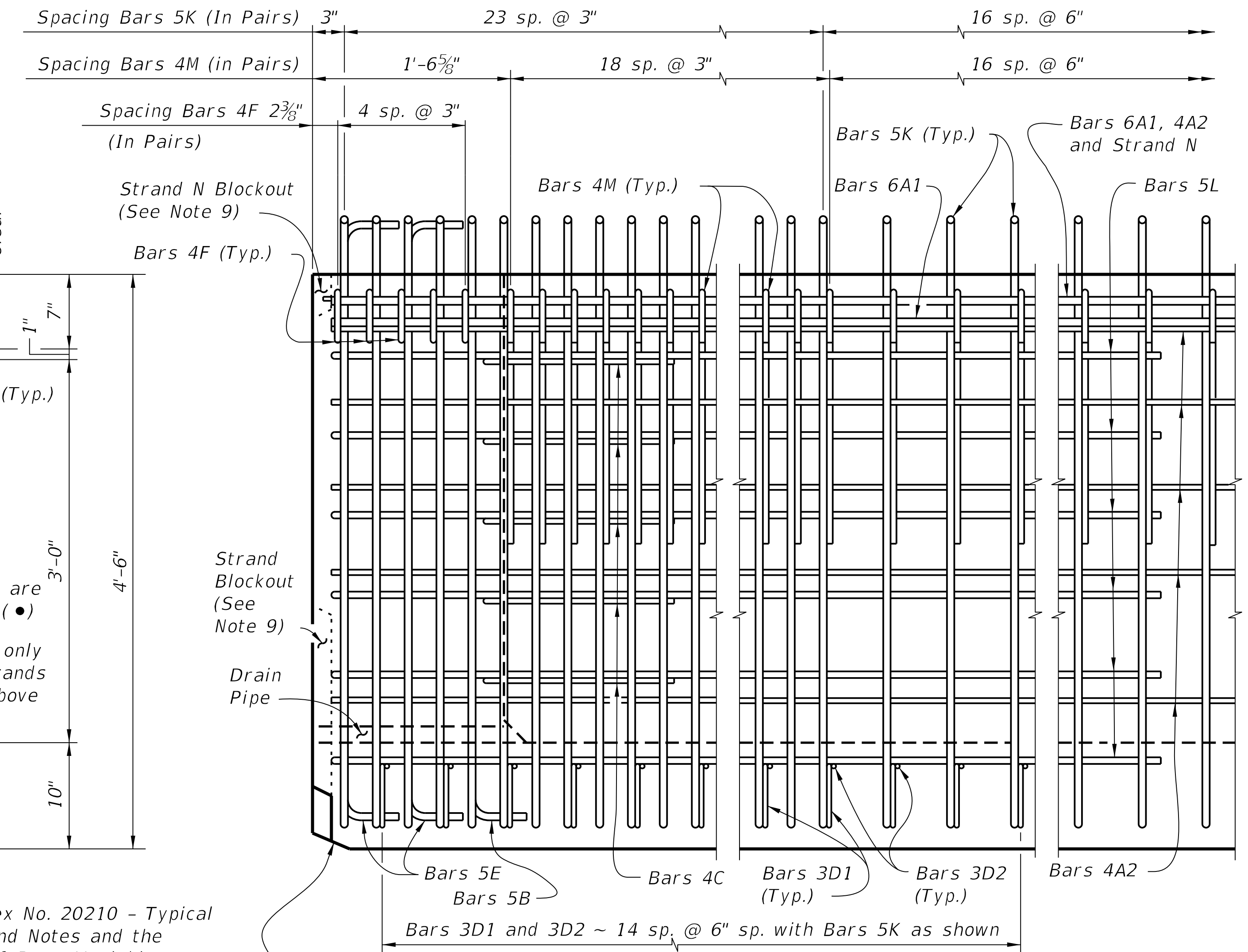
* Reinforcing steel is symmetrical about ℄ Beam for Half Sections A-A and B-B.

** Intermediate Diaphragms shall be provided:
(1) - At midspan.
(2) - At 20'-0" Max. from midspan when beam length (L) exceeds 60 Ft.

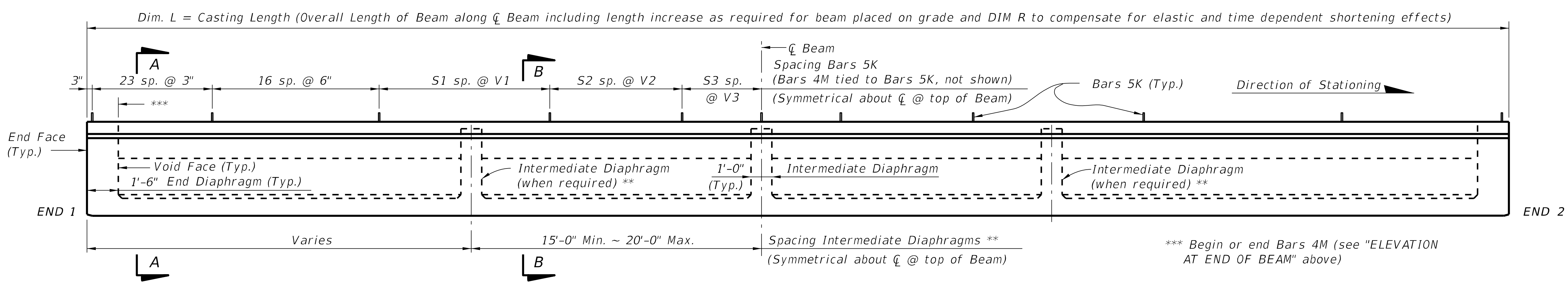
TYPICAL SECTION

NOTES:
Work this Index with Index No. 20210 - Typical Florida-U Beam Details and Notes and the Florida-U Beam - Table of Beam Variables in Structures Plans.

For referenced notes see Index No. 20210.



ELEVATION AT END OF BEAM

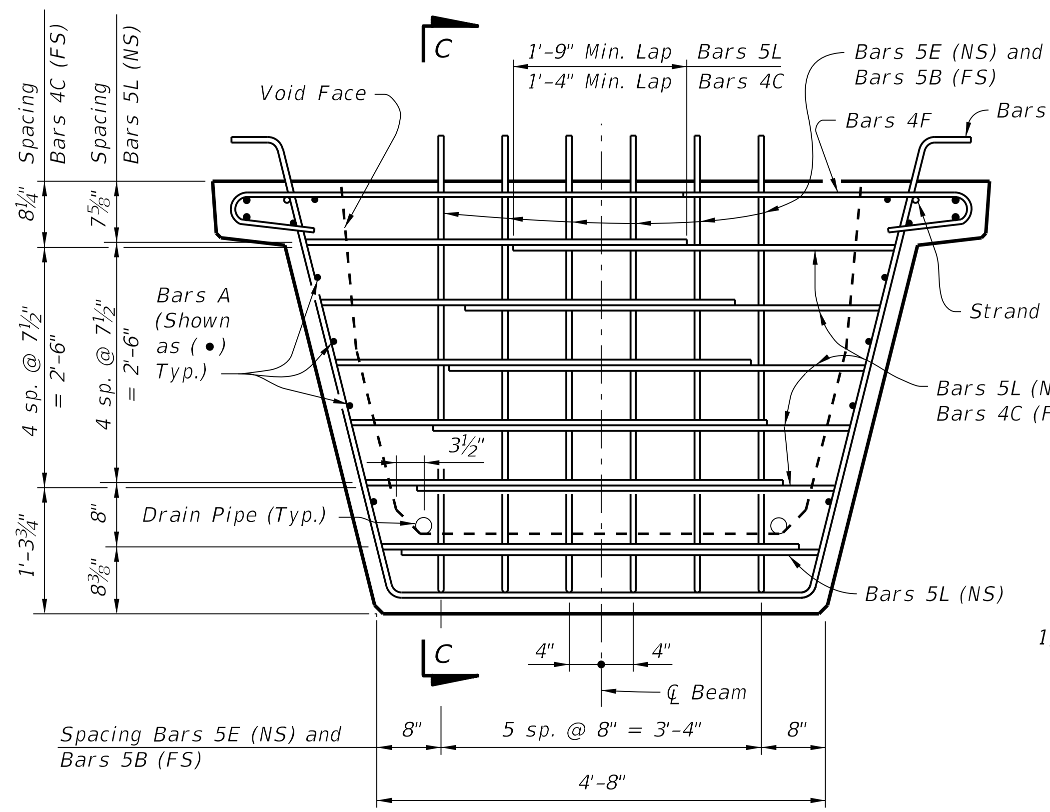


*** Begin or end Bars 4M (see "ELEVATION AT END OF BEAM" above)

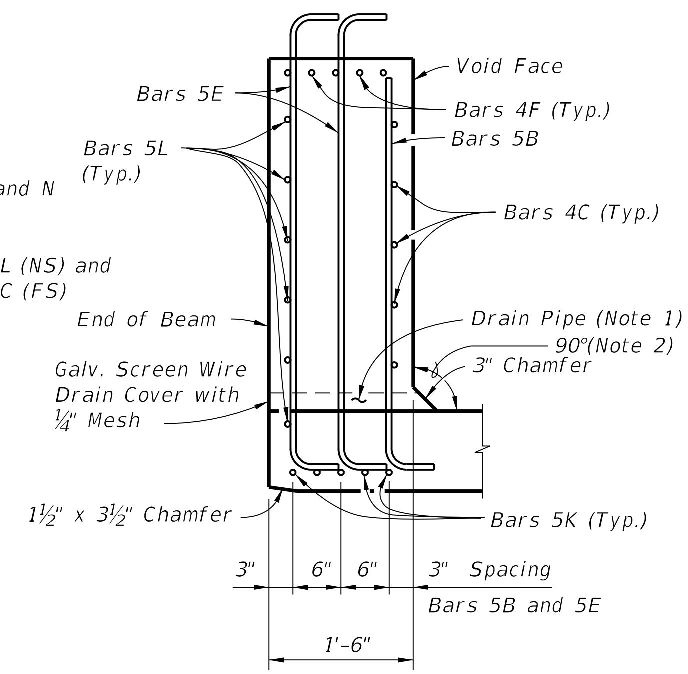
ELEVATION

1:24:19 PM 5/22/2014

LAST REVISION	REVISION	DESCRIPTION:	FDOT 2015 DESIGN STANDARDS	FLORIDA-U 54 BEAM - STANDARD DETAILS	INDEX NO.	SHEET NO.
07/01/12					20254	1 of 3



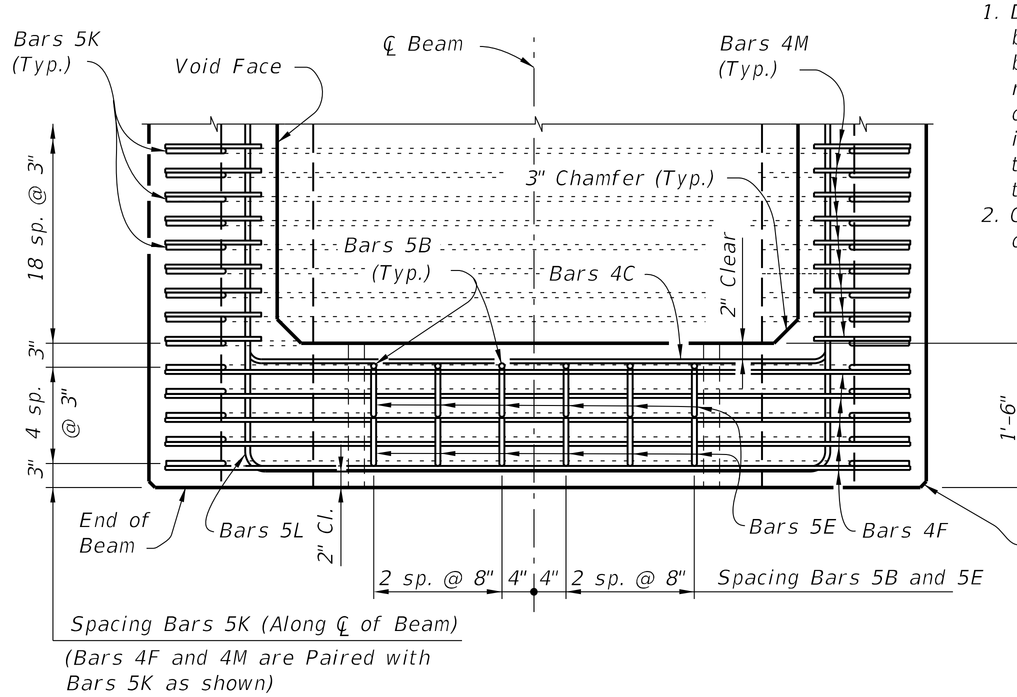
END VIEW AT END DIAPHRAGM



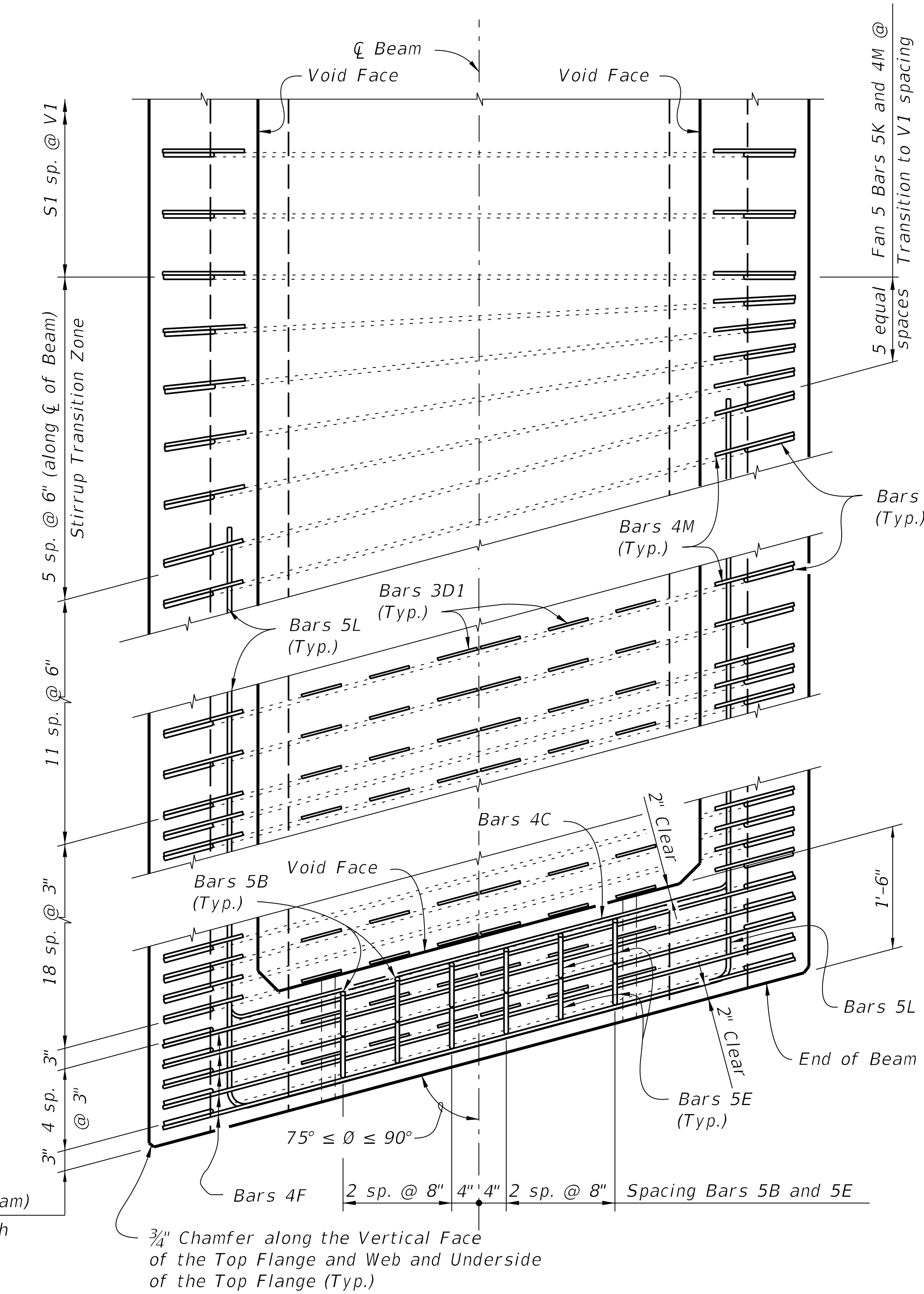
SECTION C-C

NOTES:

1. Drains shall be placed adjacent to each web at each beam end (four drains per beam). Drain Pipe shall be 2" Nominal Pipe Size, Schedule 80 PVC. Provide removable pipe plugs to prevent concrete entrance during beam casting. Plugs to be removed from the inside after casting. Galvanized screen wire shall cover the end of the pipe and bent down around the sides of the pipe, a minimum of 1" and secured prior to casting.
2. Concrete face may be sloped with a maximum 1:24 draft to facilitate formwork removal.



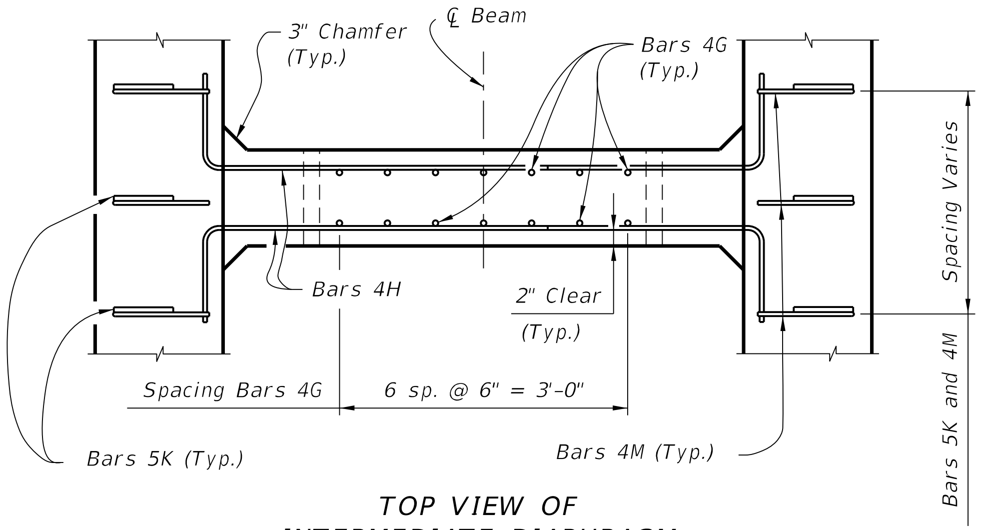
TOP VIEW OF END DIAPHRAGM
(Bars 3D1 And 3D2 Not Shown For Clarity)



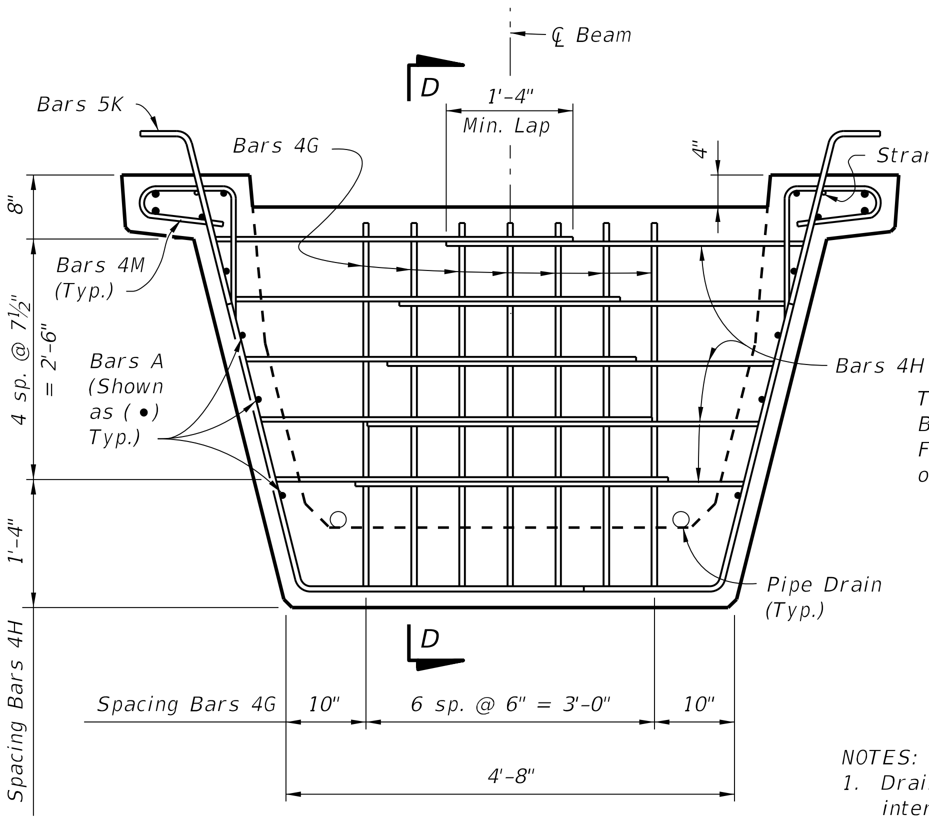
TOP VIEW OF SKEWED END DIAPHRAGM
AND STIRRUP TRANSITION ZONE
(Bars 3D2 Not Shown For Clarity)

5/22/2014 1:24:20 PM

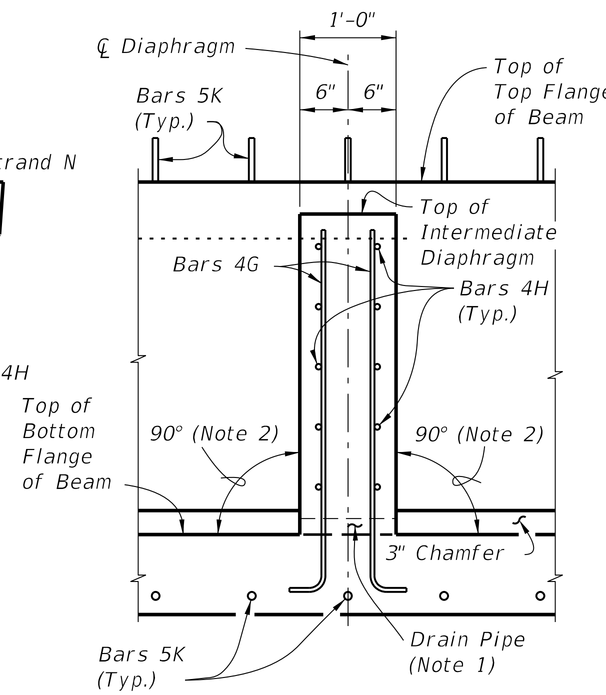
LAST REVISION	REVISION	DESCRIPTION:			INDEX NO.	SHEET NO.
07/01/05			FDOT 2015 DESIGN STANDARDS	FLORIDA-U 54 BEAM - STANDARD DETAILS	20254	2 of 3



TOP VIEW OF INTERMEDIATE DIAPHRAGM



SECTION AT INTERMEDIATE DIAPHRAGM



SECTION D-D

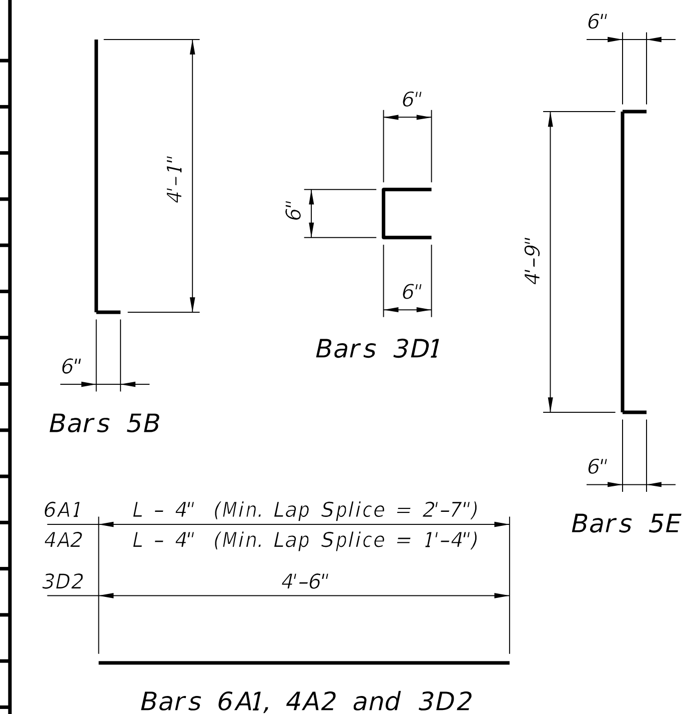
NOTES:

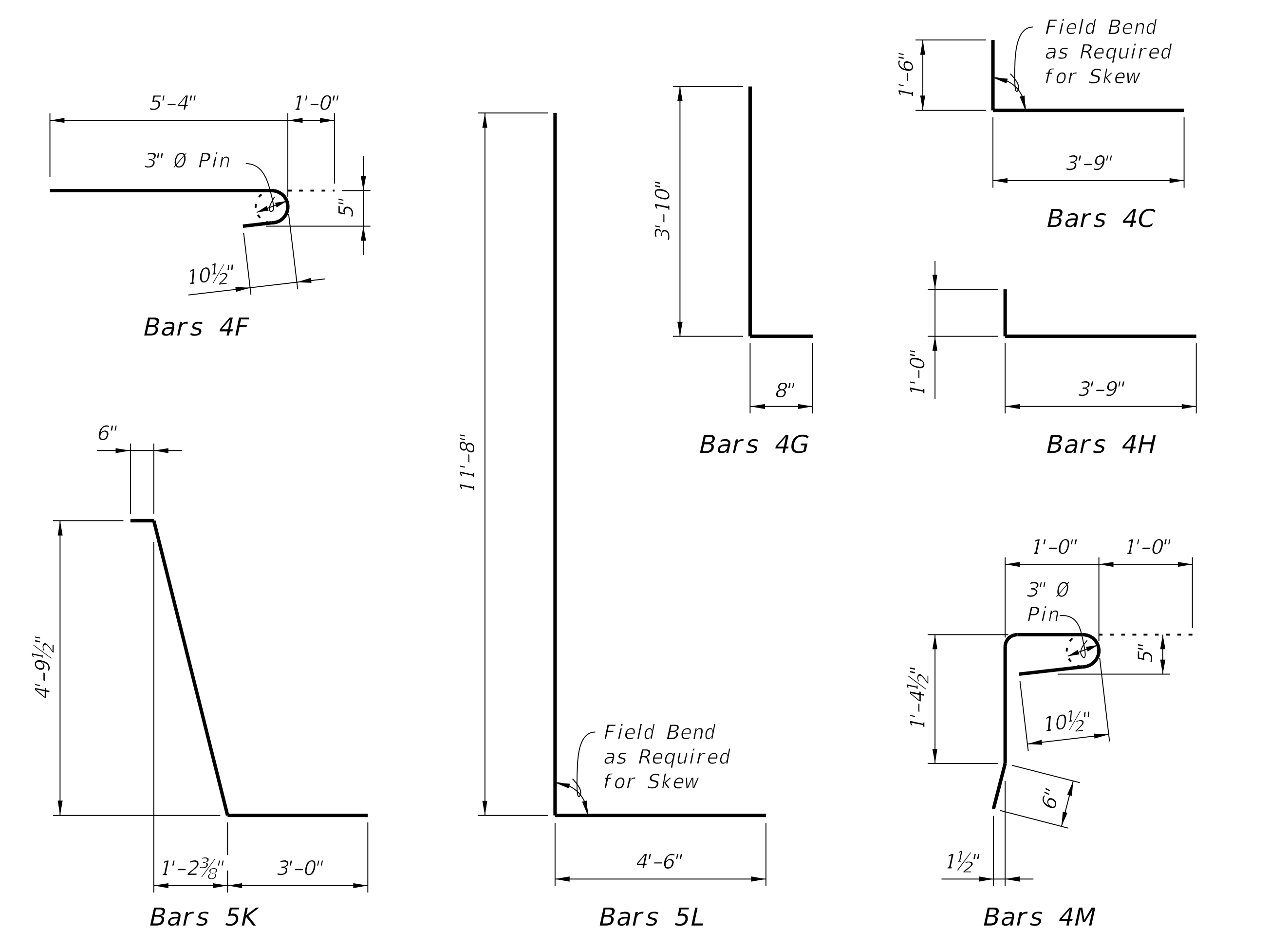
1. Drains shall be placed adjacent to each web at each intermediate diaphragm (two drains per intermediate diaphragm). Drain Pipe shall be 2" Nominal Pipe Size, Schedule 80 PVC. Provide removable pipe plugs to prevent concrete entrance during beam casting. Plugs to be removed from the inside after casting.
2. Concrete face may be sloped with a maximum 1:24 draft to facilitate formwork removal.
3. Intermediate diaphragms must be cast and concrete release strength obtained prior to removing beam from casting bed.

CONVENTIONAL REINFORCING STEEL BENDING DIAGRAMS

BILL OF REINFORCING STEEL FOR ONE BEAM ONLY

MARK	SIZE	NO. REQD.	LENGTH
A1	6	4	Dim. L - 4"
A2	4	12	Dim. L - 4"
B	5	12	4'-7"
C	4	20	5'-3"
D1	3	180	1'-6"
D2	3	30	4'-6"
E	5	24	5'-9"
F	4	20	6'-4"
G	4	See Table	4'-6"
H	4	See Table	4'-9"
K	5	See Table	8'-6"
L	5	24	16'-2"
M	4	See Table	3'-11"
N	⅜" Ø Strand	2	Dim. L - 3"





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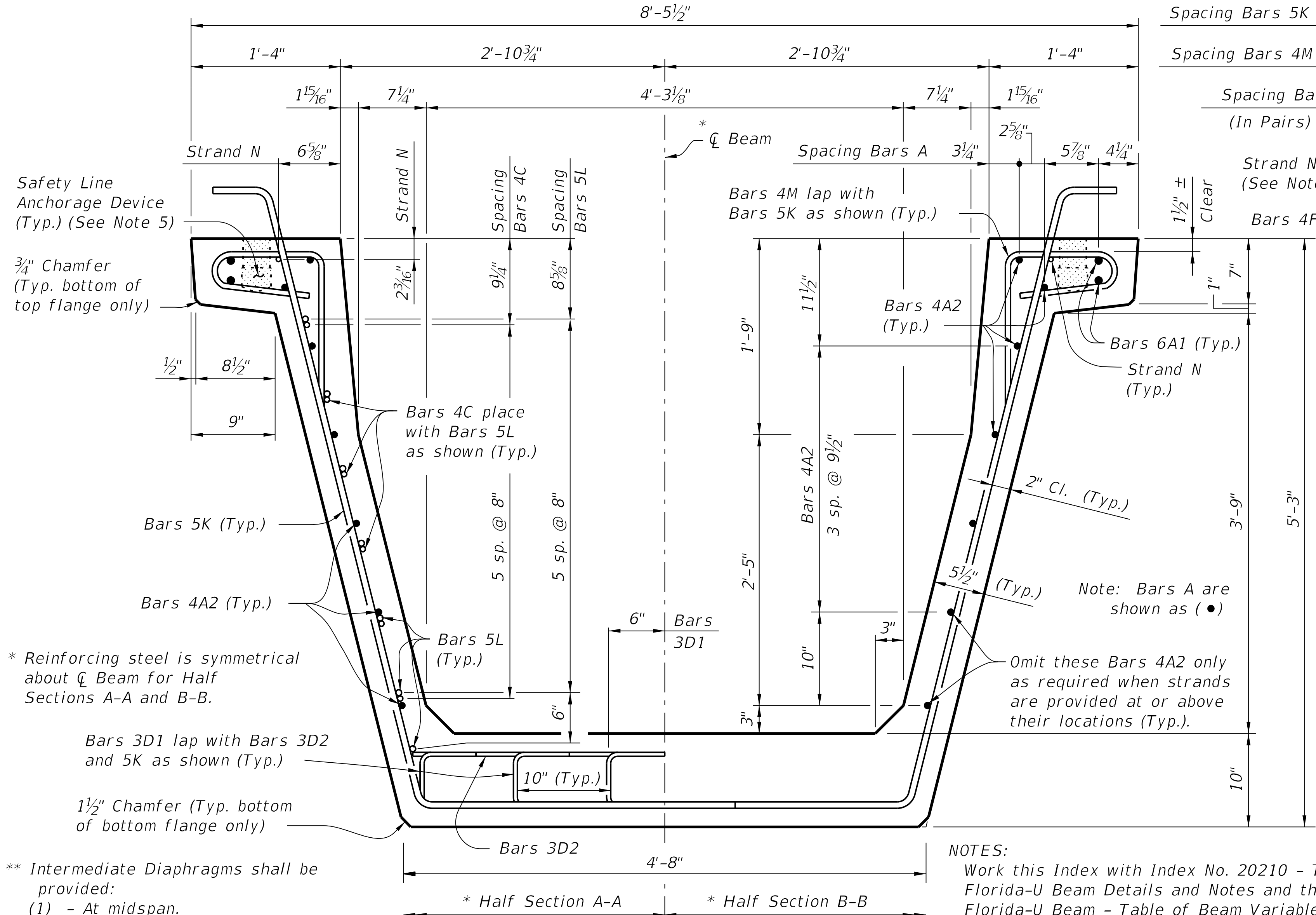
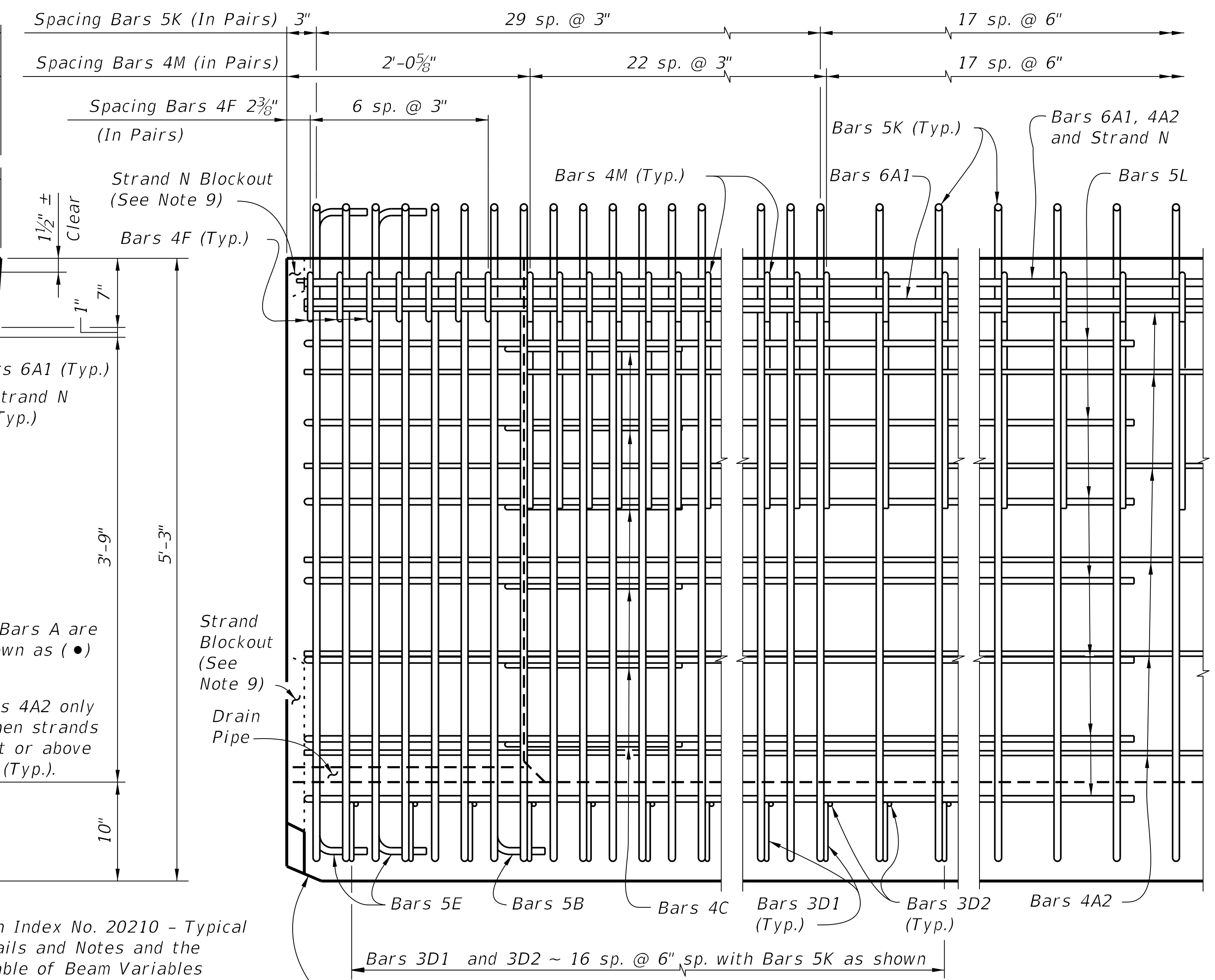


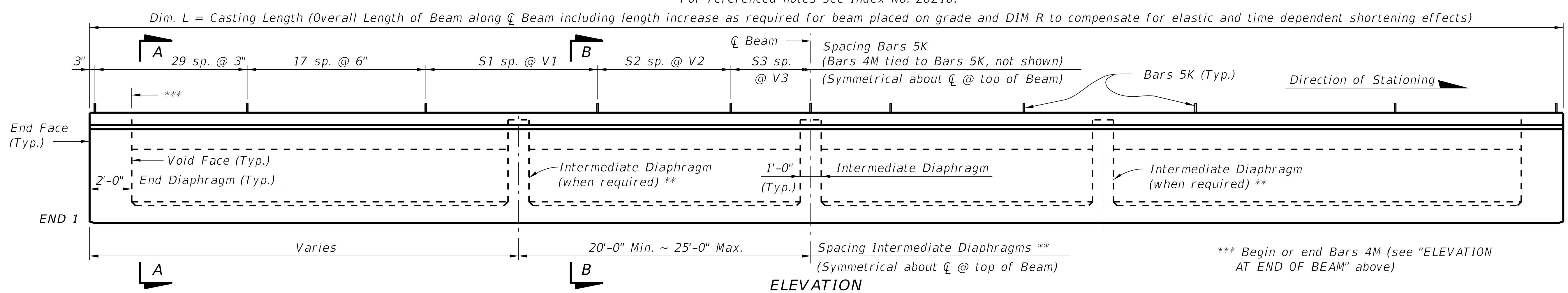
TYPICAL SECTION

NOTES:
Work this Index with Index No. 20210 - Typical Florida-U Beam Details and Notes and the Florida-U Beam - Table of Beam Variables in Structures Plans.

For referenced notes see Index No. 20210.

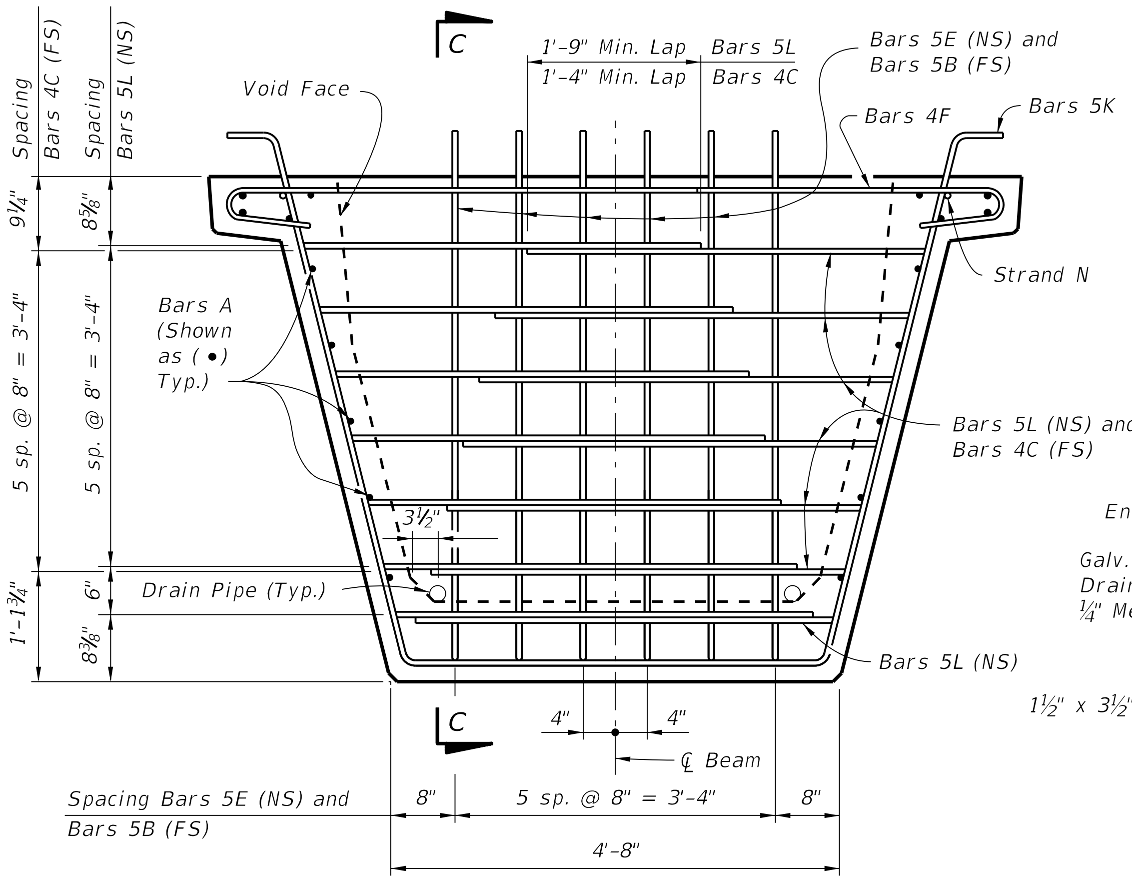


ELEVATION AT END OF BEAM

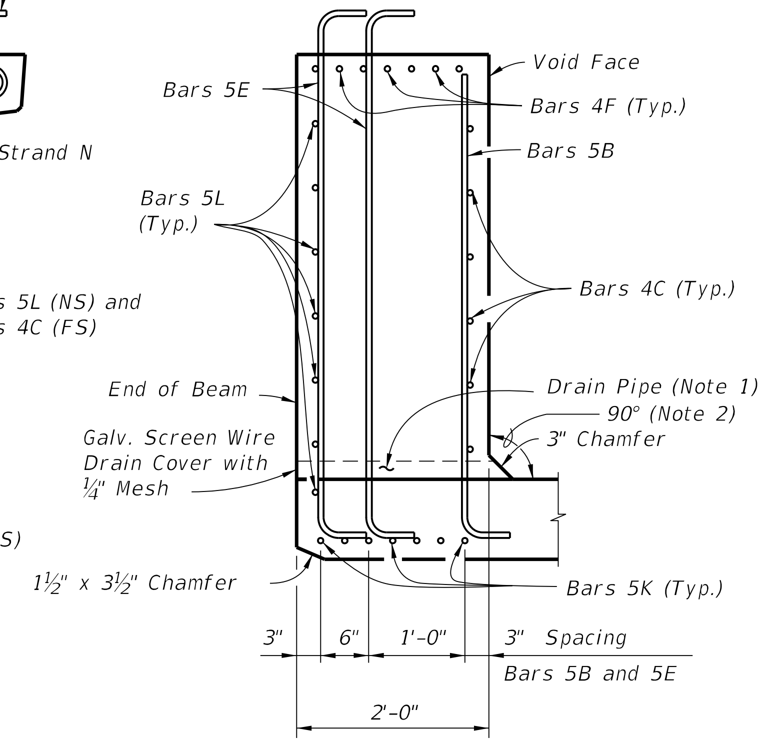


ELEVATION

5/22/2014 1:27:05 PM



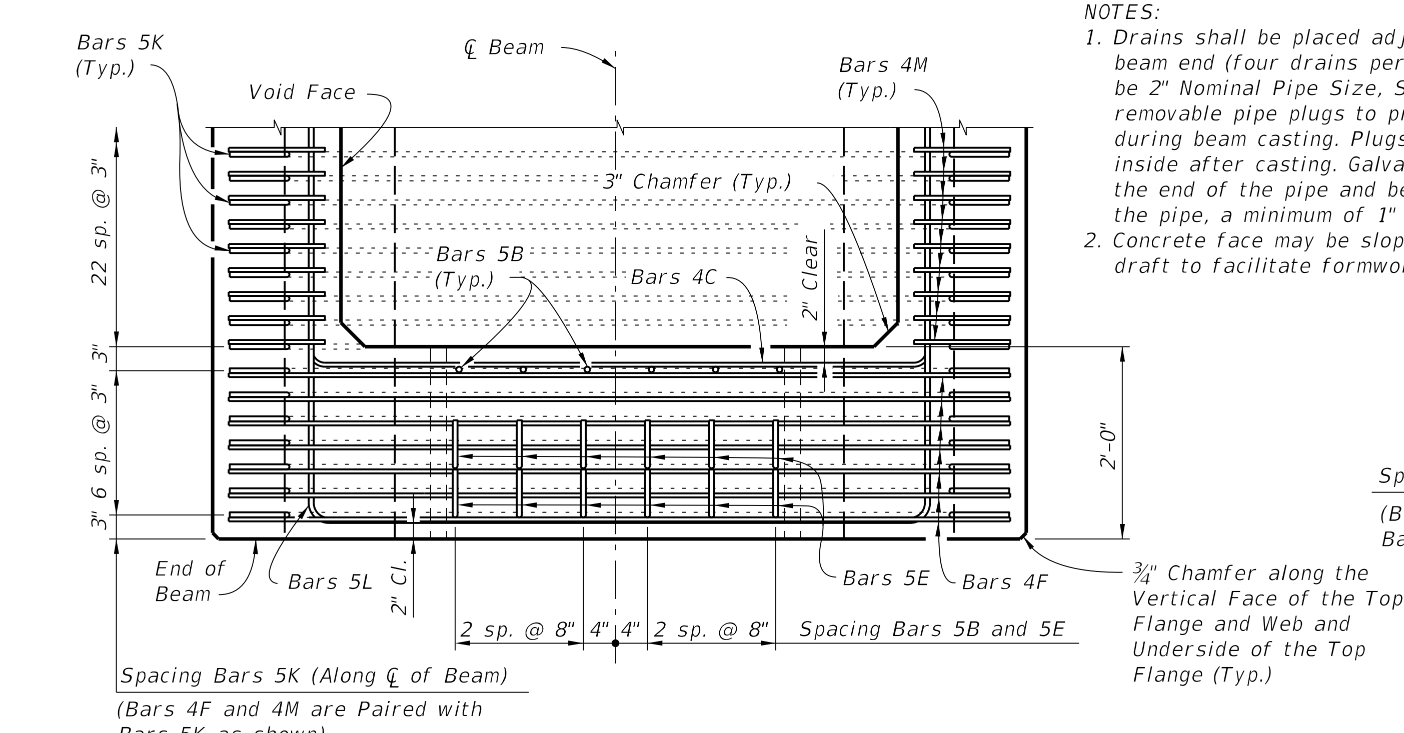
END VIEW AT END DIAPHRAGM



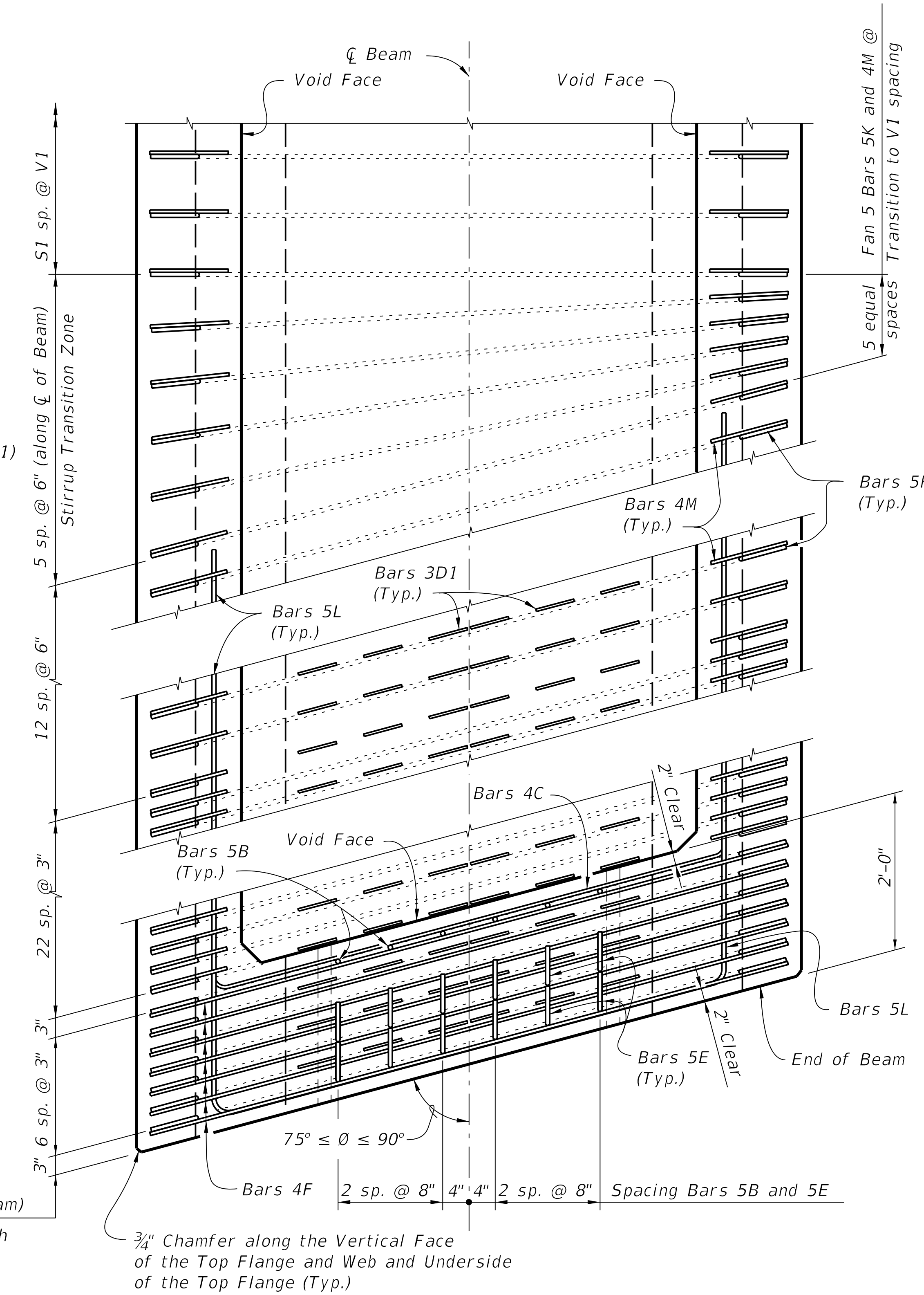
SECTION C-C

NOTES:

1. Drains shall be placed adjacent to each web at each beam end (four drains per beam). Drain Pipe shall be 2" Nominal Pipe Size, Schedule 80 PVC. Provide removable pipe plugs to prevent concrete entrance during beam casting. Plugs to be removed from the inside after casting. Galvanized screen wire shall cover the end of the pipe and bent down around the sides of the pipe, a minimum of 1" and secured prior to casting.
2. Concrete face may be sloped with a maximum 1:24 draft to facilitate formwork removal.



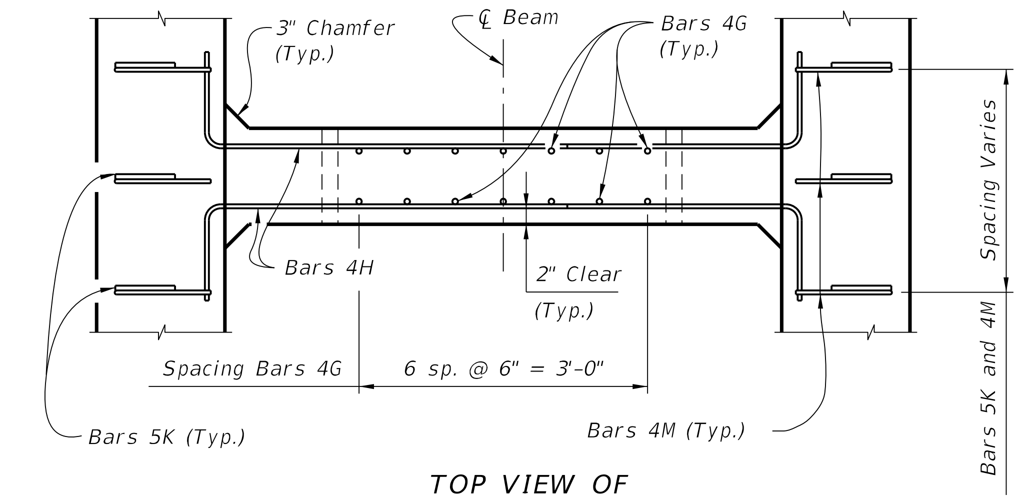
TOP VIEW OF END DIAPHRAGM
(Bars 3D1 And 3D2 Not Shown For Clarity)



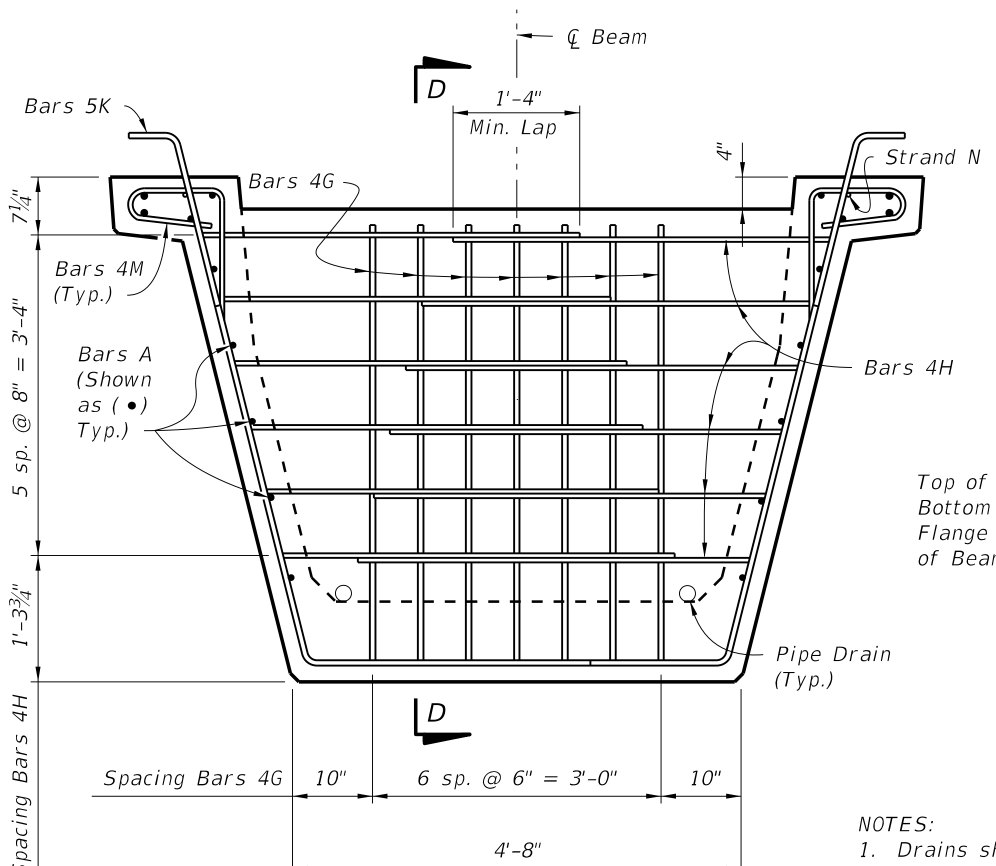
TOP VIEW OF SKEWED END DIAPHRAGM
AND STIRRUP TRANSITION ZONE
(Bars 3D2 Not Shown For Clarity)

1:27:07 PM
5/22/2014

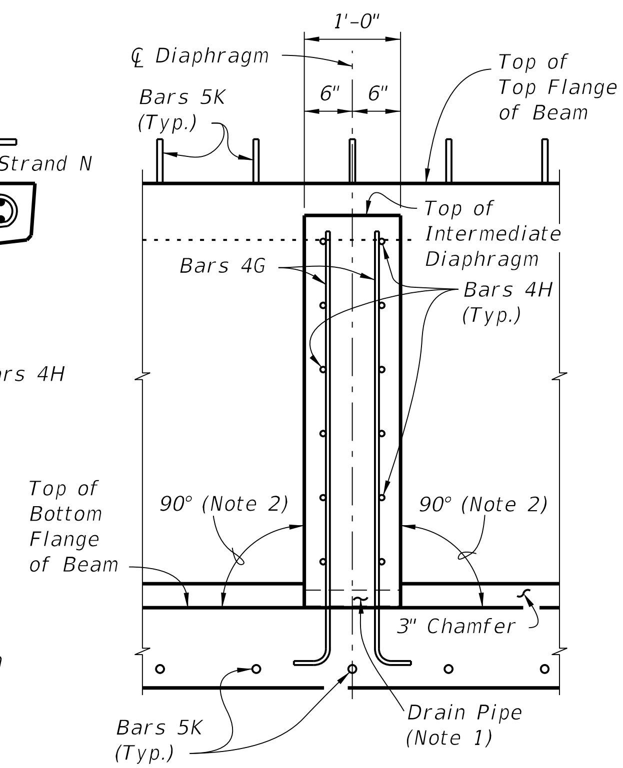
LAST REVISION	REVISION	DESCRIPTION:			INDEX NO.	SHEET NO.
07/01/05			FDOT 2015 DESIGN STANDARDS	FLORIDA-U 63 BEAM - STANDARD DETAILS	20263	2 of 3



TOP VIEW OF INTERMEDIATE DIAPHRAGM



SECTION AT INTERMEDIATE DIAPHRAGM



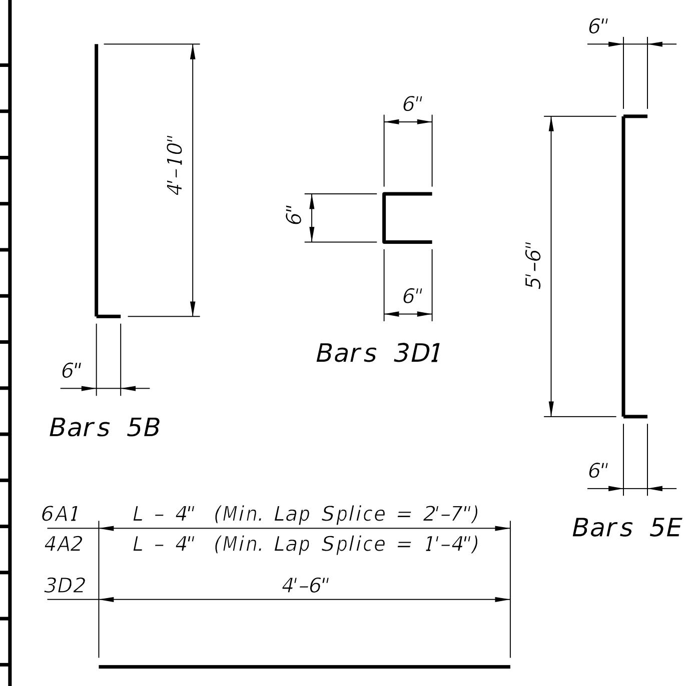
SECTION D-D

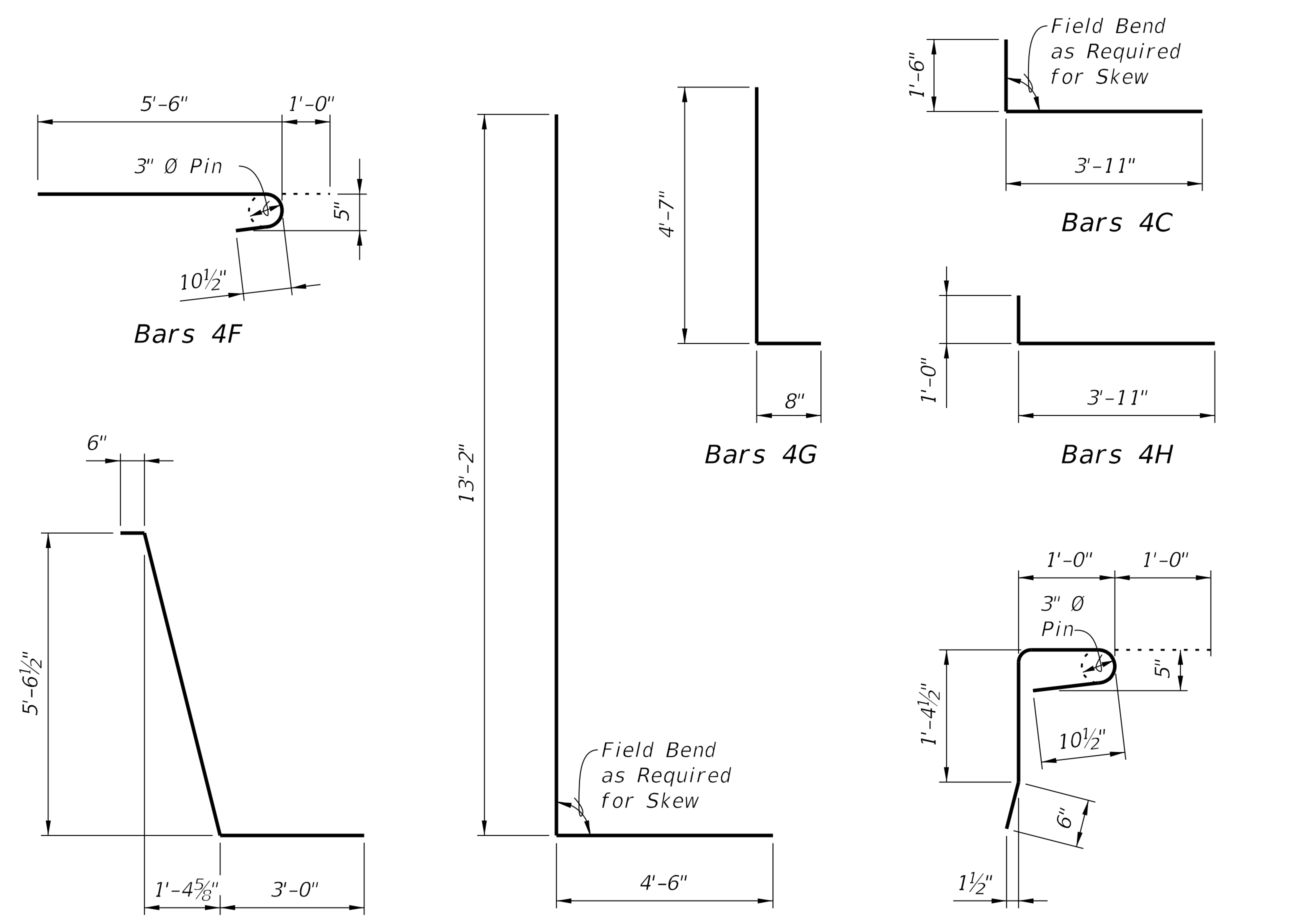
NOTES:
1. Drains shall be placed adjacent to each web at each intermediate diaphragm (two drains per intermediate diaphragm). Drain Pipe shall be 2" Nominal Pipe Size, Schedule 80 PVC. Provide removable pipe plugs to prevent concrete entrance during beam casting. Plugs to be removed from the inside after casting.
2. Concrete face may be sloped with a maximum 1:24 draft to facilitate formwork removal.
3. Intermediate diaphragms must be cast and concrete release strength obtained prior to removing beam from casting bed.

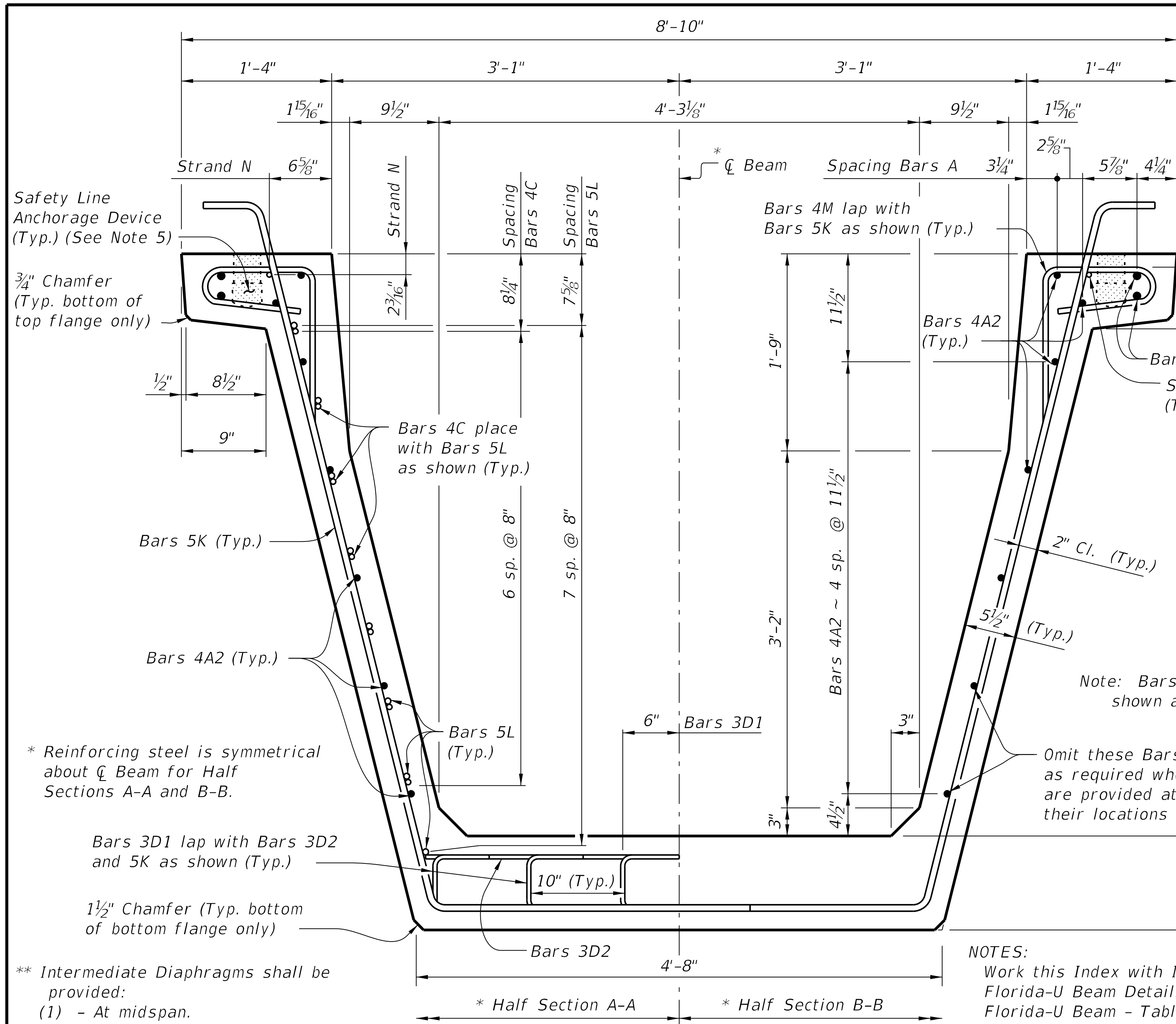
CONVENTIONAL REINFORCING STEEL BENDING DIAGRAMS

BILL OF REINFORCING STEEL FOR ONE BEAM ONLY

MARK	SIZE	NO. REQD.	LENGTH
A1	6	4	Dim. L - 4"
A2	4	12	Dim. L - 4"
B	5	12	5'-4"
C	4	24	5'-5"
D1	3	204	1'-6"
D2	3	34	4'-6"
E	5	24	6'-6"
F	4	28	6'-6"
G	4	See Table	5'-3"
H	4	See Table	4'-11"
K	5	See Table	9'-2½"
L	5	28	17'-8"
M	4	See Table	3'-11"
N	⅜" Ø Strand	2	Dim. L - 3"



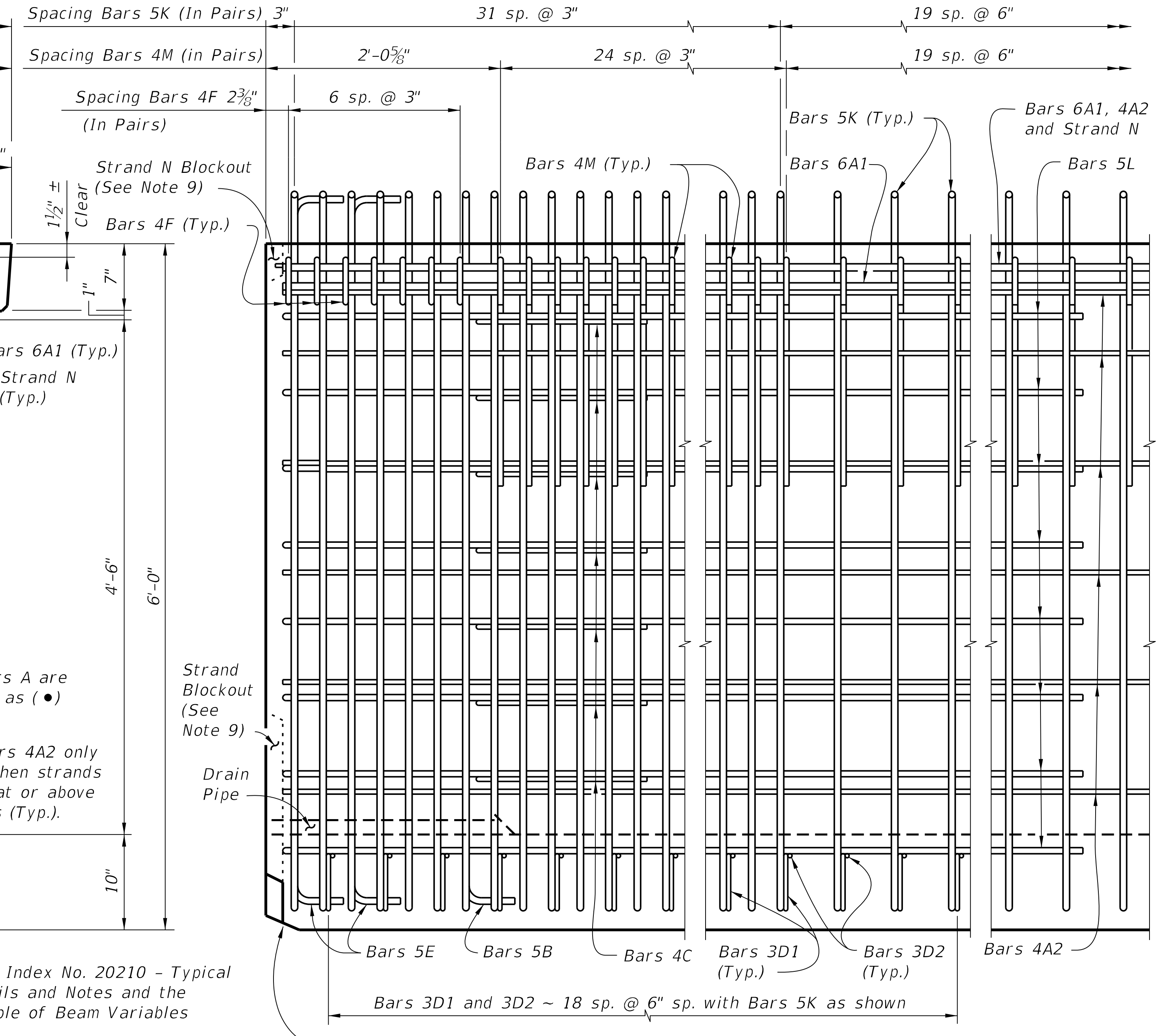




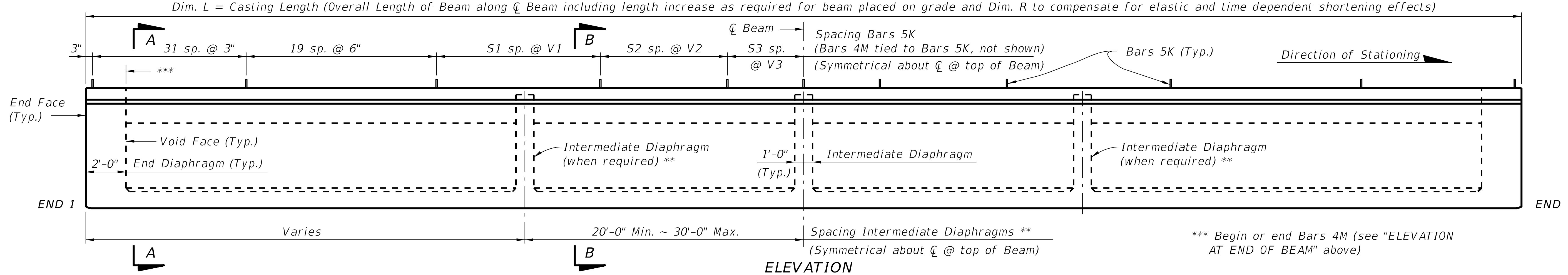
TYPICAL SECTION

** Intermediate Diaphragms shall be provided:
(1) - At midspan.
(2) - At 30'-0" Max. from midspan when beam length (L) exceeds 80 Ft.

NOTES:
Work this Index with Index No. 20210 - Typical Florida-U Beam Details and Notes and the Florida-U Beam - Table of Beam Variables in Structures Plans.
For referenced notes see Index No. 20210.



ELEVATION AT END OF BEAM

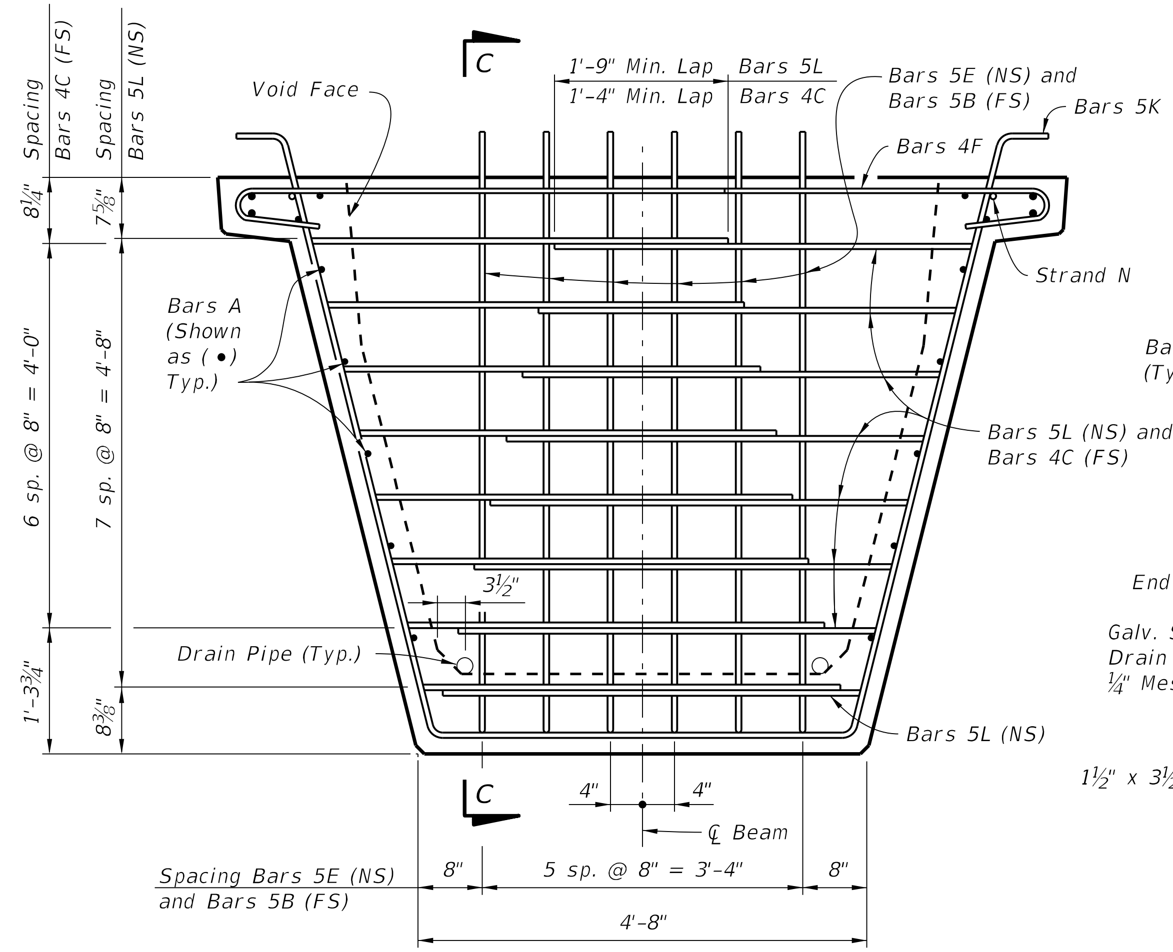


*** Begin or end Bars 4M (see "ELEVATION AT END OF BEAM" above)

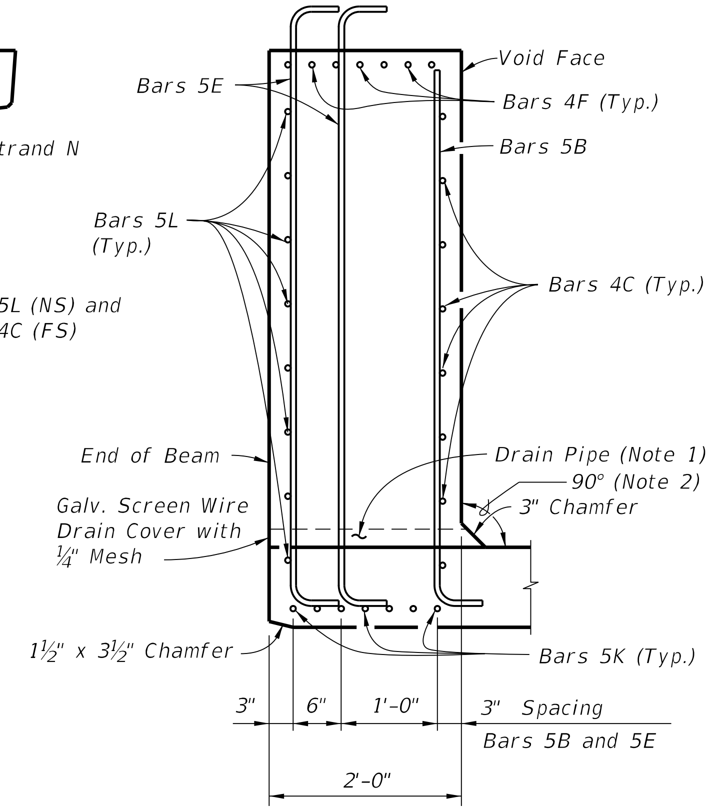
ELEVATION

1:28:06 PM
5/22/2014

LAST REVISION	REVISION	DESCRIPTION:			INDEX NO.	SHEET NO.
07/01/12			FDOT 2015 DESIGN STANDARDS	FLORIDA-U 72 BEAM - STANDARD DETAILS	20272	1 of 3



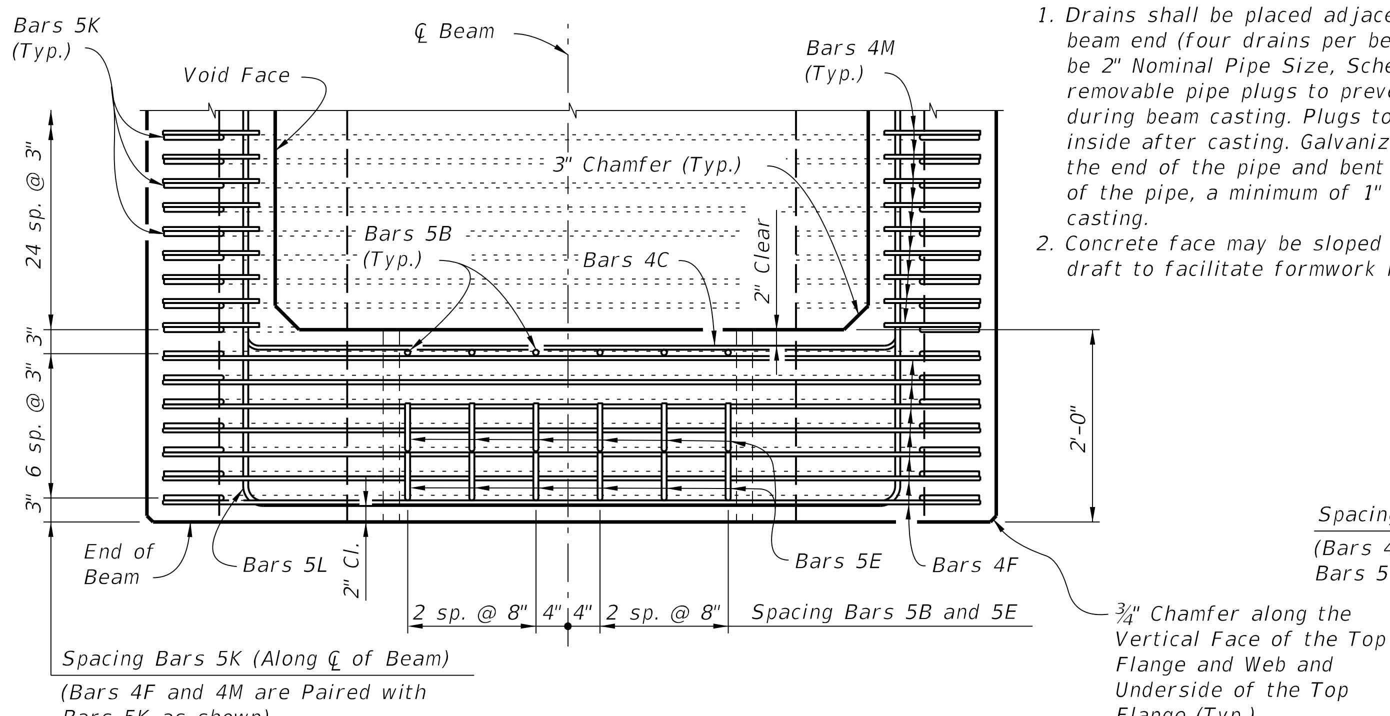
END VIEW AT END DIAPHRAGM



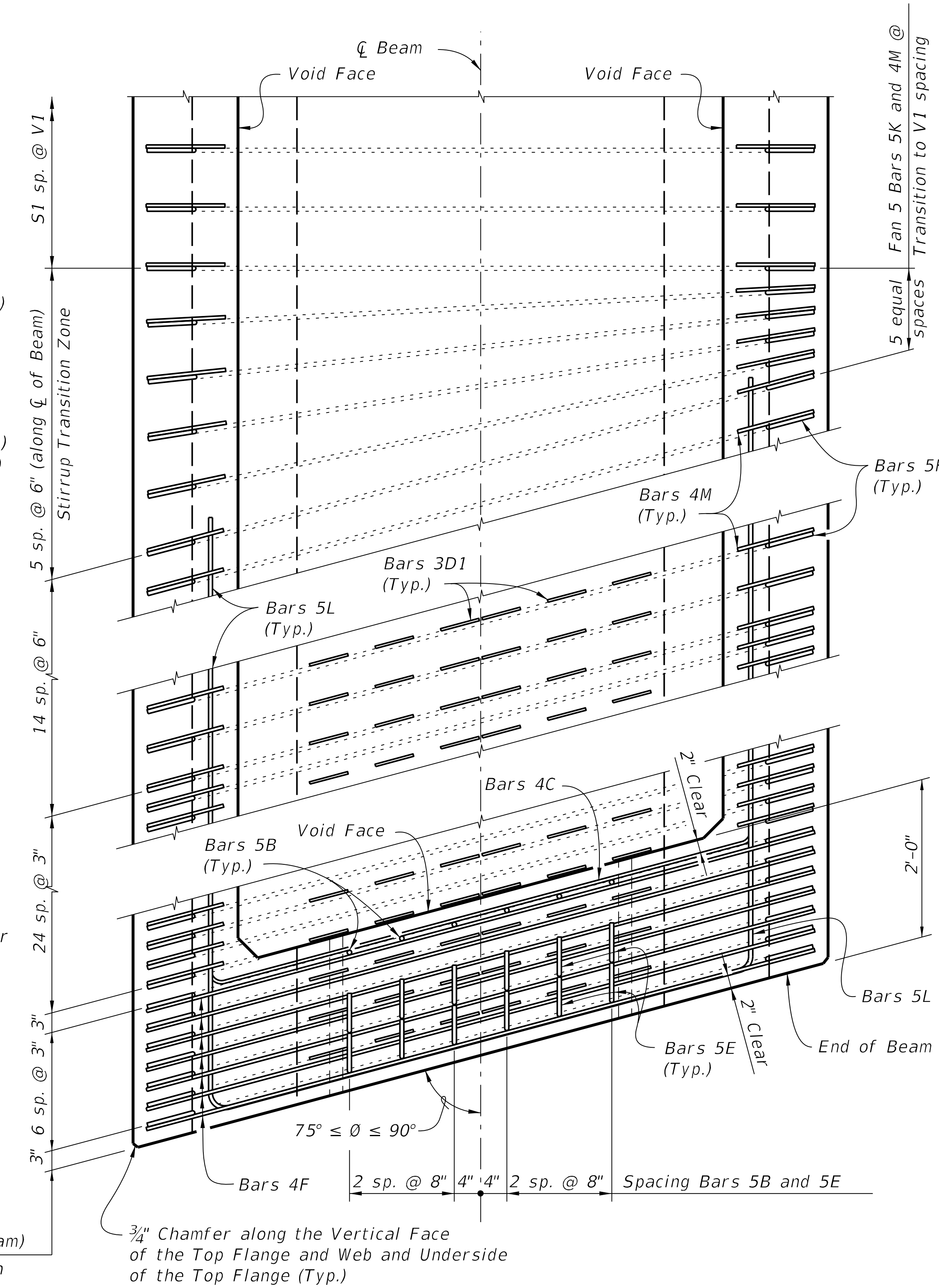
SECTION C-C

NOTES:

1. Drains shall be placed adjacent to each web at each beam end (four drains per beam). Drain Pipe shall be 2" Nominal Pipe Size, Schedule 80 PVC. Provide removable pipe plugs to prevent concrete entrance during beam casting. Plugs to be removed from the inside after casting. Galvanized screen wire shall cover the end of the pipe and bent down around the sides of the pipe, a minimum of 1" and secured prior to casting.
2. Concrete face may be sloped with a maximum 1:24 draft to facilitate formwork removal.



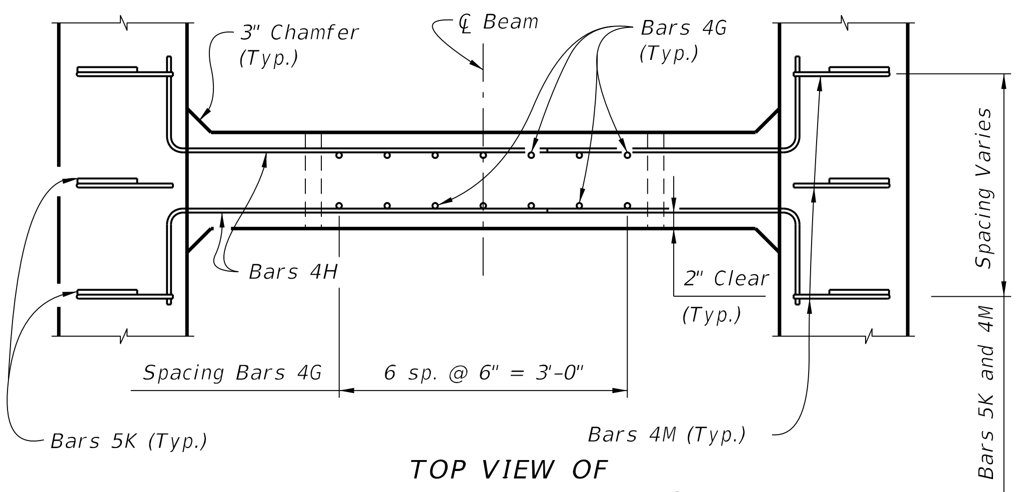
TOP VIEW OF END DIAPHRAGM
(Bars 3D1 And 3D2 Not Shown For Clarity)



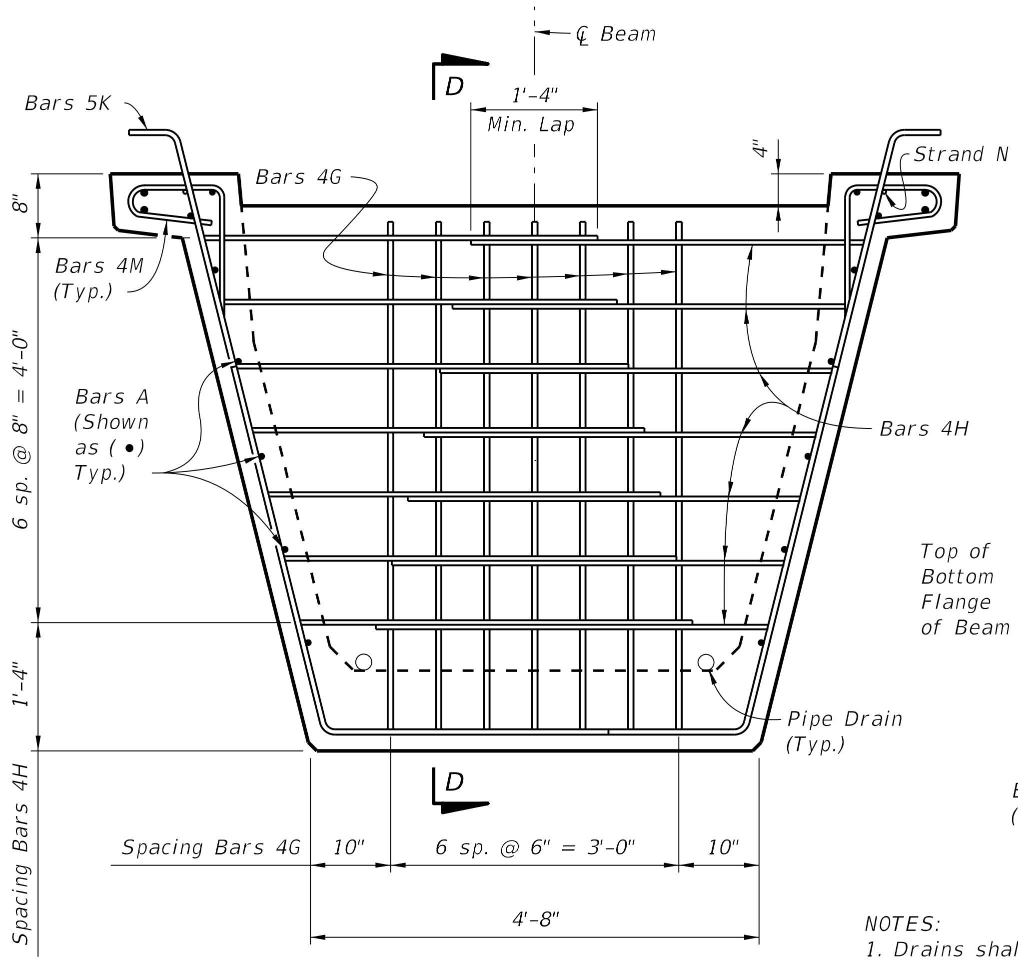
TOP VIEW OF SKEWED END DIAPHRAGM
AND STIRRUP TRANSITION ZONE
(Bars 3D2 Not Shown For Clarity)

1:28:07 PM
5/22/2014

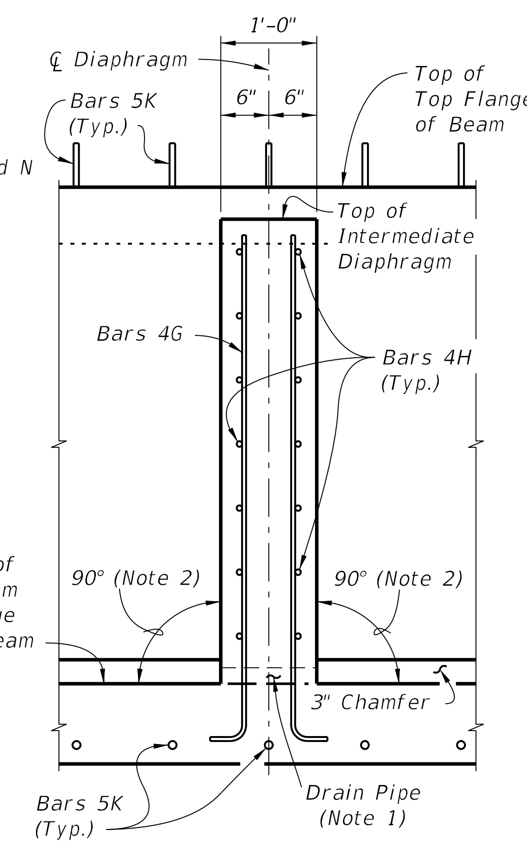
LAST REVISION	REVISION	DESCRIPTION:			INDEX NO.	SHEET NO.
07/01/05			FDOT 2015 DESIGN STANDARDS	FLORIDA-U 72 BEAM - STANDARD DETAILS	20272	2 of 3



TOP VIEW OF INTERMEDIATE DIAPHRAGM



SECTION AT INTERMEDIATE DIAPHRAGM



SECTION D-D

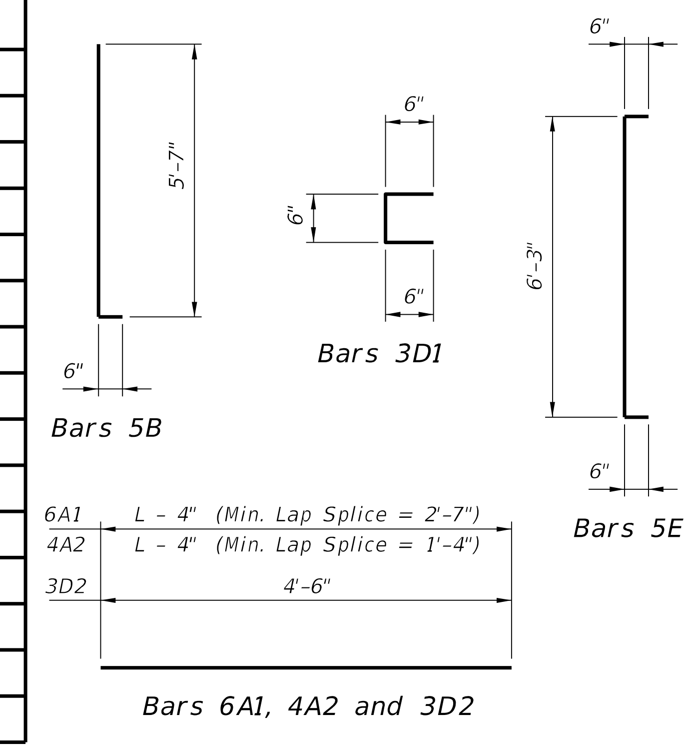
NOTES:

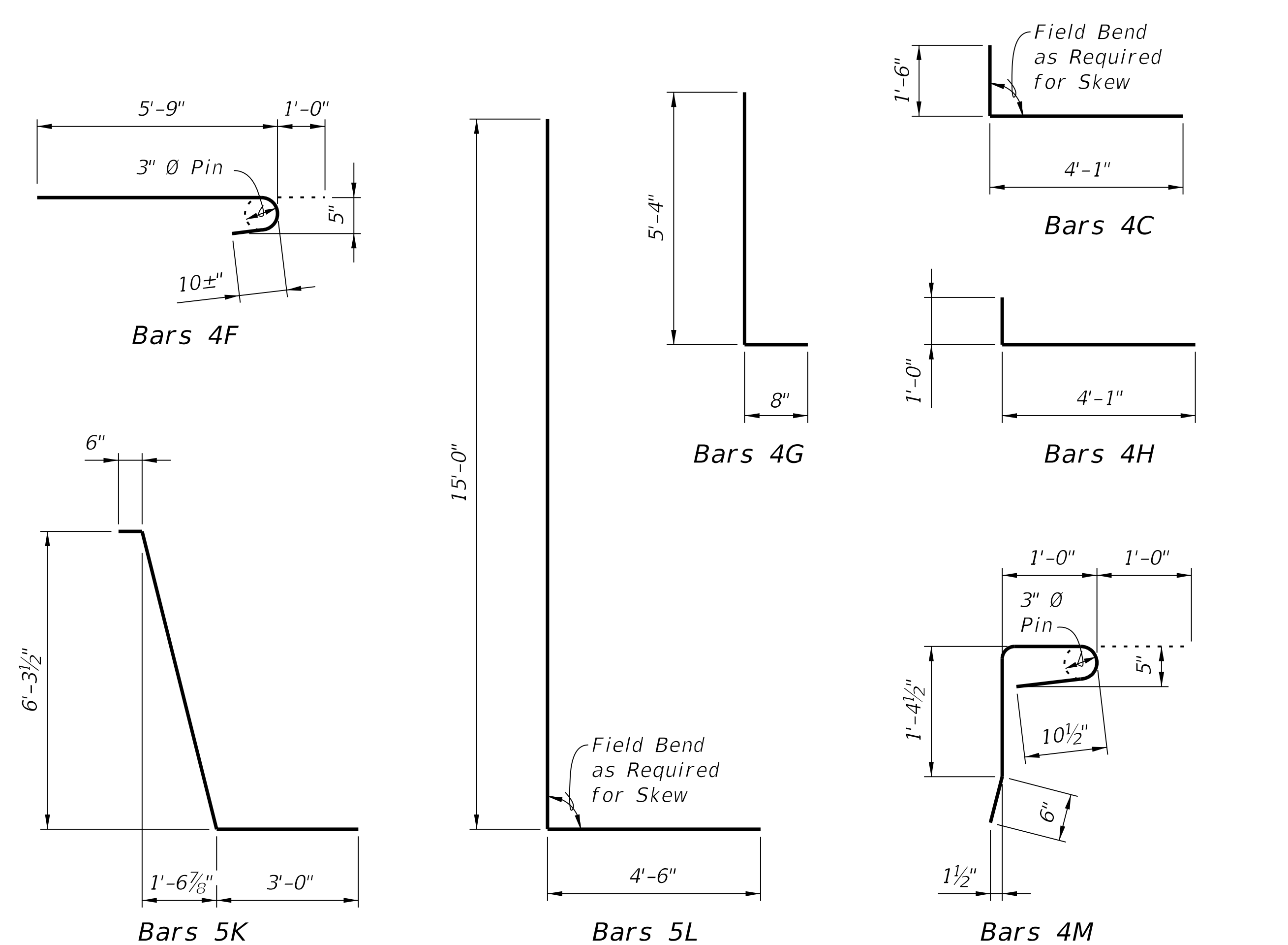
1. Drains shall be placed adjacent to each web at each intermediate diaphragm (two drains per intermediate diaphragm). Drain Pipe shall be 2" Nominal Pipe Size, Schedule 80 PVC. Provide removable pipe plugs to prevent concrete entrance during beam casting. Plugs to be removed from the inside after casting.
2. Concrete face may be sloped with a maximum 1:24 draft to facilitate formwork removal.
3. Intermediate diaphragms must be cast and concrete release strength obtained prior to removing beam from casting bed.

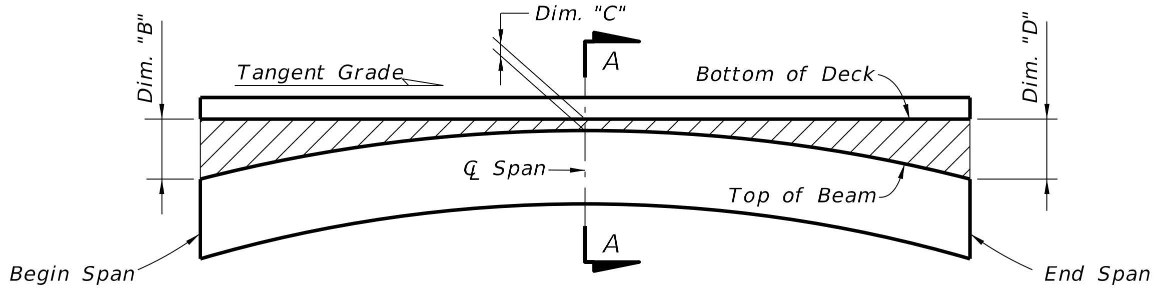
CONVENTIONAL REINFORCING STEEL BENDING DIAGRAMS

BILL OF REINFORCING STEEL FOR ONE BEAM ONLY

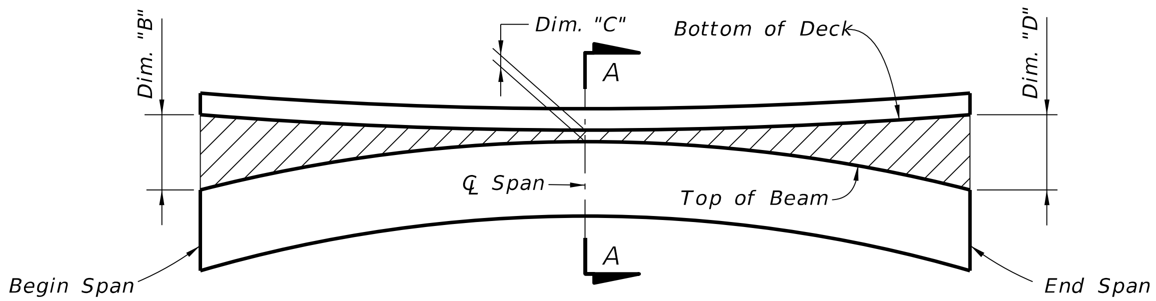
MARK	SIZE	NO. REQD.	LENGTH
A1	6	4	Dim. L - 4"
A2	4	14	Dim. L - 4"
B	5	12	6'-1"
C	4	28	5'-7"
D1	3	228	1'-6"
D2	3	38	4'-6"
E	5	24	7'-3"
F	4	28	6'-9"
G	4	See Table	6'-0"
H	4	See Table	5'-1"
K	5	See Table	10'-0"
L	5	32	19'-6"
M	4	See Table	3'-11"
N	3/8" Ø Strand	2	Dim. L - 3"



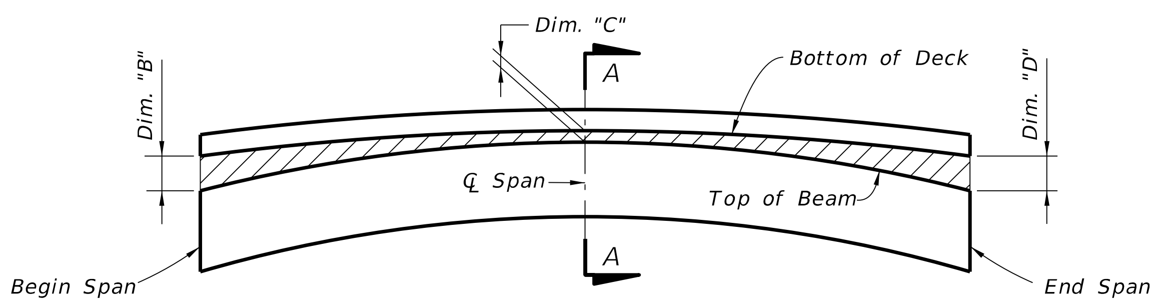




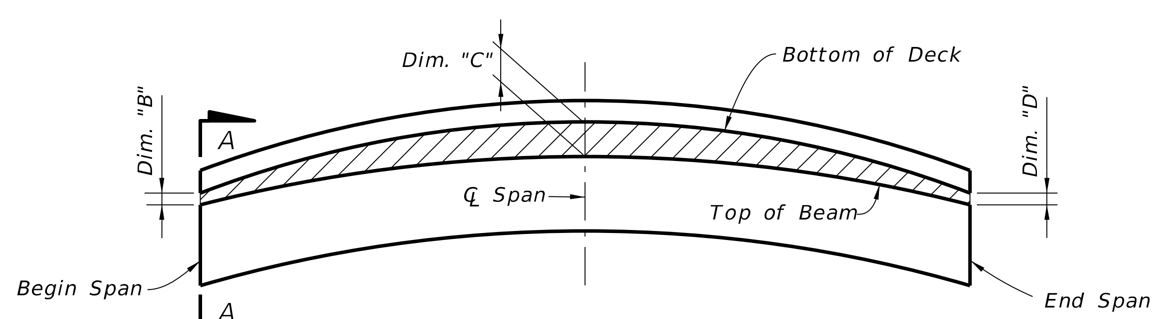
BUILD-UP DIAGRAM FOR TANGENT SPANS
(ALONG ℄ FLANGE) (CASE 1)



BUILD-UP DIAGRAM FOR SAG VERTICAL CURVE SPANS
(ALONG ℄ FLANGE) (CASE 2)



BUILD-UP DIAGRAM FOR CREST VERTICAL CURVE SPANS
- CONTROL AT ℄ SPAN
(ALONG ℄ FLANGE) (CASE 3)

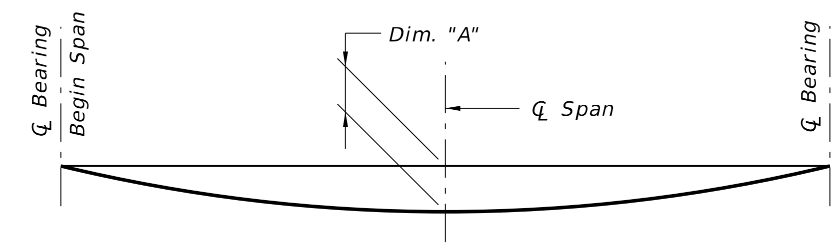


BUILD-UP DIAGRAM FOR CREST VERTICAL CURVE SPANS
- CONTROL AT BEGIN OR END SPAN
(ALONG ℄ FLANGE) (CASE 4)

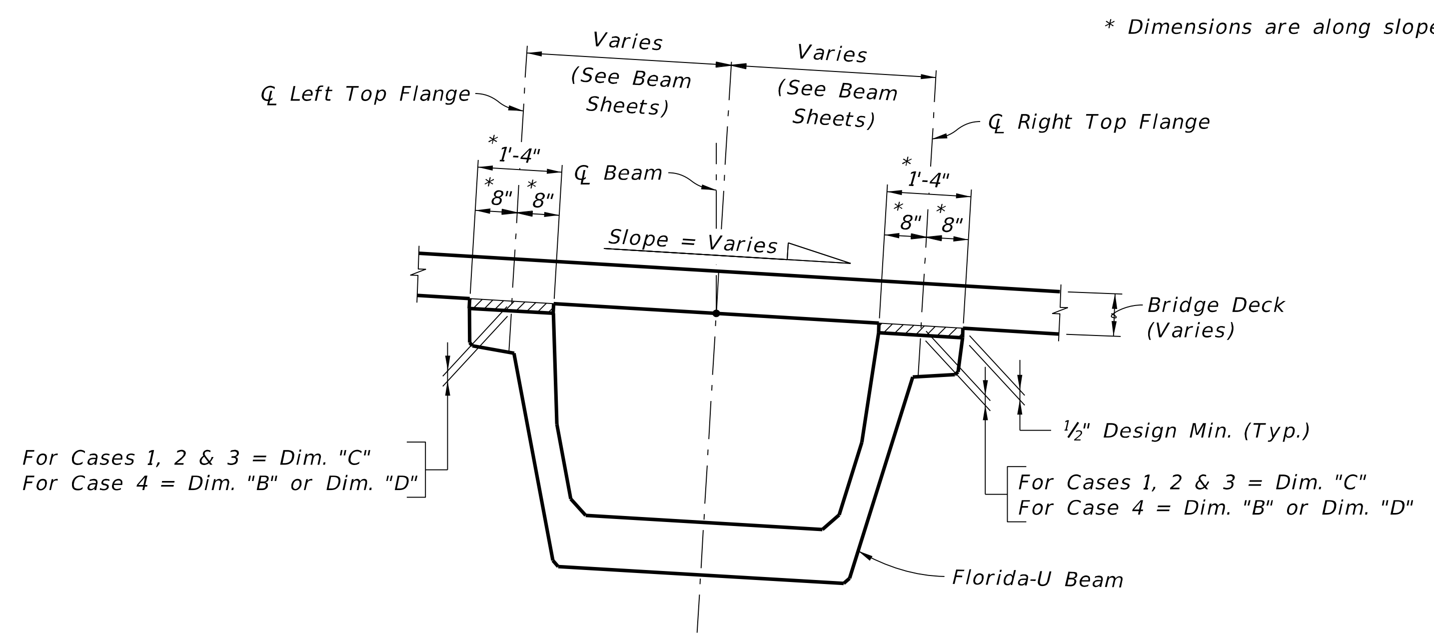
BEAM CAMBER AND BUILD-UP NOTES:

The build-up values given in the Data Table* are based on theoretical beam cambers. The Contractor shall monitor beam cambers for the purpose of predicting camber values at the time of the deck pour. If the predicted cambers based on field measurements differ more than +/- ½" from the theoretical "Net Beam Camber @ 120 Days" shown in the Data Table*, obtain approval from the Engineer to modify the build-up dimensions as required. When the measured beam cambers create a conflict with the bottom mat of deck steel, notify the Engineer a minimum of 21 days prior to casting.

Dim. "A" includes the weight of the Stay-In-Place Formwork.



DEAD LOAD DEFLECTION DIAGRAM
(ALONG ℄ BEAM)



SECTION A-A
BUILD-UP OVER BEAMS
(LOOKING AHEAD STATION)

* NOTE:
Work this Index with the Build-up and Deflection Data Table for Florida-U Beams in Structures Plans.