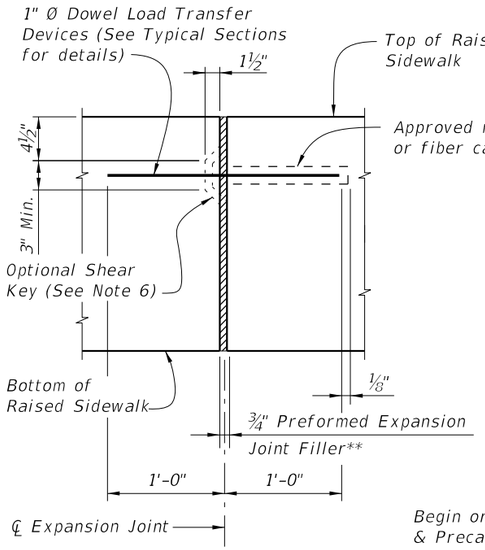
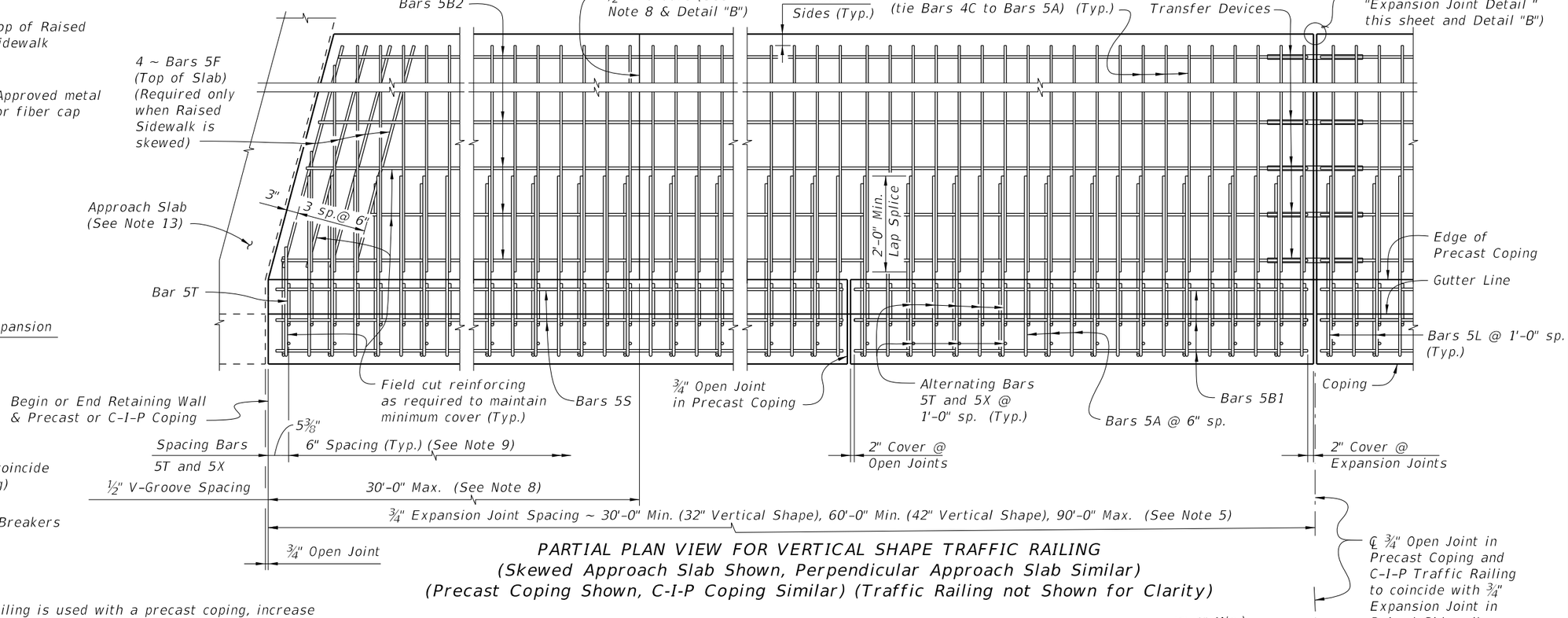


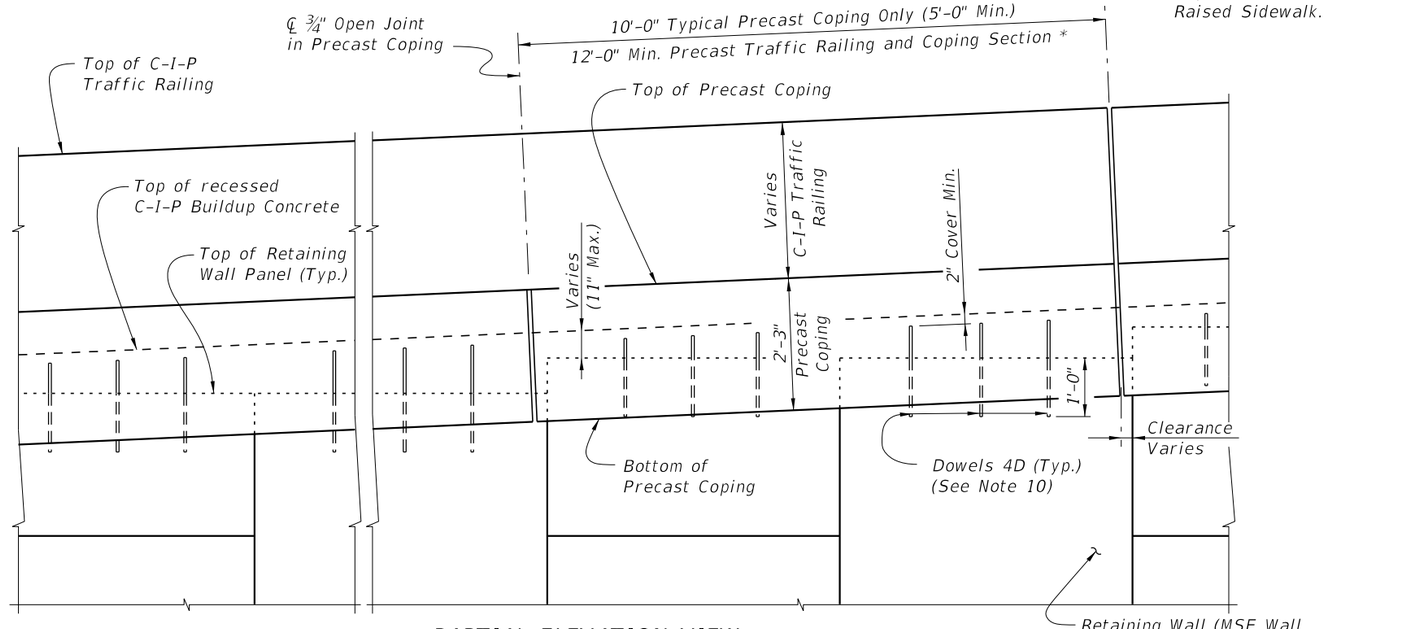
EXPANSION JOINT DETAIL

(Raised Sidewalk expansion joints are to coincide with ¾" open joints in Traffic Railing)

** Stay-In-Place Plastic Preformed Bond Breakers are permitted to form joints.



PARTIAL PLAN VIEW FOR VERTICAL SHAPE TRAFFIC RAILING
(Skewed Approach Slab Shown, Perpendicular Approach Slab Similar)
(Precast Coping Shown, C-I-P Coping Similar) (Traffic Railing not Shown for Clarity)



PARTIAL ELEVATION VIEW
(Precast Coping & Raised Sidewalk Reinforcing not Shown for Clarity)
(Precast Coping Shown, C-I-P Coping Similar)

* C-I-P End Section must be ≥ 12'-0".

RAISED SIDEWALK NOTES:

1. When a 42" Vertical Shape Traffic Railing is used with a precast coping, increase Bars 4C to Bars 5C or provide Bars 4C @ 4" spacing within 6'-0" of Expansion Joints.
2. Construct the expansion joints, V-Grooves and face of coping plumb.
3. Provide Class II concrete for slightly aggressive environments or Class IV for moderately or extremely aggressive environments.
4. Dowel Load Transfer Devices will be hot-dip galvanized ASTM A 36 smooth round bar, or GFRP smooth round bars with a minimum shear strength of 22 ksi in accordance with ASTM D7617. Install Dowel Load Transfer Devices in accordance with Specification Section 350.
5. Construct ¾" Expansion Joints in raised sidewalk and C-I-P copings perpendicular or radial to the Gutter Line. Provide at 90'-0" maximum intervals as shown.
6. Shear Keys in Junction Slab are required when GFRP bars are used for Dowel Transfer Devices and are optional with steel dowel bars. Tongue Slope on Shear Key must be constant and between 5° to 45° from horizontal.
7. Provide and install Preformed Expansion Joint Filler in accordance with Specification Section 932.
8. Construct ½" V-Grooves in raised sidewalk and C-I-P coping at 30'-0" maximum intervals as shown. Space V-Grooves equally between ¾" Expansion Joints and/or Begin or End Raised Sidewalk. V-Groove locations are to coincide with V-Groove locations in the Traffic Railing.
9. Spacing shown is along the Gutter Line.
10. For Precast Coping only, provide Dowel Bars 4D embedded 1'-0" and extend 9" above the top of MSE wall panels. Field cut as necessary to maintain 2" minimum cover to the top of the buildup concrete. See Wall Company Drawings for number and spacing of Dowel Bars 4D.
11. Finish Sidewalks in accordance with Specification Section 522.
12. Work this Index with the following:
    Index No. 422 – Traffic Railing – (42" Vertical Shape)
    Index No. 423 – Traffic Railing – (32" Vertical Shape)
13. The following Indexes contain details of the intersection of the retaining wall at approach slabs:
    Index No. 20900 – Approach Slabs (Flexible Pavement Approaches)
    Index No. 20910 – Approach Slabs (Rigid Pavement Approaches)

CROSS REFERENCE: For Detail "B", see Sheet 2.

VERTICAL SHAPE TRAFFIC RAILINGS

LAST REVISION	REVISION	DESCRIPTION:			INDEX NO.	SHEET NO.
07/01/15			FDOT 2016 DESIGN STANDARDS	WALL COPING WITH TRAFFIC RAILING/RAISED SIDEWALK	6120	1 of 3

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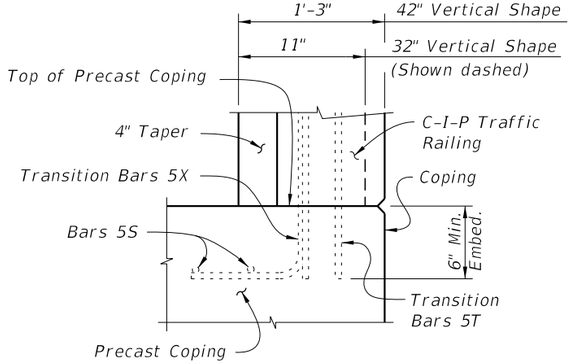
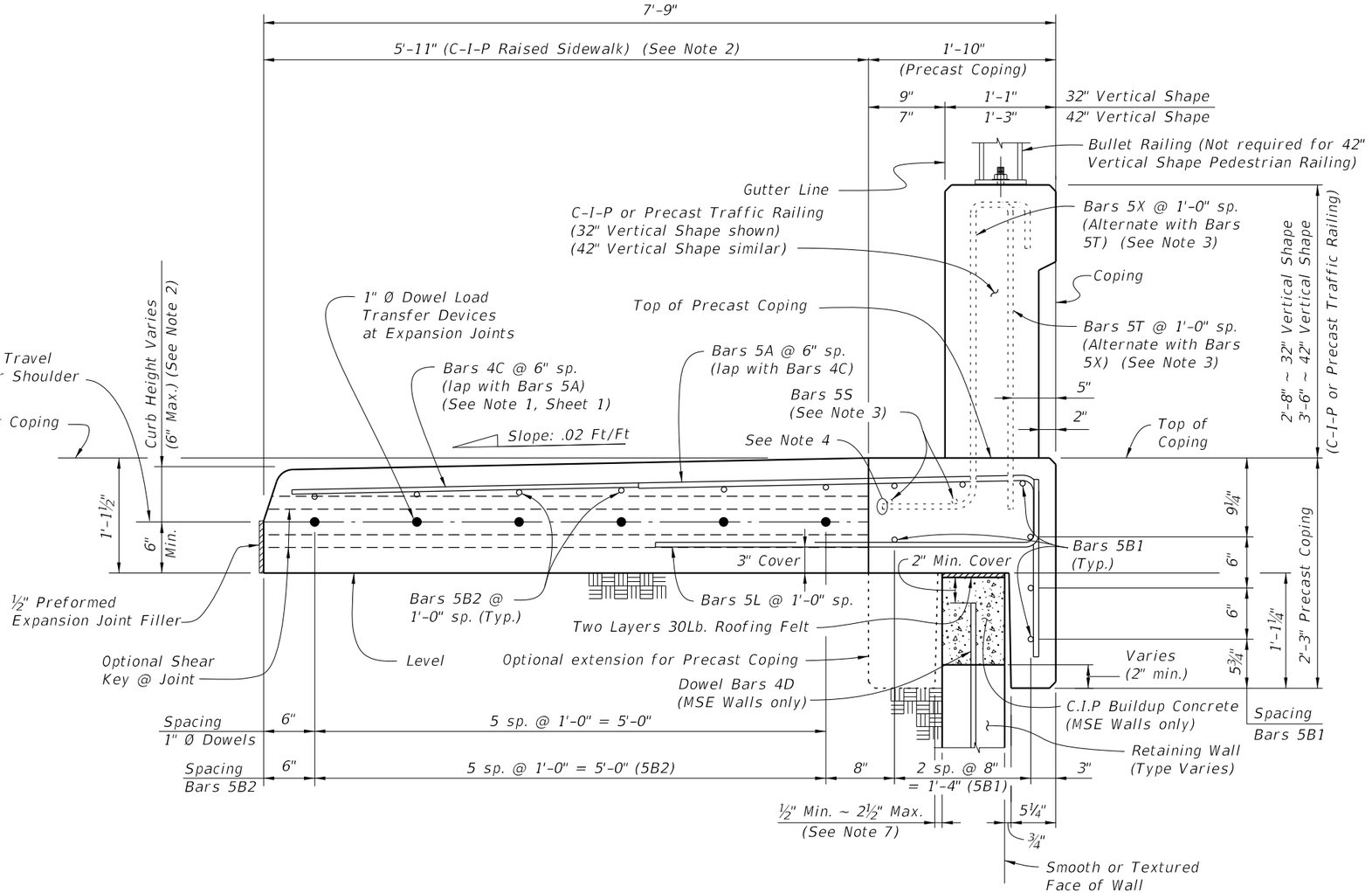


PARTIAL END VIEW OF TRAFFIC RAILING END TRANSITION FOR GUARDRAIL ATTACHMENT (Showing Bars 5S, Bars 5T and Bars 5X) (Precast Coping Shown, C-I-P Coping Similar)

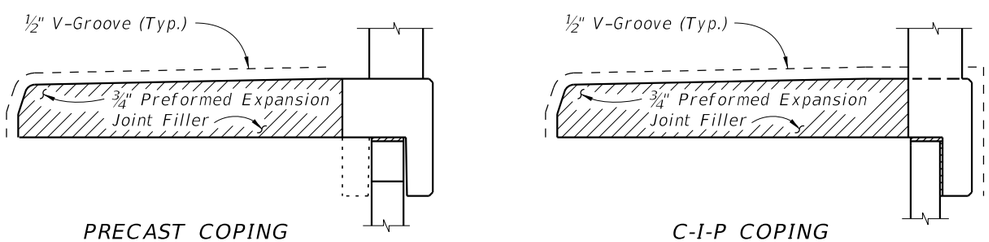
NOTE: See Index No. 422 and Index No. 423, Railing End Detail for details.

ESTIMATED QUANTITIES FOR PRECAST COPING		
ITEM	UNIT	QUANTITY
Concrete (Precast Coping)	CY/LF	0.095
Concrete (C-I-P Raised Sidewalk)	CY/LF	0.232
Reinforcing Steel (Precast Coping) excluding Bars 5T, 5X and 5S (Typ.)	LB/LF	23.90
Reinforcing Steel (C-I-P Raised Sidewalk) (Typ.)	LB/LF	13.50
Additional Reinf. @ Expansion Joints (Steel Dowels)	LB	32.04

The above concrete quantities are based on a Type D Concrete Curb (See Note 2).



TYPICAL SECTION THRU PRECAST COPING WITH C-I-P RAISED SIDEWALK AND RETAINING WALL AT EXPANSION JOINTS



PRECAST COPING *C-I-P COPING*

DETAIL "B"

(Showing Locations of ½" V-Grooves and ¾" Preformed Expansion Joint Filler)

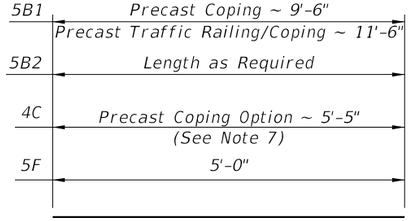
NOTES:

1. Actual width varies depending on type of Retaining Wall used.
2. Match roadway curb shape (Type) and height. See Roadway Plans and Index No. 300. 5'-11" dimension is based on a 32" Vertical Shape Traffic Railing with a Type D curb adjacent to a 6'-0" wide sidewalk. Adjust this dimension as required for other curb types or transitions at Begin or End Retaining Wall.
3. See Index No. 422 and Index No. 423 for Bars 5S, 5T & 5X and Bullet Railing details. Adjust vertical dimension of Bars 5T and 5X, see Reinforcing Steel Note 5.
4. Trim end of Bars 5T and 5X to clear construction joint for 42" Vertical Shape Traffic Railing.
5. At the Contractor's option, mechanical couplers may be used to splice reinforcing. Complete details, including reinforcement lengths are required in the Shop Drawings. Mechanical couplers shall develop 125% of the bar yield strength.
6. Contractor to maintain stability of precast coping prior to junction slab completion.
7. When the air gap between the precast coping extension and retaining wall exceeds 2½", fill gap with full depth Expanded Polystyrene to provide a maximum 2½" air gap.

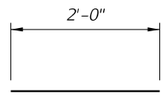
REINFORCING STEEL BENDING DIAGRAMS - RAISED SIDEWALK

BILL OF REINFORCING STEEL

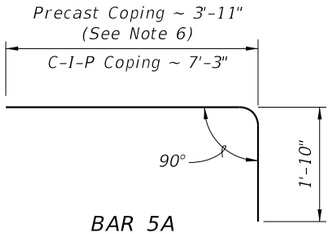
MARK	SIZE	LENGTH	
		PRECAST COPING/ RAILING	C-I-P COPING
A	5	5'-9"	9'-1"
B1	5	9'-6"/11'-6"	N/A
B2	5	AS REQD.	AS REQD.
C	4	5'-5"	N/A
F	5	5'-0"	5'-0"
L	5	4'-5"	4'-5"
1" Ø Dowel	Smooth Bar	2'-0"	2'-0"



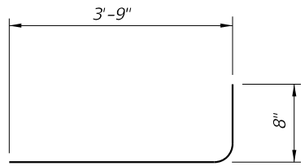
BARS 5B1, 5B2, 4C & 5F



1" Ø DOWEL



BAR 5A



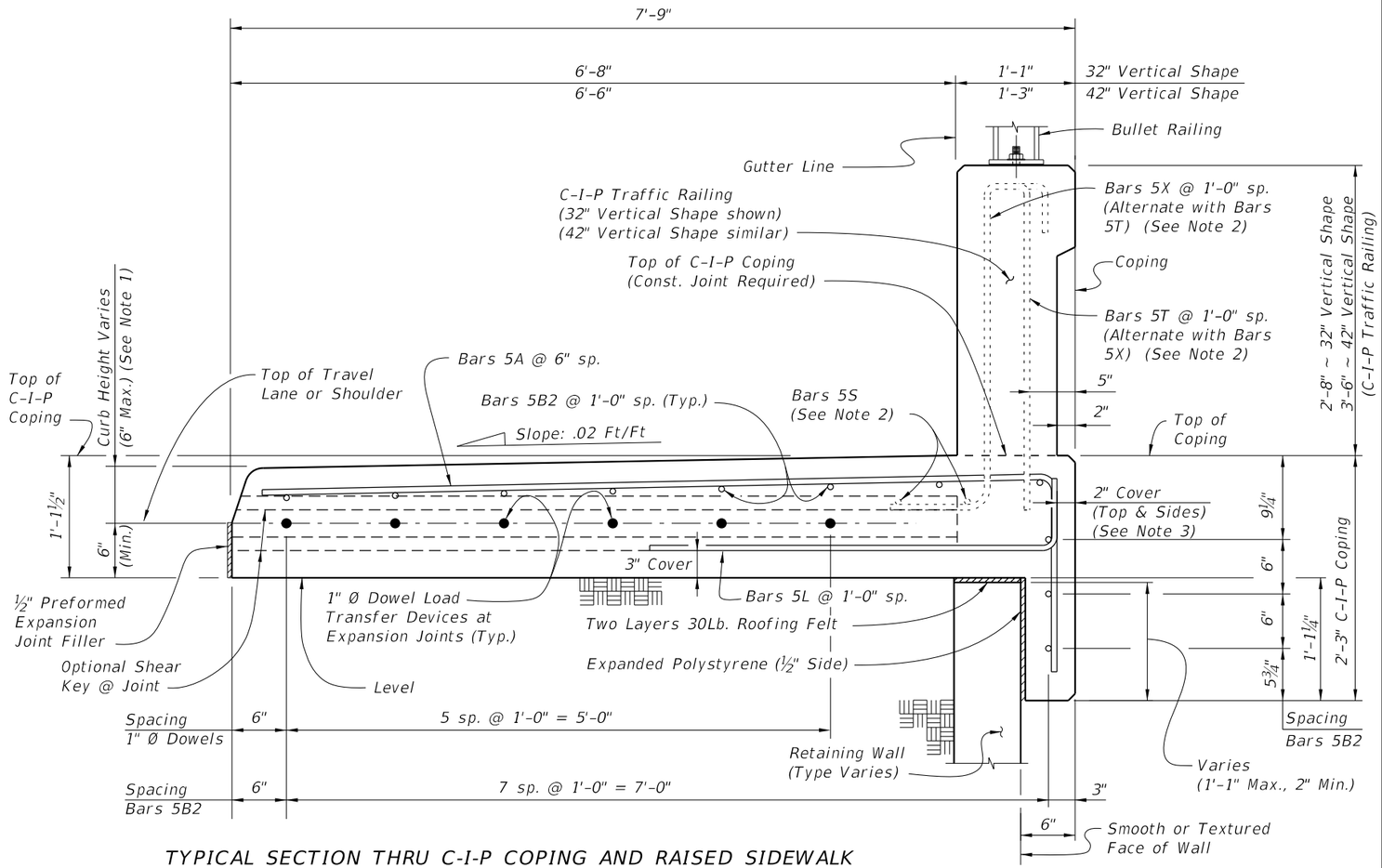
BAR 5L

REINFORCING STEEL NOTES:
1. All bar dimensions in the bending diagrams are out to out.
2. All reinforcing steel at expansion joints will have a 2" minimum cover.
3. Lap splices for Bars 5B will be a minimum of 2'-0".
4. Lap splice Bars 5A with Bars 4C. Lap splices will be a minimum of 2'-0".
5. See Index No. 422 and Index No. 423 for Bars 5S, 5T and 5X. Adjust vertical dimensions of Stirrup Bars 5T and 5X to 3'-0" for 32" Vertical Shape or 3'-10" for 42" Vertical Shape.
6. Dimension shown is for lap splice option. For mechanical coupler option, this dimension is 1'-8".
7. Dimension shown is for lap splice option. For mechanical coupler option, this dimension is 5'-8", and reinforcing size must be increased to #5 bars (Bars 5C).
8. The Contractor may use Welded Wire Reinforcement (WWR) when approved by the Engineer. WWR must consist of deformed wire meeting the requirements of Specification Section 931.

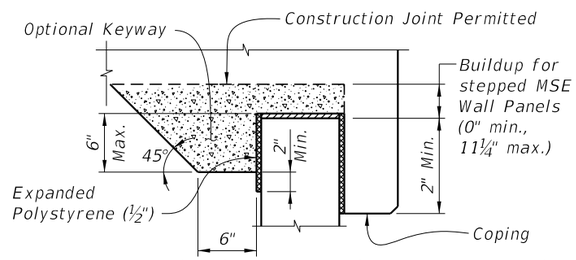
ESTIMATED QUANTITIES FOR C-I-P COPING

ITEM	UNIT	QUANTITY
Concrete	CY/LF	0.326
Reinforcing Steel (Typical) excluding Bars 5T, 5X and 5S (Typ.)	LB/LF	35.03
Additional Reinf. @ Expansion Joints (Steel Dowels)	LB	32.04

The above concrete quantities are based on a Type D Concrete Curb on a level Retaining Wall (See Note 1).



TYPICAL SECTION THRU C-I-P COPING AND RAISED SIDEWALK AND RETAINING WALL AT EXPANSION JOINTS



BUILDUP FOR STEPPED MSE WALL PANELS AND C-I-P COPING

NOTES:
1. Match roadway curb shape (Type) and height. See Roadway Plans and Index No. 300. 6'-8" dimension is based on a 32" Vertical Shape Traffic Railing with a Type D curb adjacent to a 6'-0" wide sidewalk. Adjust this dimension as required for other curb types or transitions at Begin or End Retaining Wall.
2. See Index No. 422 and Index No. 423 for Bars 5S, 5T & 5X and Bullet Railing details. Adjust vertical dimension of Bars 5T and 5X, see Reinforcing Steel Note 5.
3. If slip forming is used, submit shop drawings for approval showing 3" side cover with the Typical Section dimensions adjusted.

VERTICAL SHAPE TRAFFIC RAILINGS

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LAST REVISION	REVISION	DESCRIPTION:			
07/01/15			2016 DESIGN STANDARDS	WALL COPING WITH TRAFFIC RAILING/RAISED SIDEWALK	INDEX NO. 6120 / SHEET NO. 3 of 3