NOTES

SPECIFICATIONS:

1. General Specifications:
   The Florida Department of Transportation "Standard Specifications for Road and Bridge Construction", Current Edition and Supplements as Amended.
2. Design Specifications:
   a. Florida Department of Transportation (FDOT) "Structures Design Guidelines", Current Edition.
   b. American Association of State Highway and Transportation Officials (AASHTO) "LRFD Bridge Design Specifications", Current Edition.
   c. AASHTO-AGC-ARTBA Task Force 27 (Ground Modification Techniques), "Insitu Soil Improvement Techniques", January 1990.

DESIGN CRITERIA:

1. Design is based on the assumption that the material contained within the reinforced soil volume, methods of construction and quality of prefabricated materials are in accordance with Specification Section 548 and the reinforced backfill is free of subsurface drainage of water (seepage).
2. It is the responsibility of the Engineer of Record to determine that the maximum factored bearing pressure shown for the wall does not exceed the factored bearing resistance of the foundation for that specific wall location.
3. The Wall Company is responsible for internal stability of the wall. External stability design, including foundation and slope stability, is the responsibility of the Engineer of Record.

SOIL PARAMETERS:

1. See Wall Control Drawings for soil characteristics of foundation material to be used in the design of the wall system. The Contractor will provide soil design parameters for backfill material based on the actual soil characteristics utilized at the site. Provide the values of unit weight, cohesion and internal friction angle in the Shop Drawings.

MATERIALS:

1. Concrete class and minimum compressive strength (f'c):
   a. Except for precast wall facing panels and leveling pads, use Class II concrete for slightly aggressive environments and Class IV concrete for moderately or extremely aggressive environments. Provide all concrete, except for precast wall facing panels and leveling pads in accordance with Specification Section 346. Provide concrete for precast wall facing panels and leveling pads in accordance with Specification Section 548.
   b. For precast wall facing panels only, see Wall Control Drawings.
2. Provide reinforcing steel for systems with non-metallic soil reinforcement and metallic soil reinforcement above the 100 year flood elevation in accordance with Specification Section 548. For reinforcing steel requirements for systems with metallic soil reinforcement below the 100 year flood elevation see Wall Company Drawings.
3. Provide soil reinforcement in accordance with Specification Section 548.
4. Payment for Dowel Bars 4D used with precast or C.I.P. coping will be made under Retaining Wall System (Permanent).
5. For additional material notes see Wall Company General Notes.

CONSTRUCTION:

1. Walls will be constructed in accordance with Specification Section 548 and the Wall Company's instructions.
2. For location and alignment of retaining walls, see Wall Control Drawings.
3. If present, consider in design and analysis and locate manholes and drop inlets as shown on wall elevations.
4. Refer to Wall Control Drawings of individual walls for minimum reinforcement strip/mesh length, factored bearing resistances, minimum wall embedment and anticipated long term and differential settlements.
5. The Contractor is responsible for water retention as needed during construction.
6. It is the Contractor's responsibility to determine the location of any guardrail posts behind retaining wall panels. Prior to placement of the top layer of soil reinforcement, individual reinforcing strips/mesh may be skewed (15° maximum) to avoid the post locations if authorized by the Engineer. No cutting of soil reinforcement is allowed unless shown on Shop Drawings and approved by the Engineer. Any damage done to the soil reinforcement due to installation of the guardrail will be repaired by the Contractor at the Contractor's expense. Repair method will be approved by the Engineer.
7. If existing or future structures, pipes, foundations or guardrail posts within the reinforced soil volume interfere with the normal placement of soil reinforcement and specific directions have not been provided on the plans, the Contractor will notify the Engineer to determine what course of action should be taken.
8. The Contractor is responsible for gradually displacing upper layer(s) of soil reinforcement downward (15° maximum from horizontal) to avoid cutting soil reinforcement and conflicts with paving and subgrade preparation. The Contractor's attention is directed especially to situations where roadway superelevation and/or soil mixing are anticipated.
9. Finish sidewalks in accordance with Specification Section 522.
10. All exposed concrete surfaces will receive a Class 5 Applied Finish Coating in accordance with Specification Section 400. Refer to Typical Sections on Sheet 2 and the following notes for limits of applied finish:
    a. The inside, backside and top of Traffic Railings and Pedestrian/Bicycle Railings.
    b. Exposed surfaces of coping on top of retaining wall. Other coatings, colors or textures will be applied as required in the Wall Control Drawings.
11. For concrete facing panel surface treatment, see Wall Control Drawings. Extend surface treatment a minimum of 6" below final ground line.
12. Piles within the soil volume will be driven prior to construction of the retaining wall. The portion of the pile within the soil volume will be wrapped with polyethylene sheeting in accordance with Specification Section 459. Drive piles located within the soil volume prior to construction of the retaining wall, unless a method to protect the structure, acceptable to both the Engineer and Wall Company, is proposed and approved in writing.
13. A structural extension of the connection of the retaining wall panel to soil reinforcement will be used whenever necessary to avoid cutting or excessive skewing (greater than 15°) of the soil reinforcement around obstructions (i.e. piles, pipes, etc.).
14. For Mechanically Stabilized Earth (MSE) Walls, steps in leveling pads will occur at panel interfaces. Panels will not cantilever more than 2" past the end of the leveling pad.
15. The top of the leveling pad or footing will be 2'-0" minimum below final ground line.
16. The height of panels in the bottom course of MSE Walls must not be less than half the height of a standard panel.

QUALIFIED PRODUCTS LIST:

1. Manufacturers seeking approval of proprietary retaining wall systems for inclusion on the Qualified Products List as pre-approved wall system suppliers must submit a QPL Product Evaluation Application along with design documentation, vendor drawings, wall system construction manual and other information as required in the Retaining Wall System QPL Acceptance Criteria showing the proprietary wall system is designed to meet all specified requirements. Project specific Shop Drawings are required for QPL approved wall systems (see Shop Drawing Requirements below).

SHOP DRAWING REQUIREMENTS

The successful bidder will submit the final design of the wall for review as Shop Drawings. Details and Design Criteria shown on Shop Drawings shall not deviate from those shown on the approved QPL Vendors Drawings. The Shop Drawings will include detailed design computations and all details, dimensions and quantities necessary to construct the wall. The design and fully detailed plans will be prepared as required by current FDOT standards at time of bidding and will include, but not be limited to, presentation of required information as follows:

1. Provide an elevation view of the wall indicating:
   a. Elevations/Stations at the top of wall, top of leveling pad or footing and bottom of footing for Begin/End Retaining Wall, all breaks in vertical alignment, all whole stations and every 25 foot station increments.
   b. Panel designations and the length, size and designation of soil reinforcement in elevation view.
   c. Location of the proposed final ground line.
2. Provide a plan view detailing the horizontal alignment and offsets from the horizontal control line(s) to the exterior face of the wall.
3. Show in plan and elevation all utilities, sign supports, light pole pilasters, drainage structures, drainage pipes, etc. that affect the wall(s). Locate in the plan view all piles within the reinforced earth volume, including those for future widening, as shown on Foundation Layout Drawings.
4. Provide general notes and design parameters on the Shop Drawings. Include design soil characteristics and all other pertinent notes required for design and construction of the walls. Provide factored bearing resistances and factored bearing pressures for each wall height increment.
5. Show the limits of the soil volume (see Typical Sections at right for details).
6. Show complete details of each precast wall facing panel, slip joint and all other concrete elements incorporated in the wall. Include reinforcing bar size and spacing, complete bar bending diagrams and required embedment(s).
7. Show complete details of leveling pads and/or footings, including all steps in leveling pads.
8. Show complete details for construction of wall around obstructions. Show details for placement of soil reinforcement at acute corners and at interfaces with temporary walls.
9. Show complete details addressing conflicts between soil reinforcement, precast concrete facing panels and embedments in the reinforced soil volume. Provide full details of railings, coping, sign supports, light pole pilasters, acute corners, etc.
10. Show complete details where walls of different types intersect/influence one another.
11. Provide fully detailed design calculations for each wall height increment detailed in the Shop Drawings. Submit Shop Drawings and design calculations signed and sealed by a Professional Engineer registered in the State of Florida.

GENERAL NOTES

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
01/01/06	AVP	Typical Wall Sections moved to Sheet No. 2. Changed Sheet No. to 1 of 16.			
01/01/07	SJN	Added CONSTRUCTION NOTE 16; Changed Sheet No. to 1 of 19.			

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PERMANENT RETAINING WALL SYSTEMS

Interim Date 01/01/07

Sheet No. 1 of 19

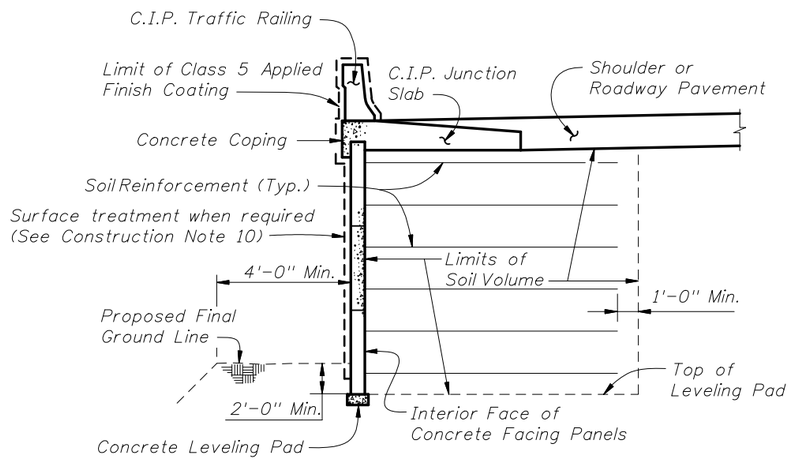
Index No. 5300

TABLE OF FDOT WALL TYPES

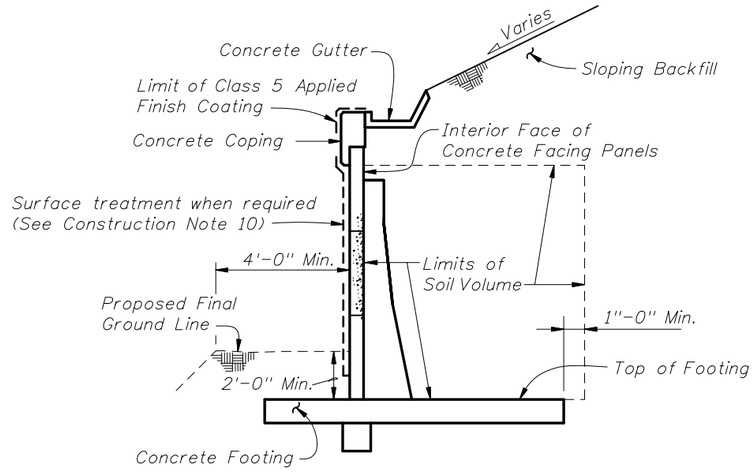
Wall Type[1]	QPL Item	Typical Wall Construction	Durability Factors				Other Allowable Wall Types[7]									
			Concrete Cover	Concrete Class	Calcium Nitrate	Soil Strap Type	1A	1B	1C	1D	2A	2B	2C	2D	2E	2F
Type 1	No	Cantilever, and Counterfort Walls	Project Specific			n/a	Project Specific									
Type 1A	Yes		2"	II	No			✓	✓	✓	✓	✓	✓	✓	✓	✓
Type 1B			2"	IV	No				✓	✓		✓	✓	✓	✓	✓
Type 1C			3"	IV	No					✓			✓	✓	✓	✓
Type 1D[4]			3"	IV	Yes											✓
Type 2	No	MSE Walls	Project Specific				Project Specific									
Type 2A	Yes		2"	II[5]	No	metal						✓	✓	✓	✓	✓
Type 2B			2"	IV[5]	No								✓	✓	✓	✓
Type 2C			3"	IV[5]	No									✓	✓	✓
Type 2D			3"	IV[6]	Yes											✓
Type 2E			3"	IV[6]	No	plastic										✓
Type 2F[4]			3"	IV[6]	Yes											
Type 3	Yes	Temporary Walls	n/a			metal/plastic										

FDOT WALL TYPE TABLE NOTES

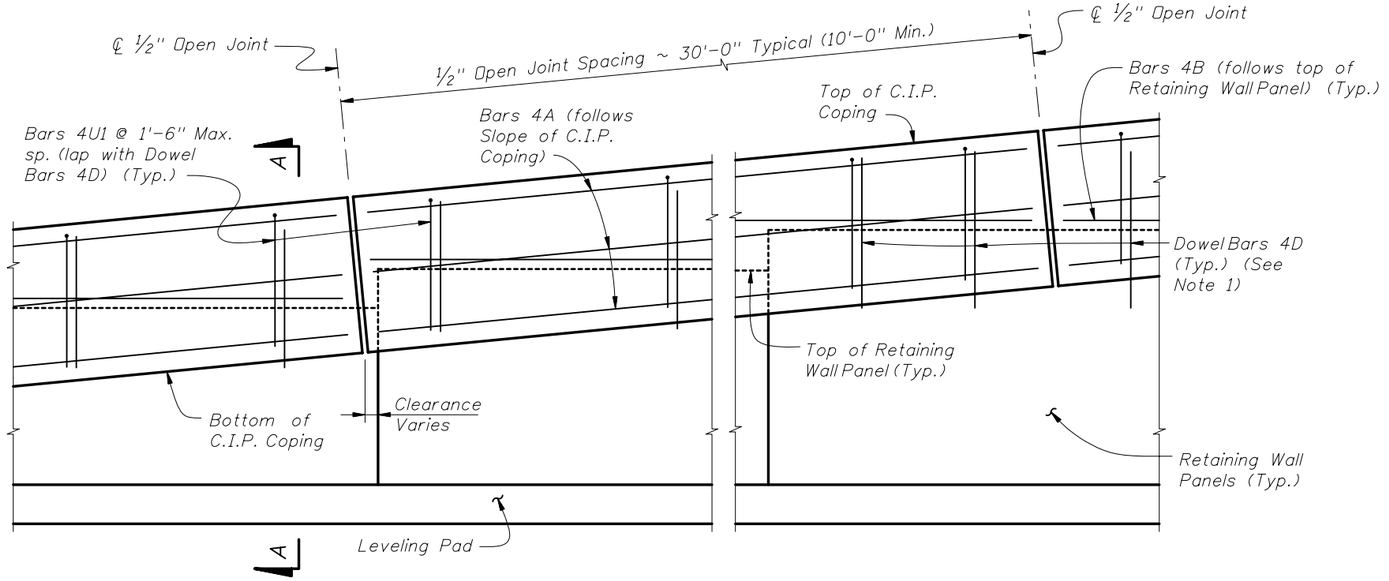
1. Listed in the Plans: Wall Type combines both Settlement Limitations and Durability Factors.
2. Amount of wall settlements that will occur in its design life and includes both short and long term settlements. Short term settlements occur during wall construction and may contain elastic deformation and densification settlement. Long term settlements continue after the completion of the wall and may include consolidation and secondary consolidation/creep settlements.
3. Settlements along the alignment of and perpendicular to the wall face; usually are not uniform. Expansion joints for the cast-in-place walls and slip joints for MSE walls are provided to control wall and wall panel cracks, respectively.
4. Includes all underground walls and walls submerged in water.
5. For concrete requirements, see Specification Section 346 using slightly aggressive environment.
6. For concrete requirements, see Specification Section 346 using extremely aggressive environment.
7. "Other Allowable Wall Types" listed with an "✓", have Settlement Limitations and Durability Factors greater then those required by the "Wall Type" (Column 1).



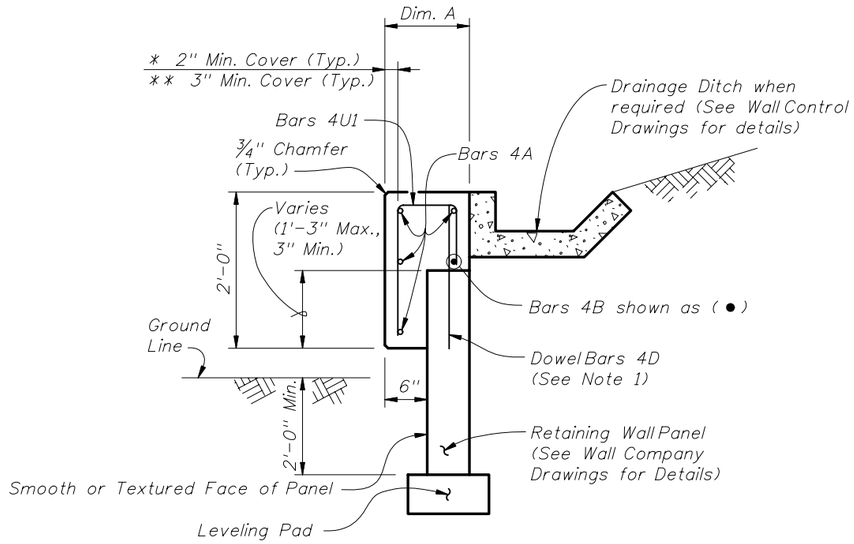
TYPICAL RETAINING WALL SECTION
WITH A TRAFFIC RAILING
(MSE Wall Type Shown, Others Similar)
(Showing Limits of the Reinforced Soil Volume)



TYPICAL RETAINING WALL SECTION
WITHOUT A TRAFFIC RAILING
(Counterfort Wall Type Shown, Others Similar)
(Showing Limits of the Soil Volume)



C.I.P. COPING - PARTIAL ELEVATION VIEW

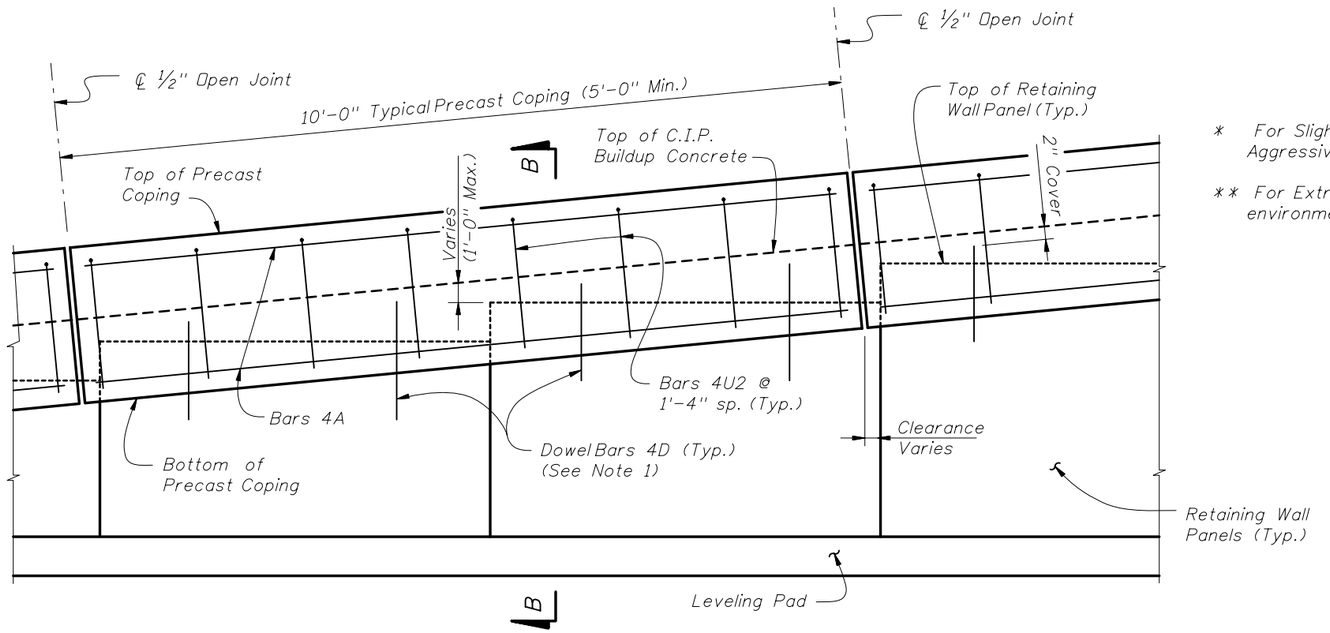


SECTION A-A
C.I.P. COPING

PRECAST AND C.I.P. COPING NOTES:

1. Dowel Bars 4D extend 1'-0" above the top of retaining wall panel. Field cut as necessary to maintain 2" minimum cover. See Wall Company Drawings for number and spacing of Dowel Bars 4D.

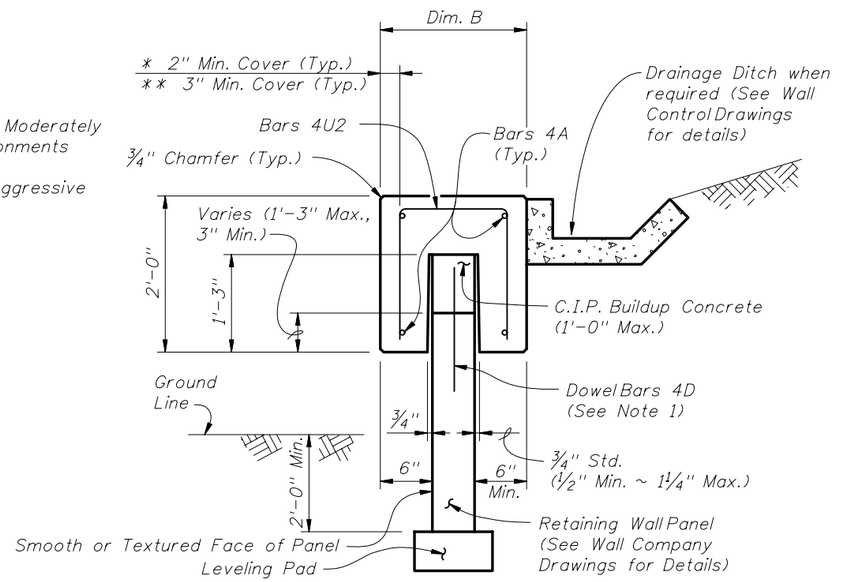
Dim. A	Panel width + 6"
Dim. B	Panel width + 1'-0" Min.



PRECAST COPING - PARTIAL ELEVATION VIEW

* For Slightly and Moderately Aggressive environments

** For Extremely Aggressive environments.



SECTION B-B
PRECAST COPING

PRECAST AND C.I.P. COPING DETAILS

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
01/01/06	SJN	Added variable offset to back of panel in SECTION B-B and "Smooth or Textured Face of Panel" call out to SECTIONS A-A & B-B. Changed "Leveling" to "Buildup" in Section B-B, 1'-0" to 1'-0" Min. in Dim. B equation, Sheet No. to 3 of 16.	01/01/07	SJN	Changed Sheet No. to 3 of 19.

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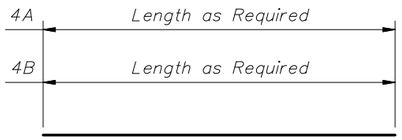
REINFORCING STEEL BENDING DIAGRAMS - PRECAST AND C.I.P. COPINGS

BILL OF REINFORCING STEEL

MARK	SIZE	LENGTH # S or M	LENGTH # E
A	4	AS REQD.	AS REQD.
B	4	AS REQD.	AS REQD.
D	4	2'-0"	2'-0"
U1	4	Panel width + 4"	Panel width + 3"
U2	4	Panel width + 8"	Panel width + 6"
U3	4	Panel width + 4"	Panel width + 3"

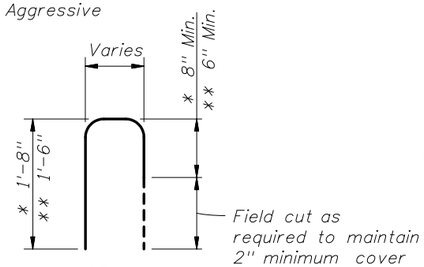
REINFORCING STEEL NOTES:
1. All bar dimensions in the bending diagrams are out to out.
2. All reinforcing steel at the open joints will have a 2" minimum cover.
3. Bars 4A may be continuous or spliced at the construction joints. Lap splices for Bars 4A will be a minimum of 1'-8".
4. The Contractor may use Welded Wire Reinforcement when approved by the Engineer. Welded Wire Reinforcement will conform to ASTM A 497.

\# S = Slightly Aggressive
M = Moderately Aggressive
E = Extremely Aggressive

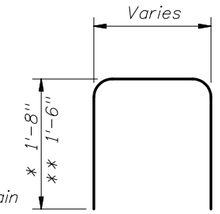


BARS 4A & 4B

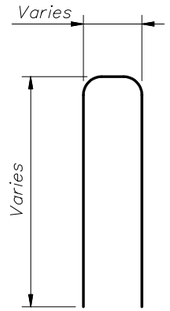
DOWEL BAR 4D



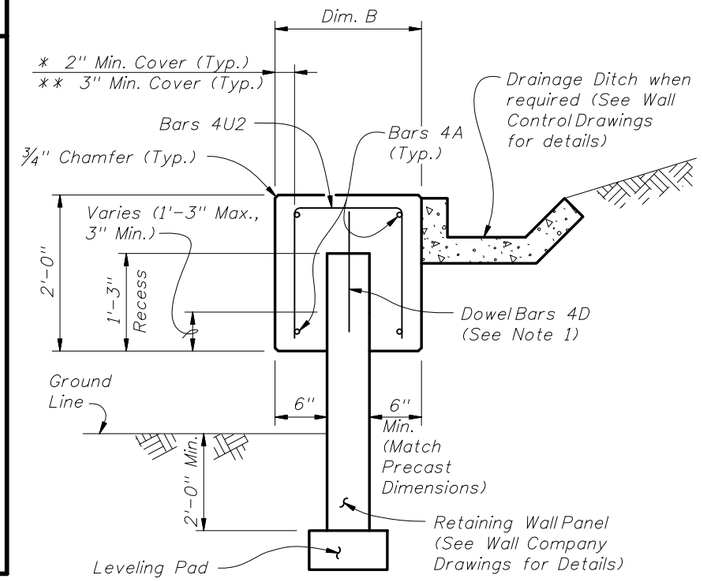
BAR 4U1



BAR 4U2

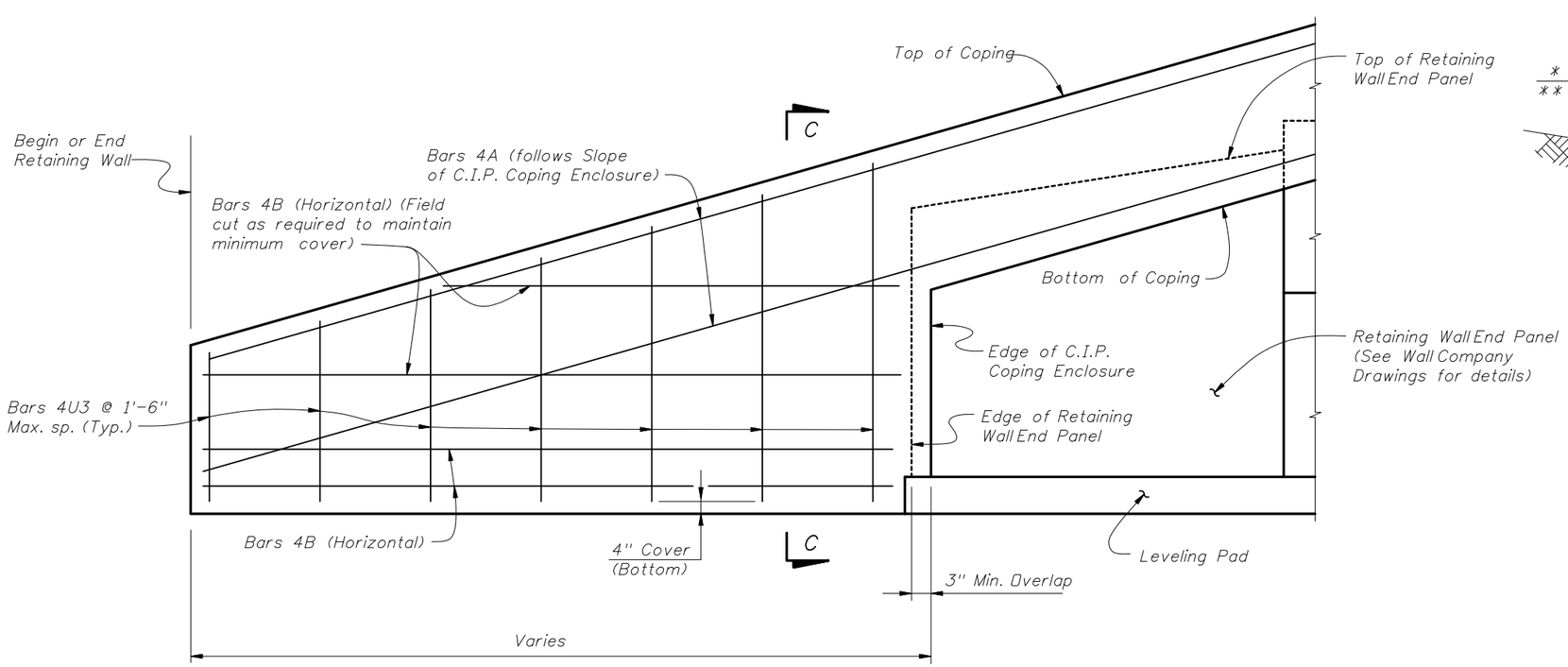


BAR 4U3

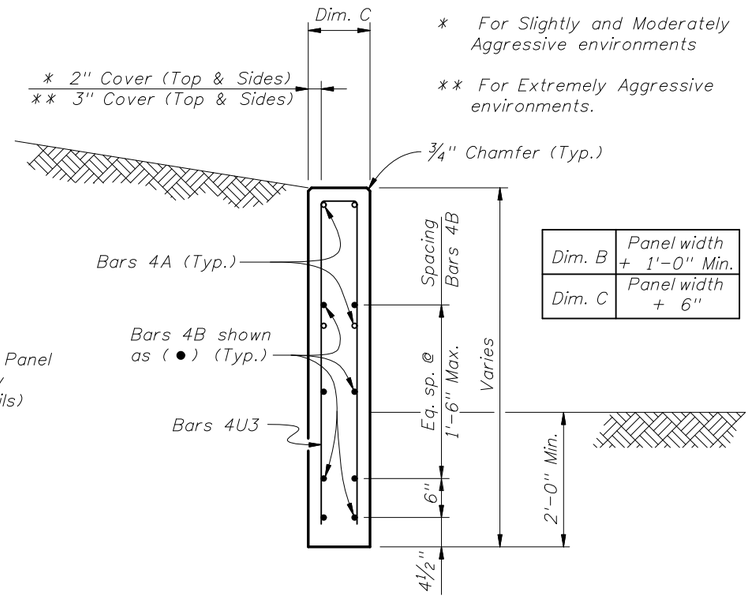


C.I.P. COPING USED WITH PRECAST COPING

Note: When precast coping units do not fit the entire length of the retaining wall, use this similar C.I.P. coping for short portions between precast coping units. This C.I.P. coping may also be used for vertical copings.



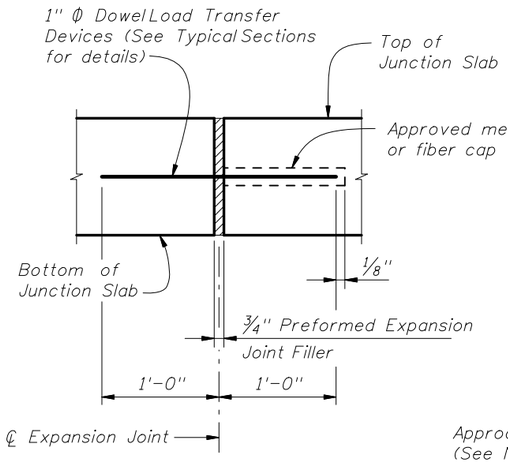
C.I.P. COPING ENCLOSURE DETAIL



SECTION C-C

PRECAST AND C.I.P. COPING DETAILS

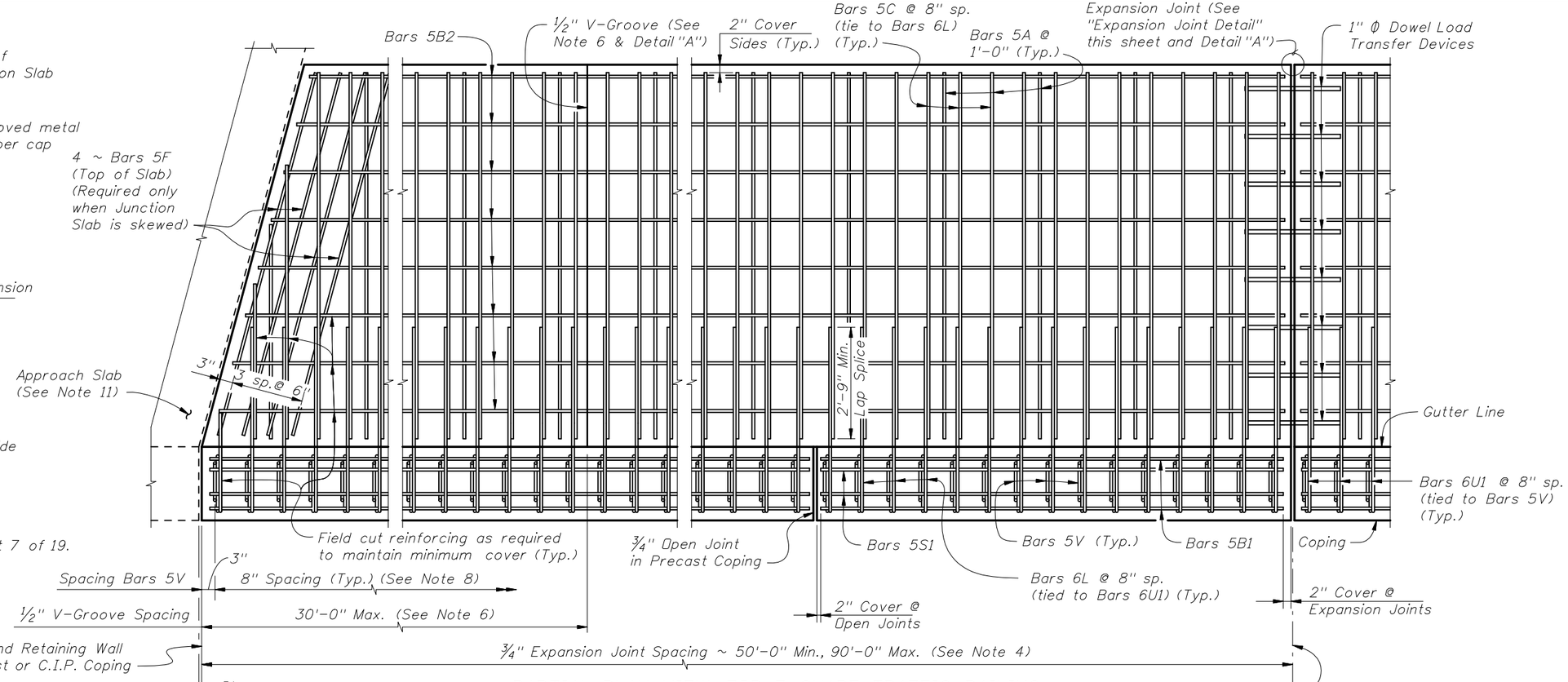
REVISIONS						2006 Interim Design Standard	Interim Date	Sheet No.
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	PERMANENT RETAINING WALL SYSTEMS	01/01/07	4 of 19
01/01/06	SJN	Added "Min. (Match Precast Panel)" to 6" dimension at back of panel. Changed 1'-0" to 1'-0" Min. in Dim. B equation, Sheet No. to 4 of 16.	01/01/07	SJN	Deleted chamfer on bottom face of C.I.P. Coping Enclosure in SECTION C-C; Changed "Welded Wire Fabric" to "Welded Wire Reinforcement" and Sheet No. to 4 of 19.		Index No. 5300	



EXPANSION JOINT DETAIL

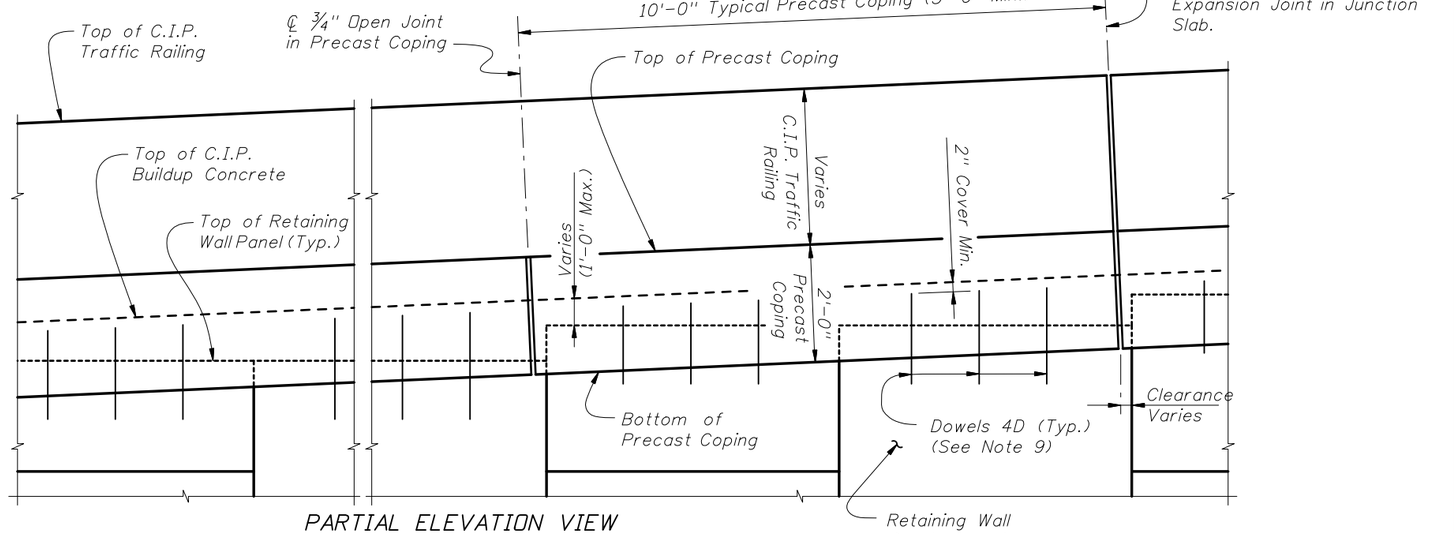
(Junction Slab expansion joints are to coincide with 3/4" open joints in Traffic Railing)

CROSS REFERENCE: For Detail "A", see Sheet 7 of 19.



PARTIAL PLAN VIEW FOR F-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 and Junction Slab Reinforcing not Shown for Clarity)
(Precast Coping Shown, C.I.P. Coping Similar)

JUNCTION SLAB NOTES:

1. CONSTRUCTION REQUIREMENTS: Construct the Junction Slab level transversely and expansion joints plumb; do not construct the junction slab or C.I.P. coping perpendicular to the roadway surface. Slip forming is not permitted.
2. APPLICATIONS: This junction slab is only applicable for a TL-4 crash test rating. Precast Traffic Railings are not allowed.
3. REINFORCING STEEL: Dowel Load Transfer Devices will be ASTM A 36 smooth round bar and hot-dip galvanized in accordance with Specification Section 962. Install Dowel Load Transfer Devices in accordance with Specification Section 350.
4. Construct 3/4" Expansion Joints in junction slabs and C.I.P. copings plumb and perpendicular or radial to the Gutter Line. Provide at 90'-0" maximum intervals as shown.
5. Provide and install Preformed Expansion Joint Filler in accordance with Specification Section 932.
6. Construct 1/2" V-Grooves in junction slabs and C.I.P. copings plumb and provide at 30'-0" maximum intervals as shown. Space V-Grooves equally between 3/4" Expansion Joints and/or Begin or End Junction Slab. V-Groove locations are to coincide with V-Groove locations in the Traffic Railing.
7. FILL REQUIREMENTS: Shoulder or Roadway Pavement or Fill is required on top of the junction slab for its entire length on the traffic side of the Traffic Railing. See Typical Sections on Sheet Nos. 6 and 7 of 19 for details.
8. Spacing shown is along the Gutter Line.
9. For Precast Coping only, Dowel Bars 4D are to extend 1'-0" above the top of retaining wall panel. 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.
10. Work this Index with the following:
    Index No. 420 - Traffic Railing - (32" F-Shape)
    Index No. 425 - Traffic Railing - (42" F-Shape).
11. 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)

PRECAST OR C.I.P. COPING WITH C.I.P. JUNCTION SLAB DETAILS

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
01/01/06	SJN	Changed "Leveling" to "Buildup" in PARTIAL ELEVATION VIEW and Note 9, Sheet No. to 5 of 16	01/01/07	SJN	Changed JUNCTION SLAB NOTE 2, Expansion Joint annotation in PLAN VIEW, Height of Traffic Railing in ELEVATION VIEW, Bars 6C to 5C, Bars "6A @ 8" sp." to "5A @ 1'-0" sp.", referenced sheet numbers, and Sheet No. to 5 of 19.

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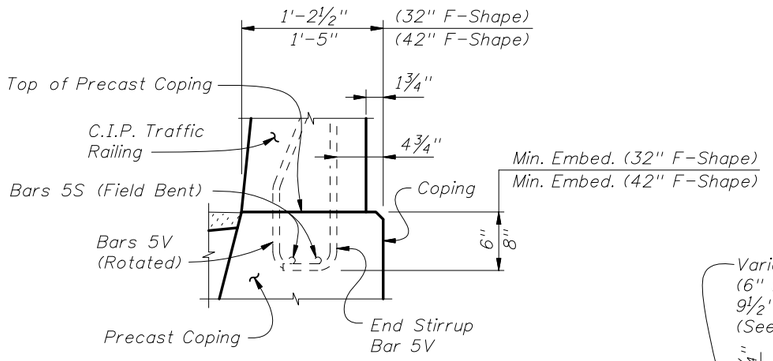
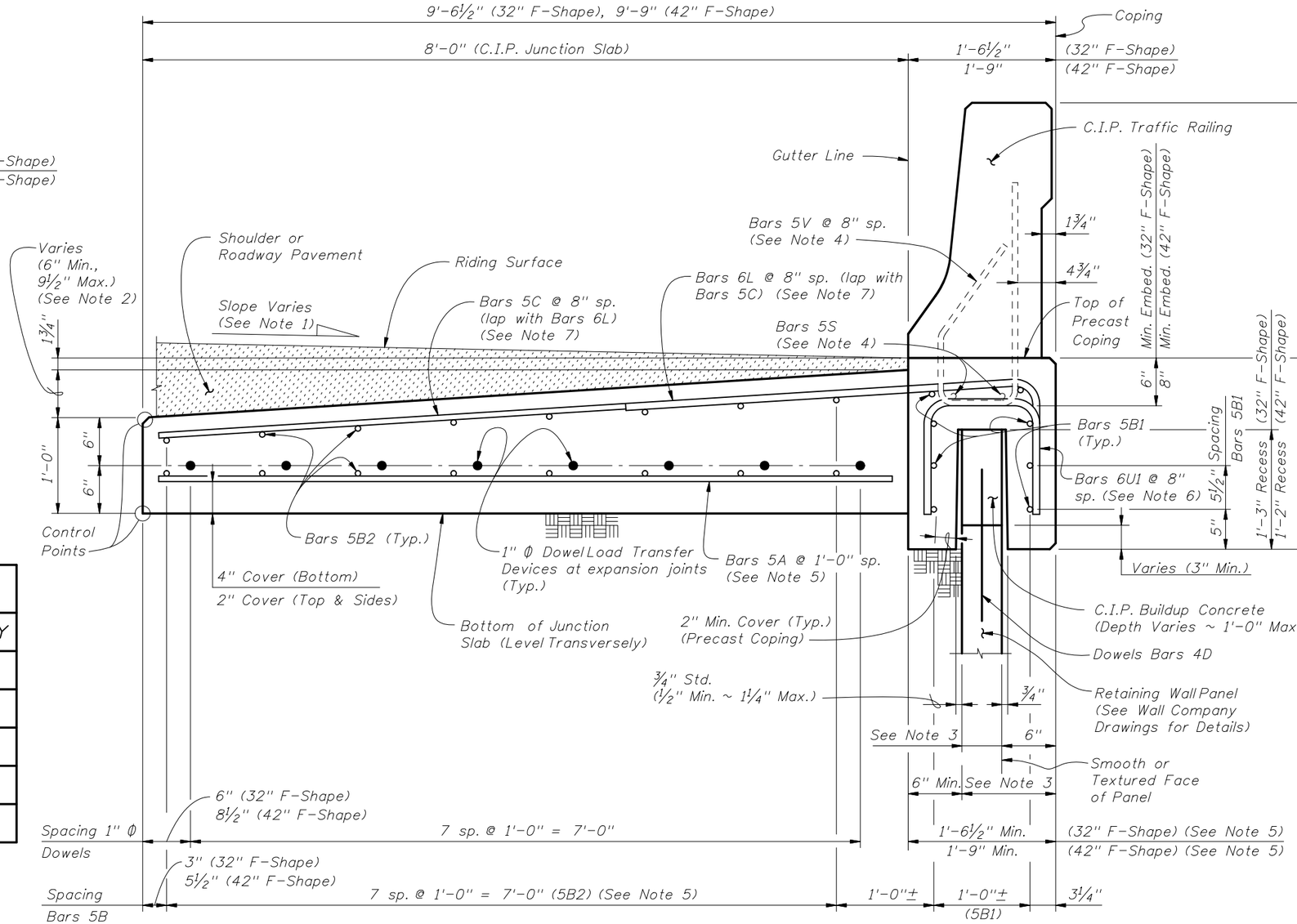


PARTIAL END VIEW OF TRAFFIC RAILING END TRANSITION FOR GUARDRAIL ATTACHMENT (Showing Bars 5V and Bars 5S) (Precast Coping Shown, C.I.P. Coping Similar)

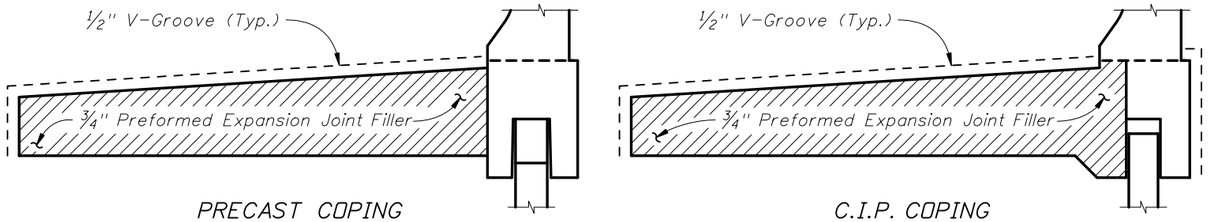
NOTE: See Index No. 420 and Index No. 425, Detail "A" for details.

ESTIMATED QUANTITIES FOR PRECAST COPING		
ITEM	UNIT	QUANTITY
Concrete (Precast Coping)	CY	0.921
Concrete (C.I.P. Junction Slab)	CY/FT	0.370
Reinforcing Steel (Precast Coping) excluding Bars 5V and 5S (Typ.)	LB	282.04
Reinforcing Steel (C.I.P. Junction Slab) (Typ.)	LB/FT	36.68
Additional Reinf. @ Expansion Joints	LB	42.72

(The above concrete quantities are based on a superelevation of 6.25% and a 5" wide retaining wall panel, beneath a 32" F-Shape Traffic Railing. The above Precast Coping quantities are based on one 10'-0" Precast Coping segment.)



TYPICAL SECTION THRU PRECAST COPING WITH C.I.P. JUNCTION SLAB AND RETAINING WALL AT EXPANSION JOINTS



DETAIL "A"

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

JUNCTION SLAB NOTES:

1. Match Cross Slope of Travel Lane or Shoulder.
2. The minimum dimension of 6" corresponds to a superelevation of 6.25%. For superelevations exceeding 6.25%, increase this dimension (i.e., shift control points down) as required to match roadway superelevation.
3. Actual width varies depending on type of Retaining Wall used.
4. See Index No. 420 and Index No. 425 for Bars 5S and 5V.
5. The Precast Coping width is based on a maximum 6½" wide Retaining Wall Panel. If the Retaining Wall Panel is wider than 6½", increase the width by the difference between the two Retaining Wall Panel widths. Increase the length of Bars 6L and decrease the length of Bars 5A & 5C as required when the coping width is increased and adjust spacing of Bars 5B2 as required to maintain 2" minimum cover.
6. Increase the width (1'-2½") of Bars 6U1 as required to maintain 2" minimum cover when recess width exceeds 8".
7. 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.

PRECAST OR C.I.P. COPING WITH C.I.P. JUNCTION SLAB DETAILS (F-SHAPE TRAFFIC RAILINGS)

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
01/01/06	SJN	Added "Min." to Precast Coping width, variable offset to back of panel & "Smooth or Textured Face of Panel" in TYPICAL SECTION. Deleted 45° Chamfer on Junction Slab: Changed Sheet No. to 6 of 16, "Leveling" to "Buildup" in TYP. SECTION	01/01/07	SJN	and Estimated Quantity for Concrete (C.I.P. Junction Slab). Added 42" F-Shape Traffic Railing; Changed EST. QUANTITIES, Bars 6C to 5C, Bars "6A @ 8" sp." to "5A @ 1'-0" sp." and Sheet No. to 6 of 19.

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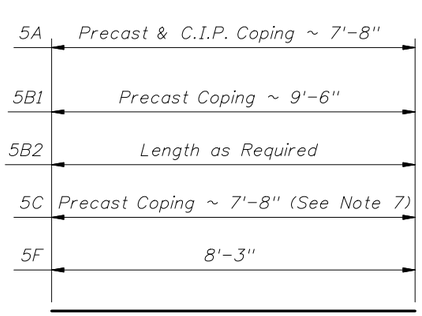
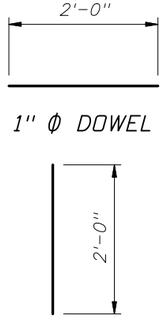
REINFORCING STEEL BENDING DIAGRAMS - JUNCTION SLAB

BILL OF REINFORCING STEEL

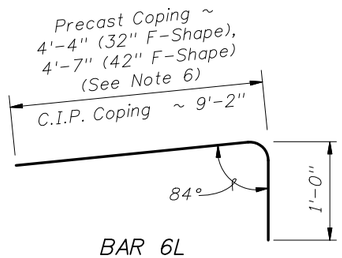
MARK	SIZE	LENGTH		
		PRECAST COPING		C.I.P. COPING
		(32" F-SHAPE)	(42" F-SHAPE)	
A	5	7'-8"	7'-8"	7'-8"
B1	5	9'-6"	9'-6"	N/A
B2	5	AS REQD.	AS REQD.	AS REQD.
C	5	7'-8"	7'-8"	N/A
D	4	2'-0"	2'-0"	N/A
F	5	8'-3"	8'-3"	8'-3"
L	6	5'-4"	5'-7"	10'-2"
U1	6	3'-8"	3'-8"	3'-8"
1" ϕ Dowel	Smooth Steel Bar	2'-0"	2'-0"	2'-0"



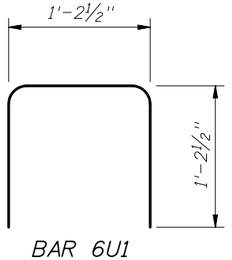
BARS 5A, 5B1, 5B2, 5C & 5F



DOWEL BAR 4D



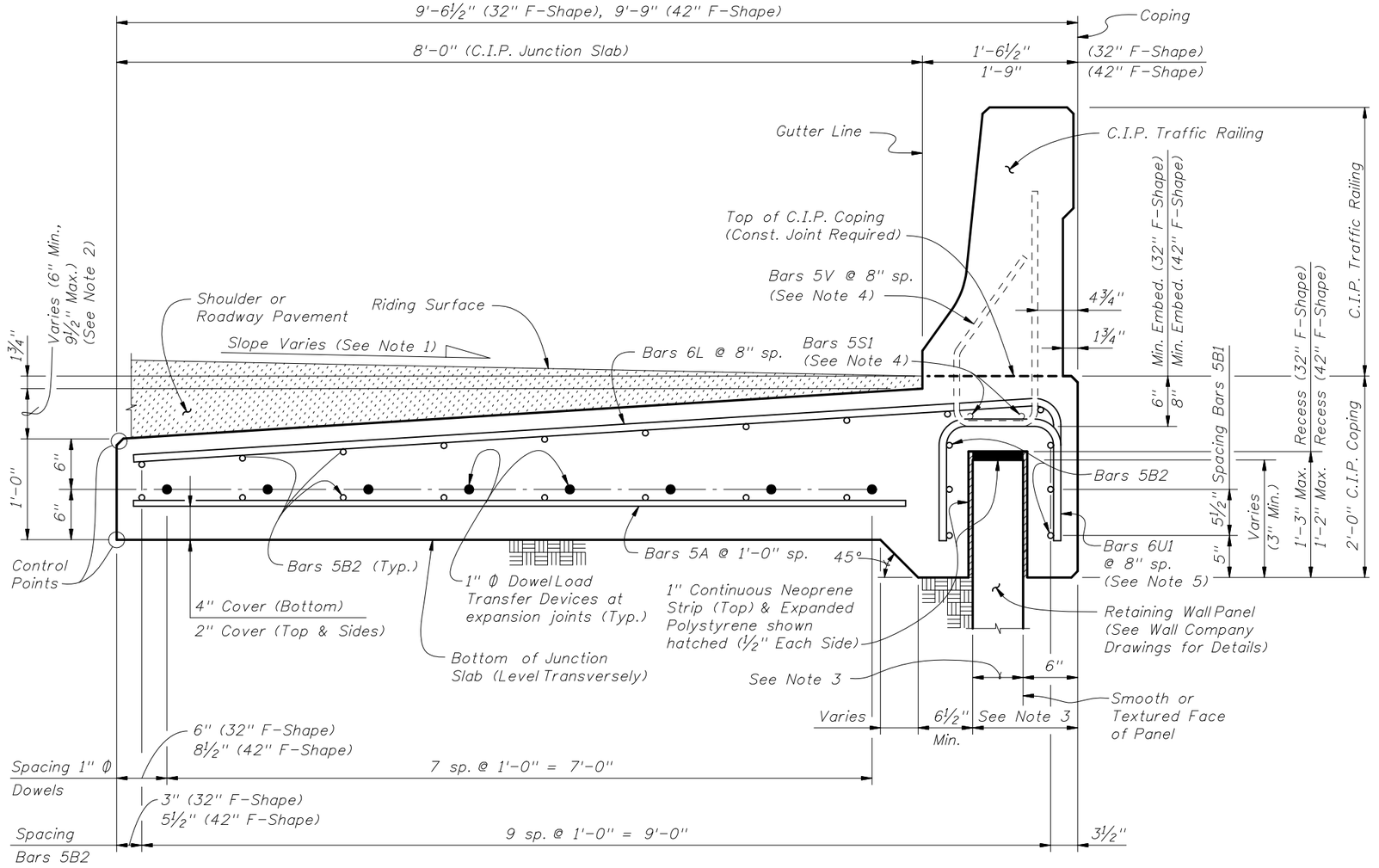
BAR 6L



BAR 6U1

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 5B2 will be a minimum of 2'-2".
4. For Precast Coping only, lap splice Bars 6L with Bars 5C. Lap splices will be a minimum of 2'-9".
5. See Index No. 420 and Index No. 425 for Bars 5S and 5V.
6. Dimension shown is for lap splice option. For mechanical coupler option, this dimension is 1'-4½" (32" F-Shape) or 1'-7" (42" F-Shape).
7. Dimension shown is for lap splice option. For mechanical coupler option, this dimension is 7'-9".
8. The Contractor may use Welded Wire Reinforcement when approved by the Engineer. Welded Wire Reinforcement will conform to ASTM A 497.



TYPICAL SECTION THRU C.I.P. COPING AND JUNCTION SLAB AND RETAINING WALL AT EXPANSION JOINTS

ESTIMATED QUANTITIES FOR C.I.P. COPING		
ITEM	UNIT	QUANTITY
Concrete	CY/Ft.	0.468
Reinforcing Steel (Typical) excluding Bars 5V and 5S (Typ.)	Lb./Ft.	64.20
Additional Reinf. @ Expansion Joint	Lb./Ft.	42.72

(The above concrete quantities are based on a superelevation of 6.25% and a 5" wide retaining wall panel, beneath a 32" F-Shape Traffic Railing).

JUNCTION SLAB NOTES:

1. Match Cross Slope of Travel Lane or Shoulder.
2. The minimum dimension of 6" corresponds to a superelevation of 6.25%. For superelevations exceeding 6.25%, increase this dimension (i.e., shift control points down) as required to match roadway superelevation.
3. Actual width varies depending on type of Retaining Wall used.
4. See Index No. 420 and Index No. 425 for Bars 5S and 5V.
5. Increase the width (1'-2½") of Bars 6U1 as required to maintain 2" minimum cover when recess width exceeds 8".

PRECAST OR C.I.P. COPING WITH C.I.P. JUNCTION SLAB DETAILS (F-SHAPE TRAFFIC RAILINGS)

REVISIONS

DATE	BY	DESCRIPTION
01/01/06	SJN	Added "Smooth or Textured Face of Panel" call out to TYPICAL SECTION. Changed Sheet No. to 7 of 16, "Precast" to "C.I.P." in coping dimension and offset to face of panel in TYPICAL SECTION.
01/01/07	SJN	Added 42" F-Shape Traffic Railing; Changed Bar 6L lateral dim. to 4'-4" for Precast Coping & REIN. STEEL NOTE 6, "Fabric" to "Reinforcement", Bars 6C to 5C, Bars "6A @ 8" sp." to "5A @ 1'-0" sp.", EST. QUANTITIES, & Sheet No. to 7 of 19.

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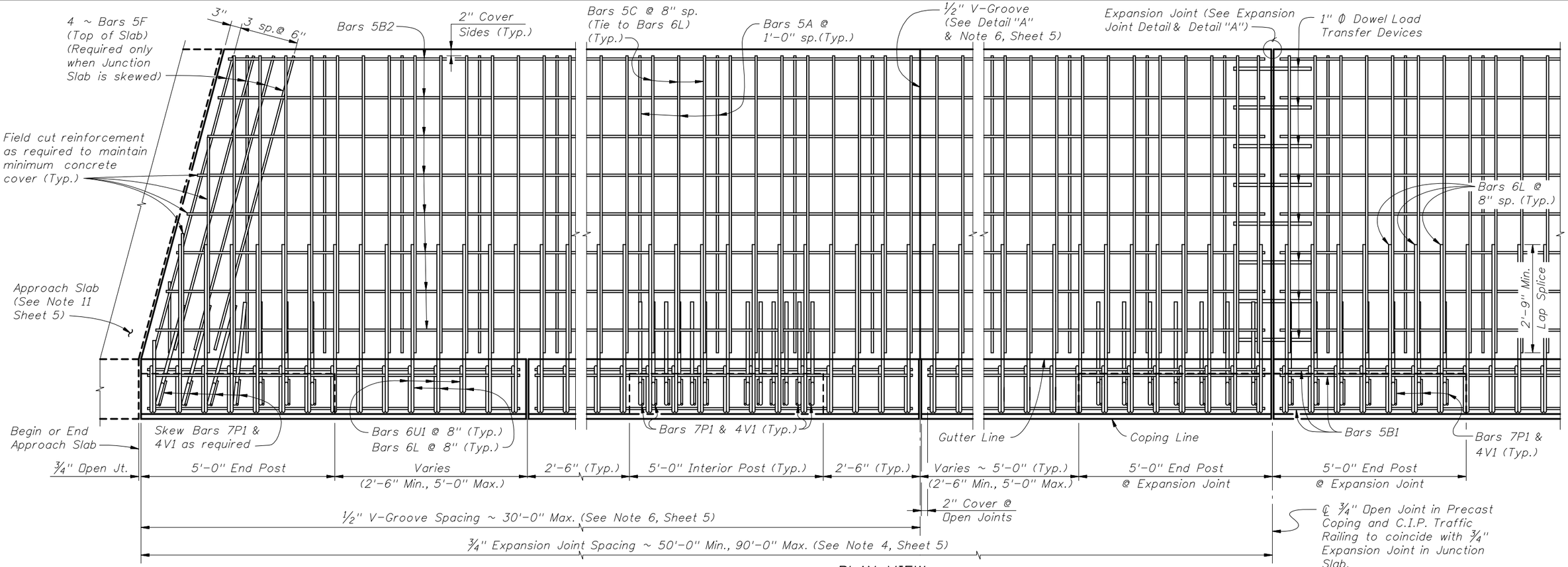
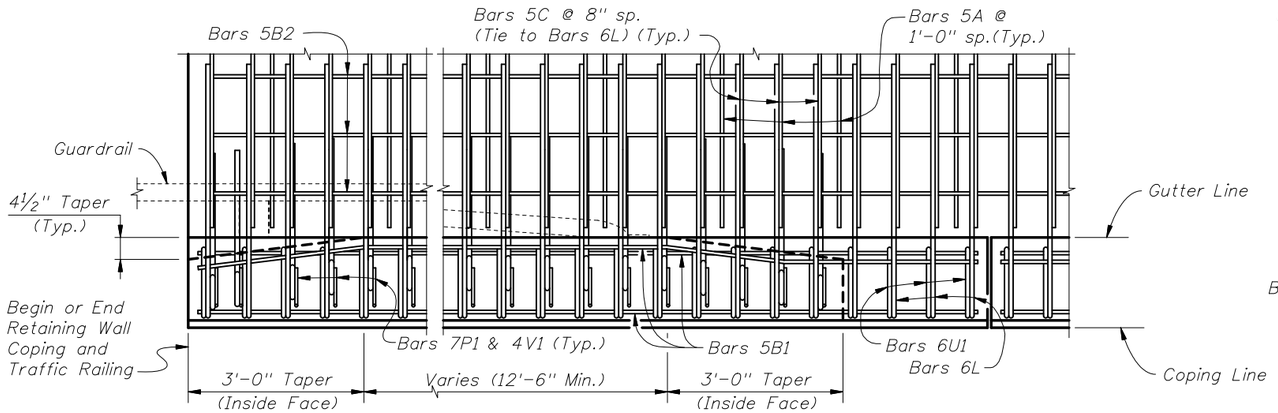
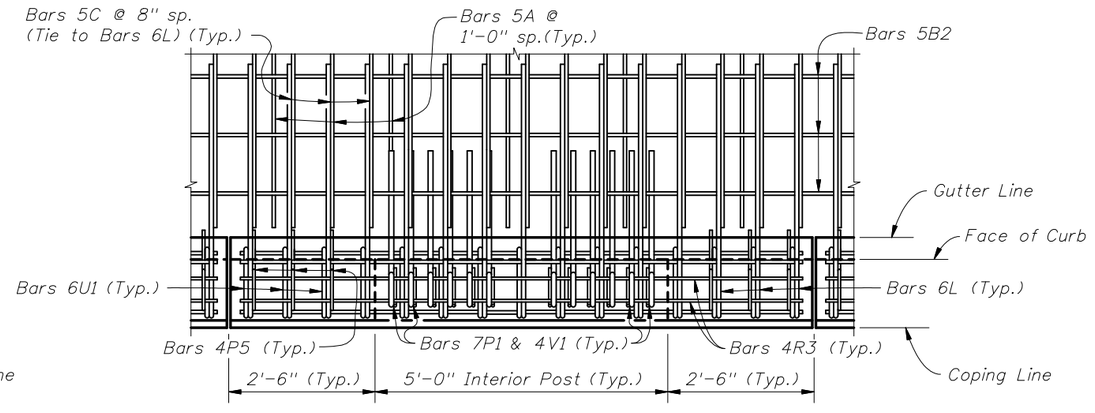


PLAN VIEW
(Skewed Approach Slab shown, Perpendicular Approach Slab similar)
(Precast Coping shown, C.I.P. Coping similar)
(Traffic Railing reinforcement not shown, except for Bars 7P1 & 4V1)

CROSS REFERENCES:
1. For Detail "A" see Sheet 6 of 19.
2. For "Expansion Joint Detail" see Sheet 5 of 19.
3. For "Junction Slab Notes" see Sheet 5 of 19.



PARTIAL PLAN VIEW OF GUARDRAIL TRANSITION AT BEGIN OR END RETAINING WALL
(Precast Coping shown, C.I.P. Coping similar)
(Traffic Railing reinforcement not shown, except for Bars 7P1 & 4V1)



PARTIAL PLAN VIEW OF COPING WITH CURB
(Precast Coping shown, C.I.P. Coping similar)
(Traffic Railing reinforcement not shown, except for Bars 4P5, 4R3, 7P1 & 4V1)

PRECAST OR C.I.P. COPING WITH JUNCTION SLAB (CORRAL SHAPE TRAFFIC RAILING)

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
01/01/07	SJN	Added New Sheet.			

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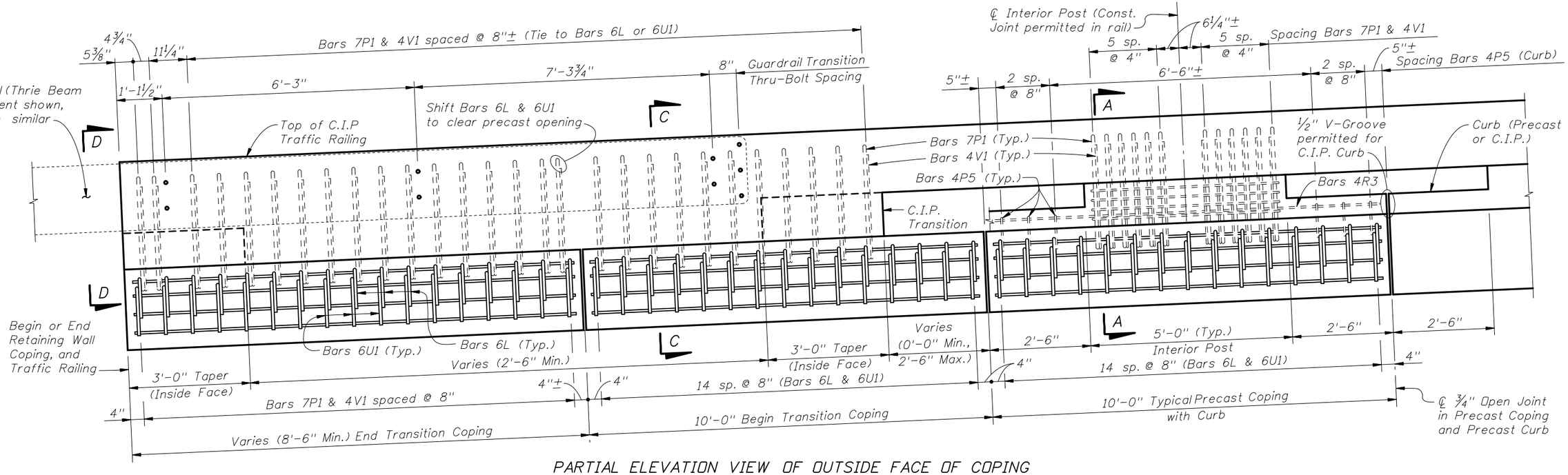
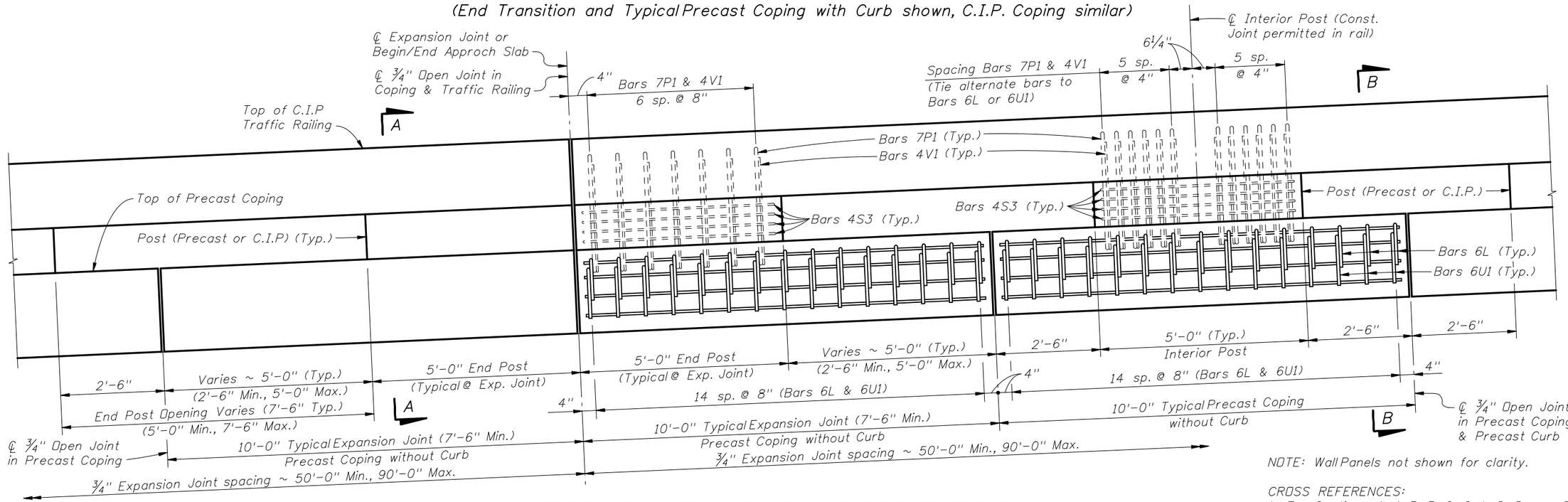


PARTIAL ELEVATION VIEW OF OUTSIDE FACE OF COPING
(End Transition and Typical Precast Coping with Curb shown, C.I.P. Coping similar)



PARTIAL ELEVATION VIEW OF OUTSIDE FACE OF COPING
(Precast Coping at Expansion Joint and Typical Precast Coping without Curb shown, C.I.P. Coping similar)

NOTE: Wall Panels not shown for clarity.

CROSS REFERENCES:
1. *For Sections A-A, B-B, C-C & D-D, see Sheet 10 of 19.*
2. *For Junction Slab Notes, see Sheet 5 of 19.*

PRECAST OR C.I.P. COPING WITH JUNCTION SLAB (CORRAL SHAPE TRAFFIC RAILING)

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
01/01/07	SJN	Added New Sheet.			

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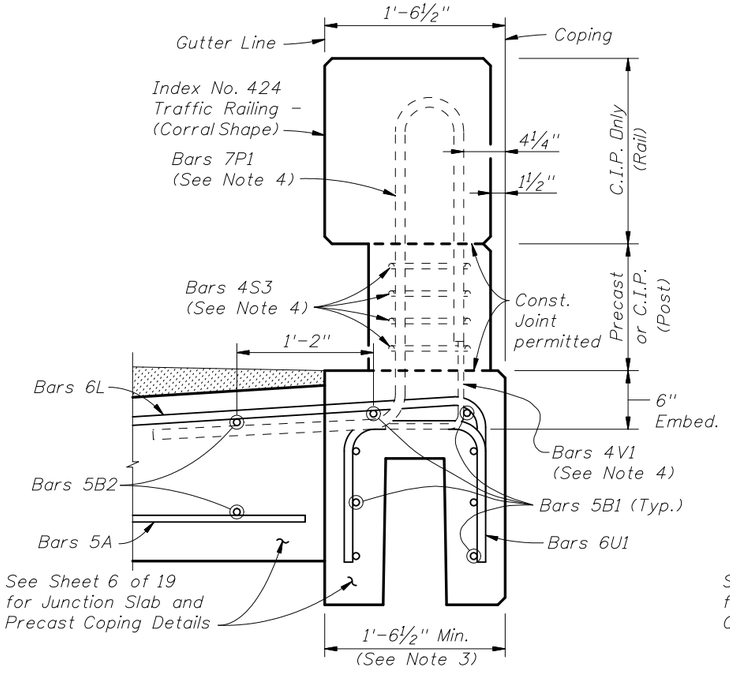
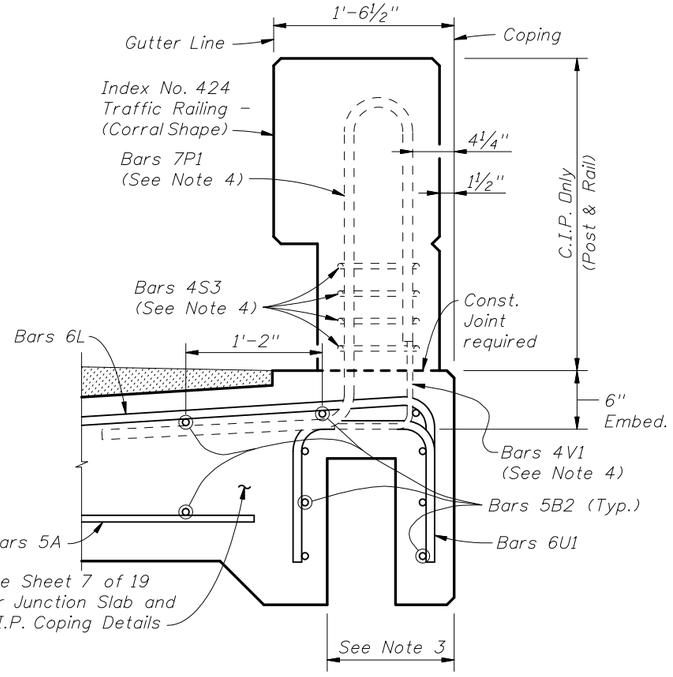
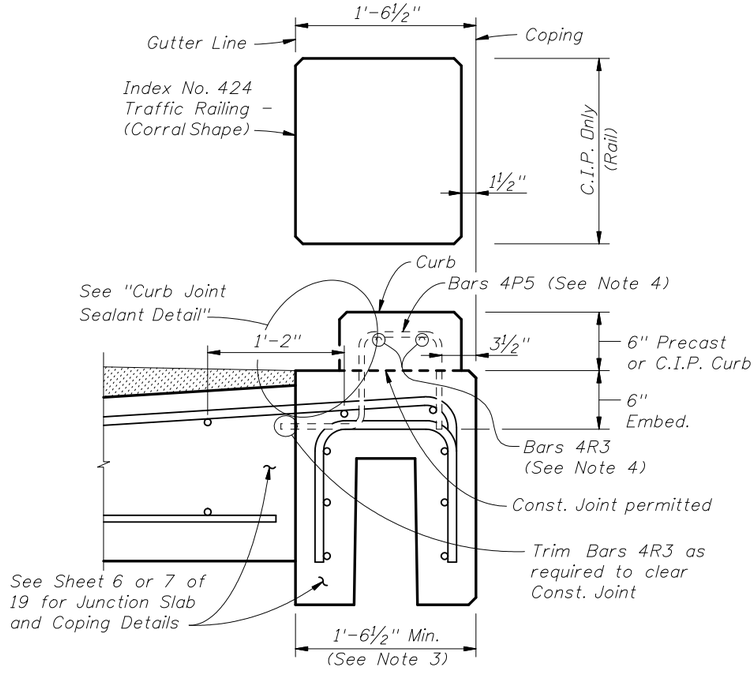


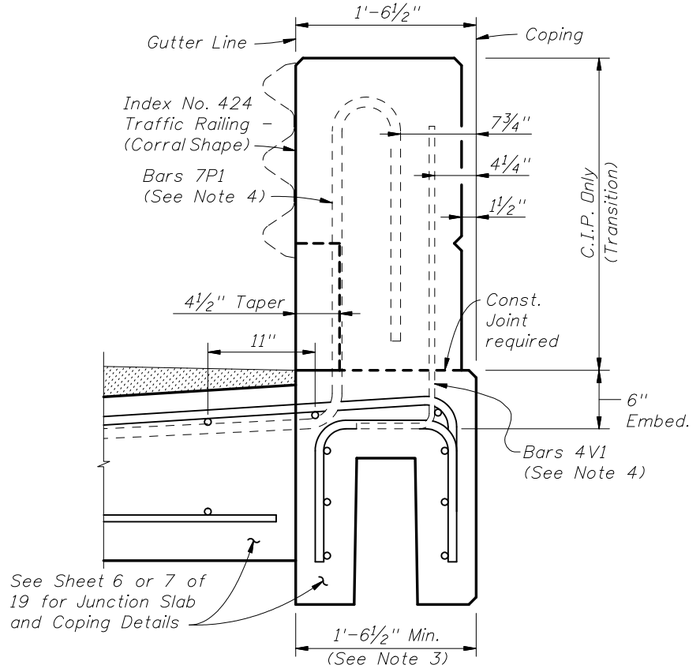
SECTION A-A
(TYPICAL SECTION PRECAST COPING WITHOUT CURB)



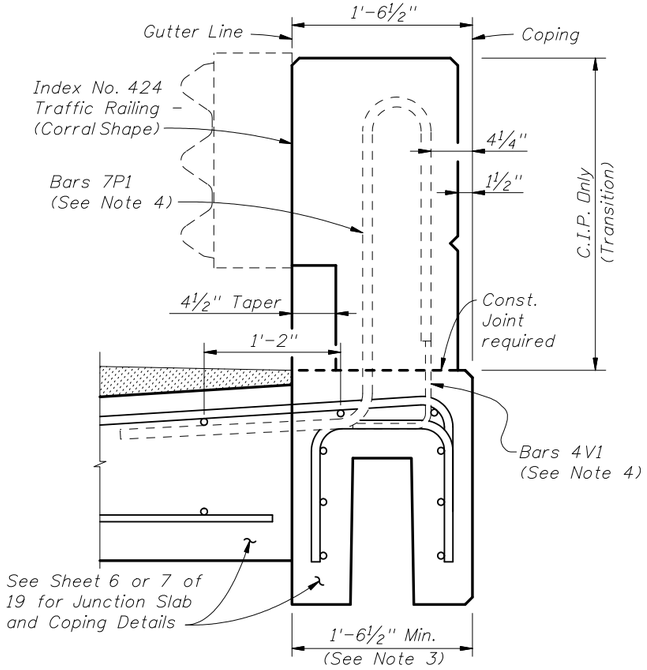
SECTION A-A
(TYPICAL SECTION C.I.P. COPING WITHOUT CURB)



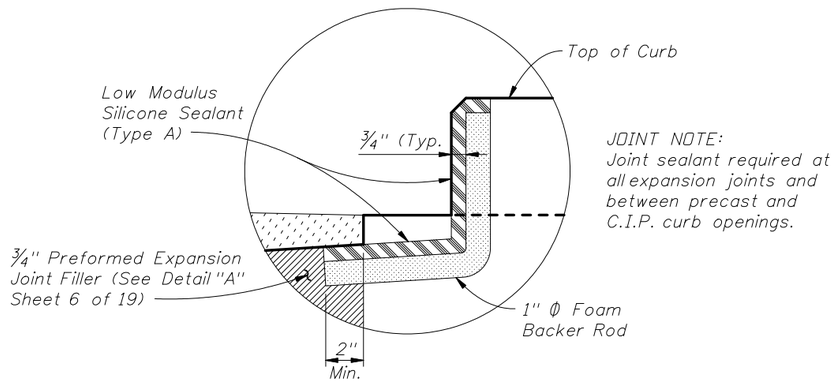
SECTION B-B
(TYPICAL SECTION WITH CURB)
(Precast Coping Shown, C.I.P. Coping Similar)



SECTION C-C
(TYPICAL SECTION TRANSITION COPING)
(Precast Coping shown, C.I.P. Coping similar)



END VIEW D-D
(TYPICAL SECTION COPING TRANSITION)
(Precast Coping shown, C.I.P. Coping similar)



CURB JOINT SEALANT DETAIL

NOTES:
1. See Sheets 6 & 7 of 19 for Junction Slab and Coping details.
2. Slip Forming of C.I.P. Traffic Railiing is not permitted.
3. Actual width varies depending on type of Retaining Wall used.
4. See Index No. 424 for Traffic Railing details and Bars 7P1, 4P5, 4R3, 4S3 & 4V1. Bars 5R2 and 5U are not required in Retaining Wall Coping.

PRECAST OR C.I.P. COPING WITH
JUNCTION SLAB (CORRAL SHAPE TRAFFIC RAILING)

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
01/01/07	SJN	Added New Sheet.			

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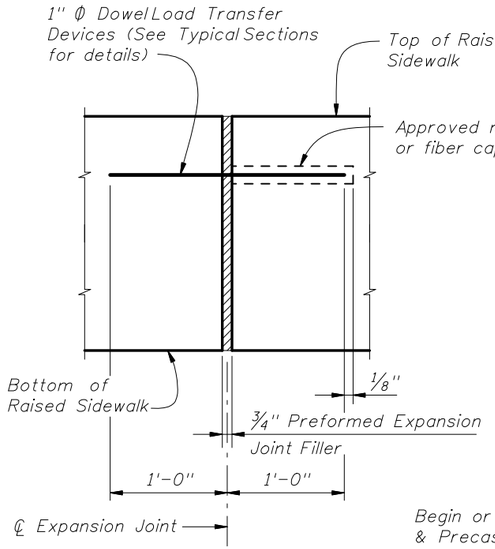
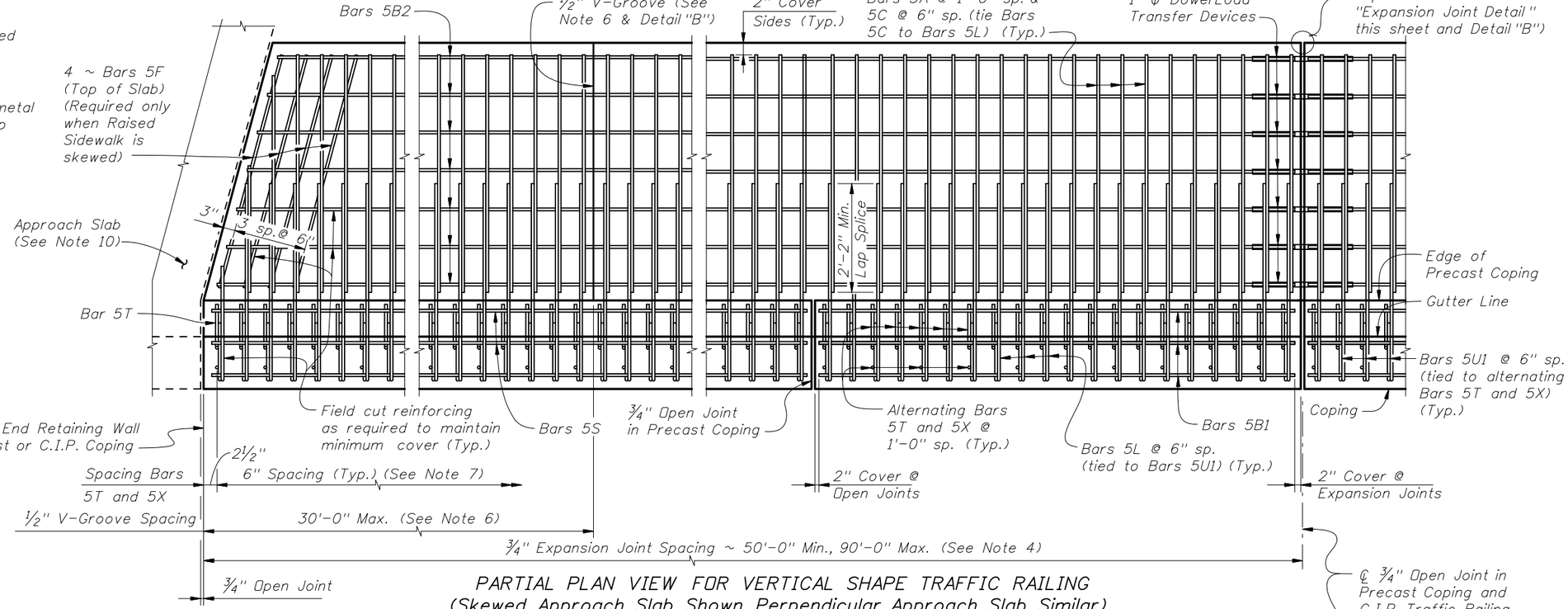


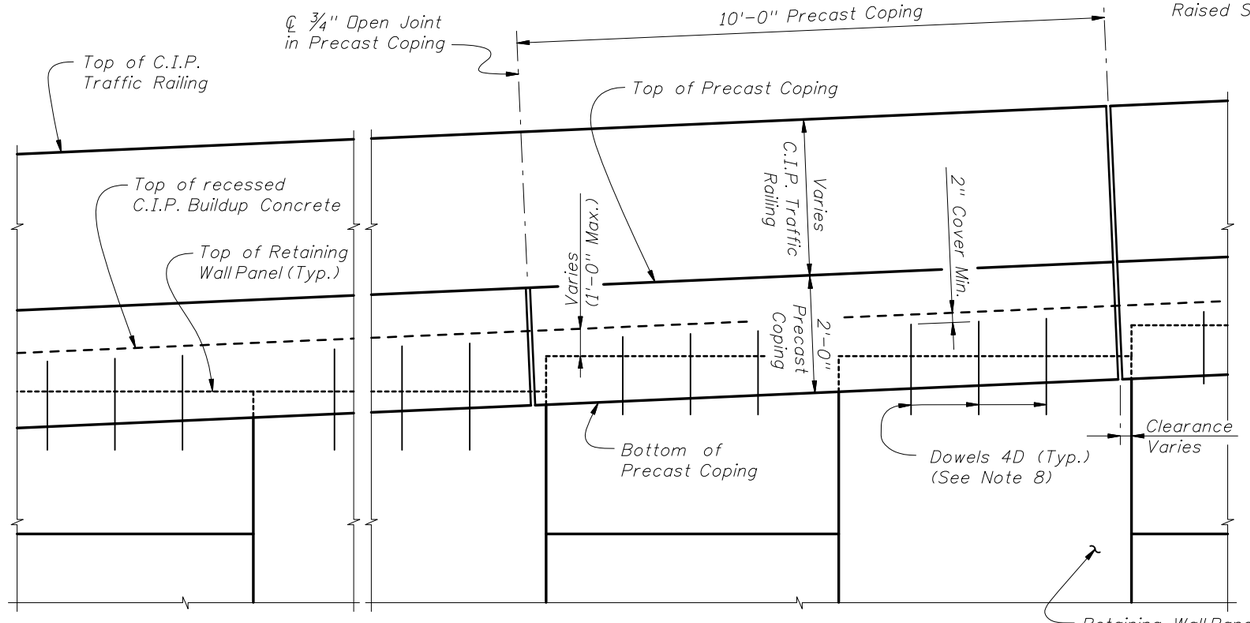
EXPANSION JOINT DETAIL

(Raised Sidewalk expansion joints are to coincide with 3/4" open joints in Traffic Railing)



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)

RAISED SIDEWALK NOTES:

1. CONSTRUCTION REQUIREMENTS: Construct the raised sidewalk level transversely and expansion joints plumb; do not construct the raised sidewalk or C.I.P. coping perpendicular to the roadway surface. Slip forming is not permitted.
2. APPLICATIONS: This raised sidewalk is only applicable for a TL-4 crash test rating. Precast Traffic Railings are not allowed.
3. REINFORCING STEEL: Dowel Load Transfer Devices will be ASTM A 36 smooth round bar and hot-dip galvanized in accordance with Specification Section 962. Install Dowel Load Transfer Devices in accordance with Specification Section 350.
4. Construct 3/4" Expansion Joints in raised sidewalk and C.I.P. copings plumb and perpendicular or radial to the Gutter Line. Provide at 90'-0" maximum intervals as shown.
5. Provide and install Preformed Expansion Joint Filler in accordance with Specification Section 932.
6. Construct 1/2" V-Grooves in raised sidewalk and C.I.P. coping plumb and provide at 30'-0" maximum intervals as shown. Space V-Grooves equally between 3/4" Expansion Joints and/or Begin or End Raised Sidewalk. V-Groove locations are to coincide with V-Groove locations in the Traffic Railing.
7. Spacing shown is along the Gutter Line.
8. For Precast Coping only, Dowel Bars 4D are to extend 1'-0" above the top of retaining wall panel. 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.
9. Work this Index with the following:
   Index No. 422 - Traffic Railing - (42" Vertical Shape)
   Index No. 423 - Traffic Railing - (32" Vertical Shape)
10. 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 12 of 19.

PRECAST OR C.I.P. COPING WITH C.I.P. RAISED SIDEWALK DETAILS

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
01/01/06	SJN	Changed "Leveling" to "Buildup" in PARTIAL ELEVATION VIEW and Note 8; and Sheet No. to 8 of 16.			
01/01/07	SJN	Changed Note 2, Expansion Joint annotation in PLAN VIEW, Bars "5A" to "5A @ 1'-0" sp." and Sheet No. to 11 of 19.			

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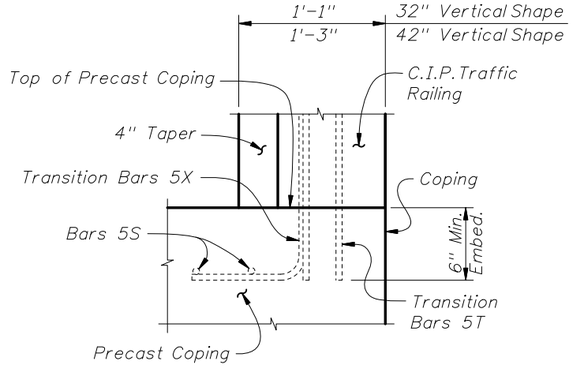
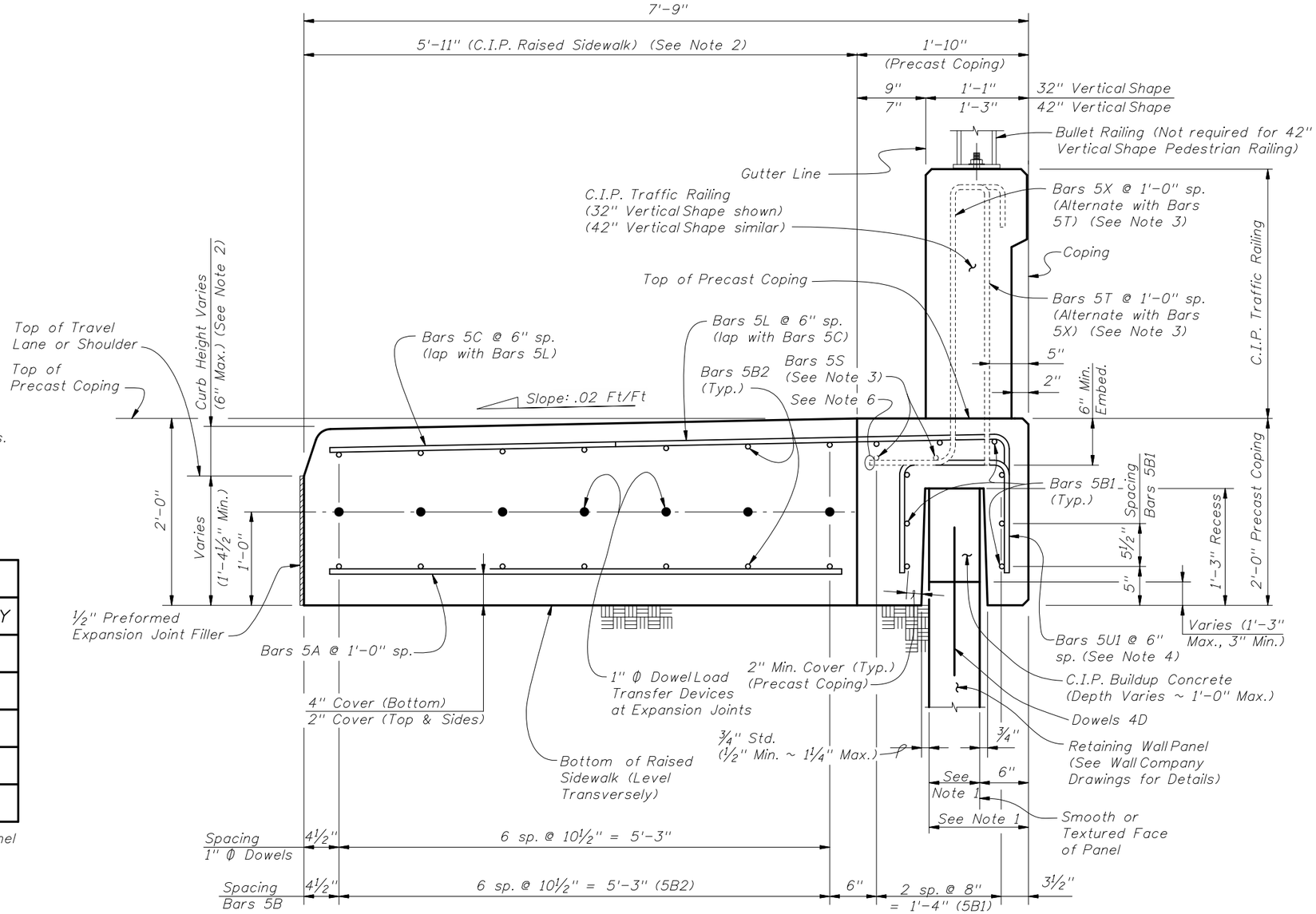


PARTIAL END VIEW OF TRAFFIC RAILING END TRANSITION FOR GUARDRAIL ATTACHMENT (Showing Bars 5S, Bars 5T and Bars 5X) (Precast Coping Shown, C.I.P. Coping Similar)

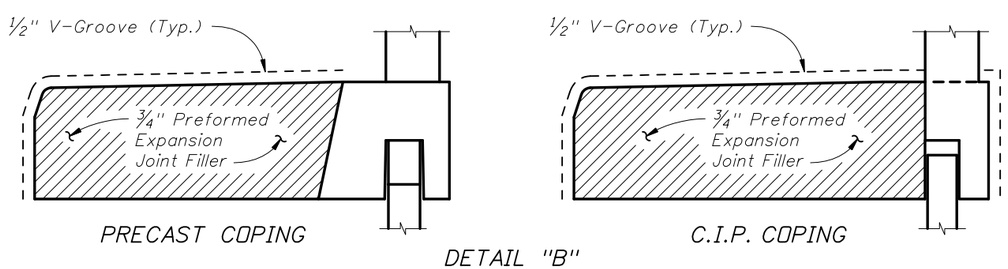
NOTE: See Index No. 422 and Index No. 423, Railing End Detail for details.

ESTIMATED QUANTITIES FOR PRECAST COPING		
ITEM	UNIT	QUANTITY
Concrete (Precast Coping)	CY	1.136
Concrete (C.I.P. Raised Sidewalk)	CY/Ft.	0.424
Reinforcing Steel (Precast Coping) excluding Bars 5T, 5X and 5S (Typ.)	Lb.	269.96
Reinforcing Steel (C.I.P. Raised Sidewalk) (Typ.)	Lb./Ft.	31.73
Additional Reinf. @ Expansion Joints	Lb.	37.38

(The above concrete quantities are based on a 5" wide retaining wall panel and a Type D Concrete Curb (See Note 2). The above Precast Coping quantities are based on one 10'-0" Precast Coping segment.)



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



DETAIL "B"

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

RAISED SIDEWALK 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. Increase the width (1'-2½") of Bars 5U1 as required to maintain 2" minimum cover when recess width exceeds 8".
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. Trim end of Bars 5T and 5X to clear construction joint for 42" Vertical Shape Traffic Railing.

PRECAST OR C.I.P. COPING WITH C.I.P. RAISED SIDEWALK DETAILS (VERTICAL SHAPE TRAFFIC RAILINGS)

REVISIONS

DATE	BY	DESCRIPTION
01/01/06	SJN	Added variable offset to back of panel and "Smooth or Textured Face of Panel" call out in TYPICAL SECTION. Changed "Leveling" to "Buildup" in TYPICAL SECTION and Sheet No. to 9 of 16.
01/01/07	SJN	Added 42" Vertical Shape Traffic Railing and Note 6; Changed Note 2 & 3, Bars "5A @ 6" sp." to "5A @ 1'-0" sp.", ESTIMATED QUANTITIES, and Sheet No. to 12 of 19.

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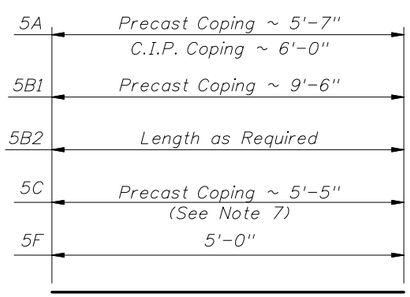
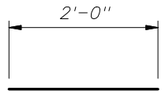
REINFORCING STEEL BENDING DIAGRAMS - RAISED SIDEWALK

BILL OF REINFORCING STEEL

MARK	SIZE	LENGTH	
		PRECAST COPING	C.I.P. COPING
A	5	5'-7"	6'-0"
B1	5	9'-6"	N/A
B2	5	AS REQD.	AS REQD.
C	5	5'-5"	N/A
D	4	2'-0"	N/A
F	5	5'-0"	5'-0"
L	5	5'-0"	8'-1"
U1	5	3'-8"	3'-8"
1" Ø Dowel	Smooth Steel Bar	2'-0"	2'-0"

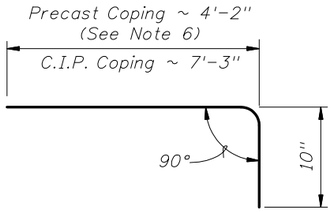


BARS 5A, 5B1, 5B2, 5C & 5F

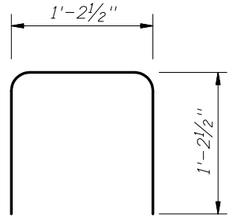


1" Ø DOWEL

DOWEL BAR 4D



BAR 5L



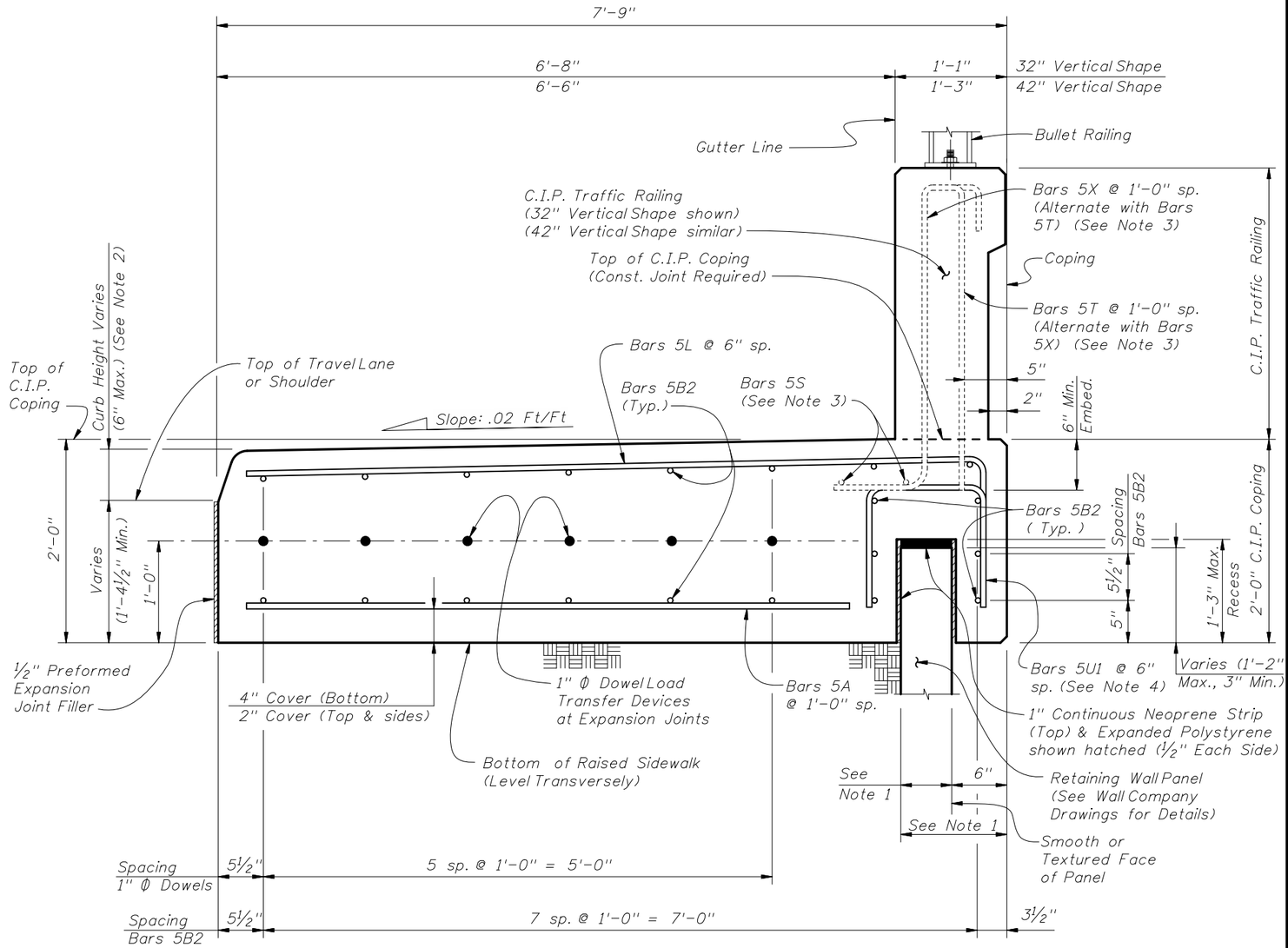
BAR 5U1

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'-2".
4. Lap splice Bars 5L with Bars 5C. Lap splices will be a minimum of 2'-2".
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".
8. The Contractor may use Welded Wire Reinforcement when approved by the Engineer. Welded Wire Reinforcement will conform to ASTM A 497.

ESTIMATED QUANTITIES FOR C.I.P. COPING

ITEM	UNIT	QUANTITY
Concrete	CY/Ft.	0.538
Reinforcing Steel (Typical) excluding Bars 5T, 5X and 5S (Typ.)	Lb./Ft.	51.63
Additional Reinf. @ Expansion Joints	Lb.	32.04

The above concrete quantities are based on a 5" wide retaining wall panel and a Type D Concrete Curb (See Note 2).



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

RAISED SIDEWALK 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. 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.
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. Increase the width (1'-2½") of Bars 5U1 as required to maintain 2" minimum cover when recess width exceeds 8".

PRECAST OR C.I.P. COPING WITH C.I.P. RAISED SIDEWALK DETAILS (VERTICAL SHAPE TRAFFIC RAILINGS)

REVISIONS

DATE	BY	DESCRIPTION
01/01/06	SJN	Added "Smooth or Textured Face of Panel" call out to TYPICAL SECTION. Changed offset to face of panel in TYPICAL SECTION, Sheet No. to 10 of 16.
01/01/07	SJN	Added 42" Vertical Shape Traffic Railing; Changed RAISED SIDEWALK NOTES 2 & 3, REINFORCING STEEL NOTES 5 & 6, Bars "5A @ 6" sp." to "5A @ 1'-0" sp.", ESTIMATED QUANTITIES, and Sheet No. to 13 of 19.

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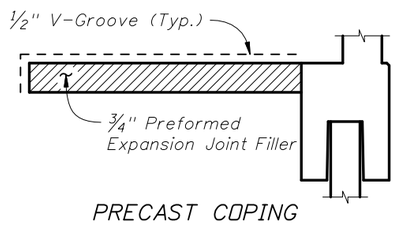
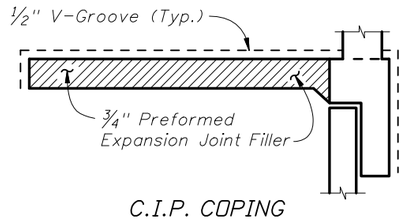
Sheet No. 13 of 19

Index No. 5300



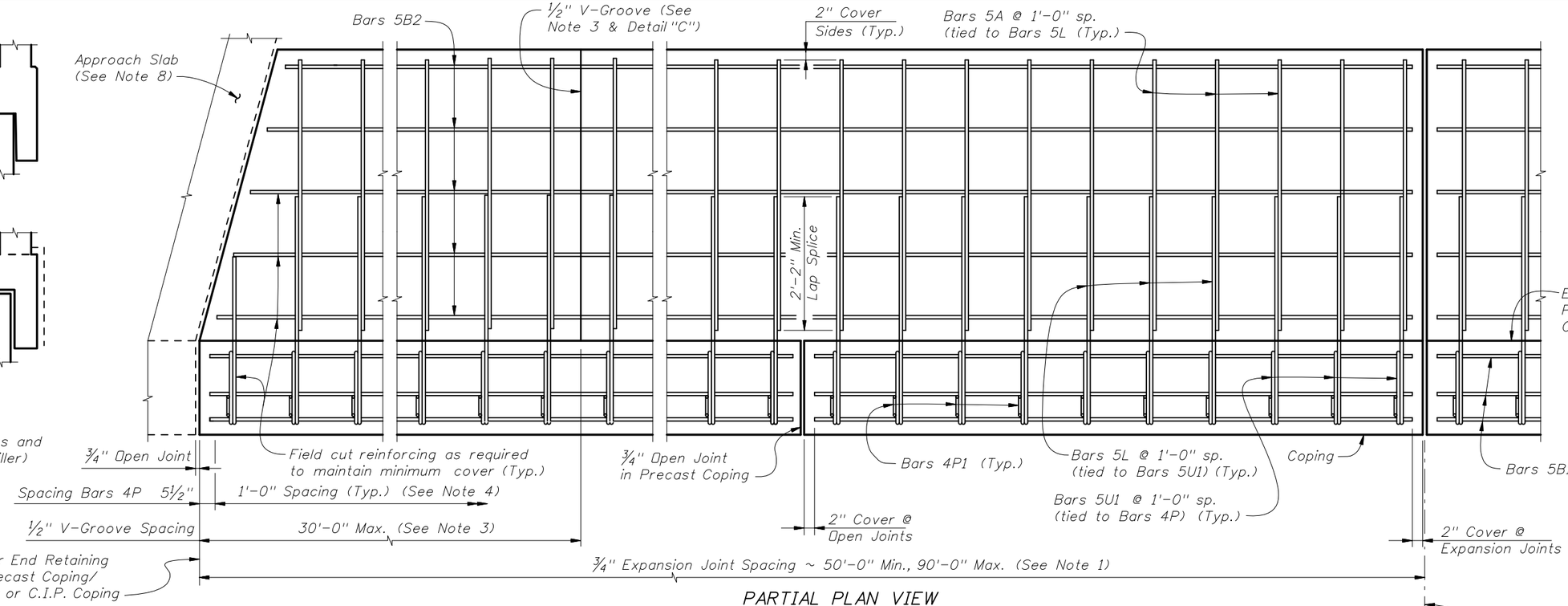
PRECAST COPING



C.I.P. COPING

DETAIL "C"

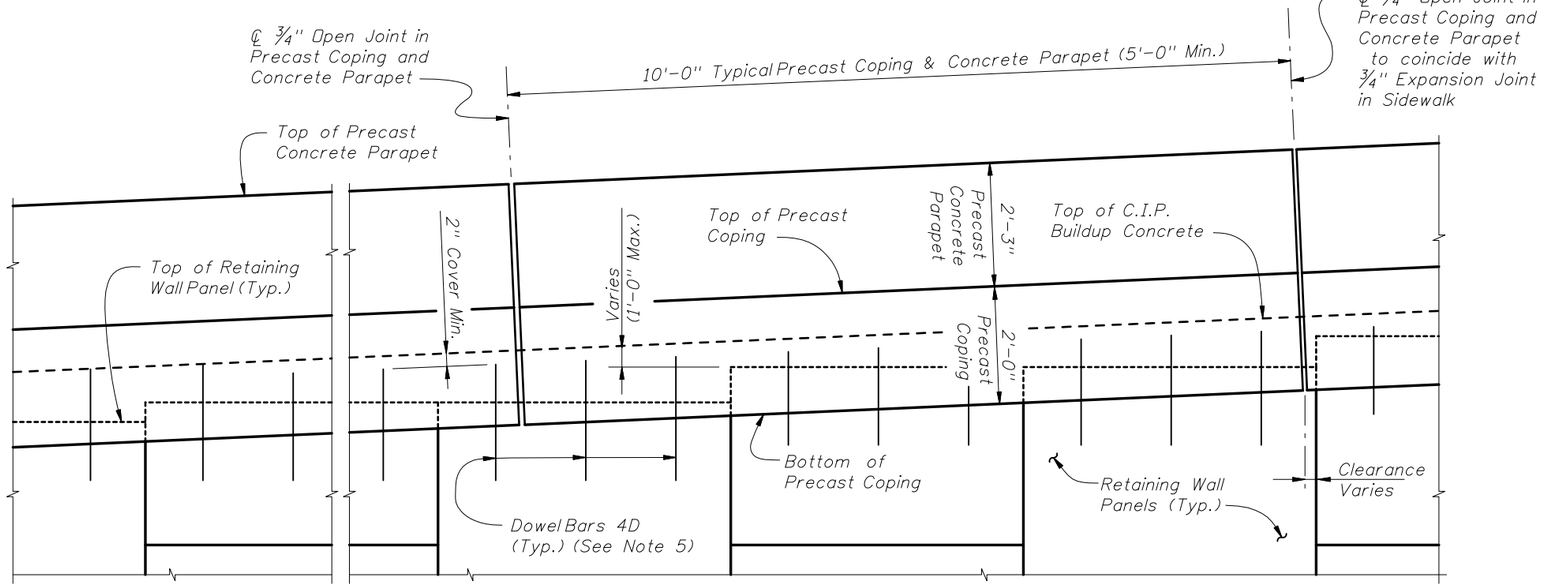
(Showing Locations of ½" V-Grooves and ¾" Preformed Expansion Joint Filler)



PARTIAL PLAN VIEW

(Skewed Approach Slab Shown, Perpendicular Approach Slab Similar)

(Precast Coping Shown, C.I.P. Coping Similar) (Concrete Parapet not Shown for Clarity)



PARTIAL ELEVATION VIEW

(Precast Coping and Sidewalk Reinforcing not Shown for Clarity)

(Precast Coping Shown, C.I.P. Coping Similar)

PRECAST COPING/PARAPET AND SIDEWALK NOTES:

1. Construct ¾" Expansion Joints in sidewalk and C.I.P. coping plumb and perpendicular or radial to the Gutter Line. Provide at 90'-0" maximum intervals as shown.
2. Provide and install Preformed Expansion Joint Filler in accordance with Specification Section 932.
3. Construct ½" V-Grooves in sidewalk and C.I.P. coping plumb and provide at 30'-0" maximum intervals as shown. Space V-Grooves equally between ¾" Expansion Joints and/or Begin or End Sidewalk. For C.I.P. Coping only, V-Groove locations are to coincide with V-Groove locations in the Concrete Parapet.
4. Spacing shown is along the Gutter Line.
5. For Precast Coping only, Dowel Bars 4D are to extend 1'-0" above the top of retaining wall panel. 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.
6. Work this Index with the following:
   Index No. 410 - Concrete Barrier Wall
7. For C.I.P. Coping only, work this Index with the following:
   Index No. 820 - Pedestrian/Bicycle Railing.
8. 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)

PRECAST COPING/PARAPET OR C.I.P. COPING WITH C.I.P. SIDEWALK DETAILS

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
01/01/06	SJN	Changed "Leveling" to "Buildup" in PARTIAL ELEVATION VIEW and Note 5, and Sheet No. to 11 of 16.	01/01/07	SJN	Deleted CROSS REFERENCE note; Added Bar 5B1 to top of Precast Coping in PARTIAL PLAN VIEW; Changed Sheet No. to 14 of 19.

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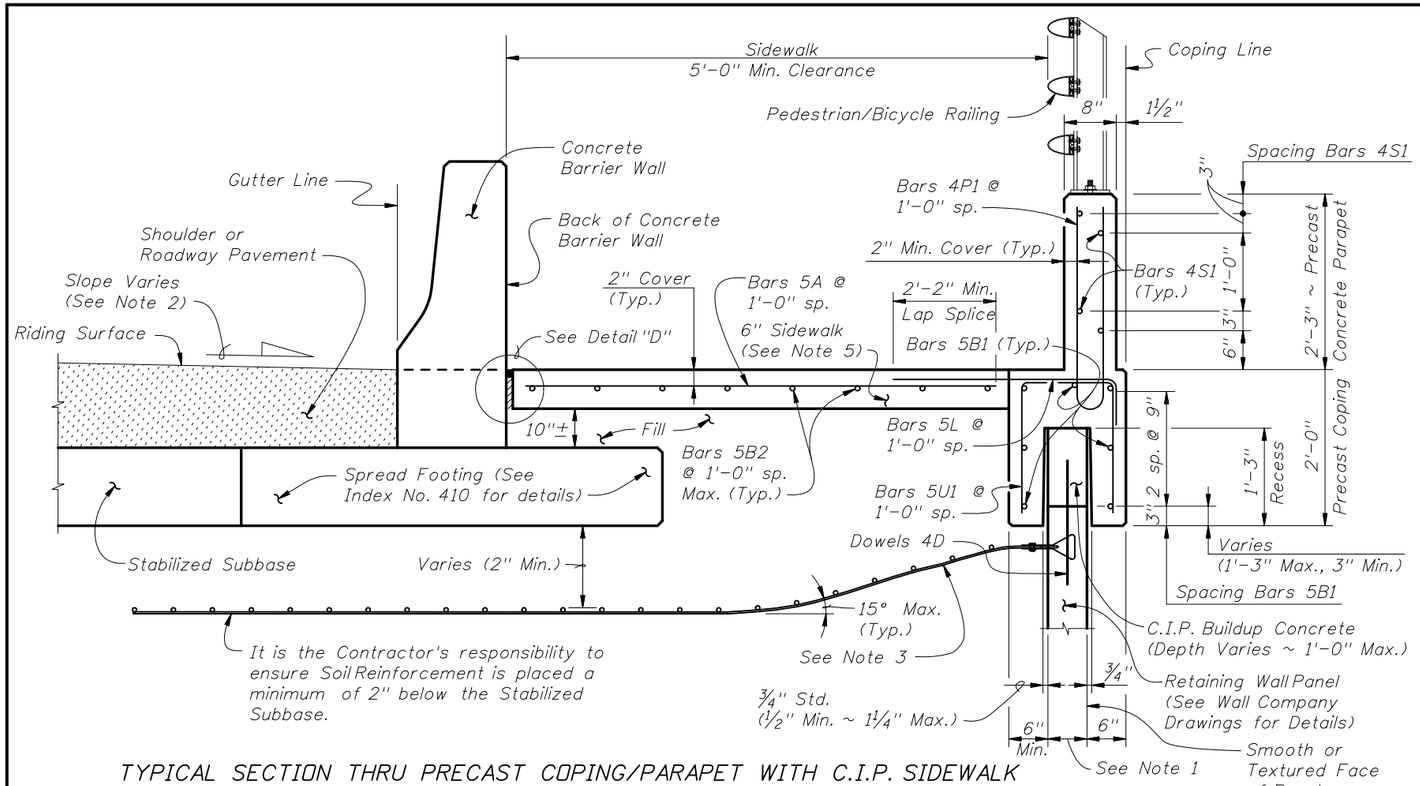
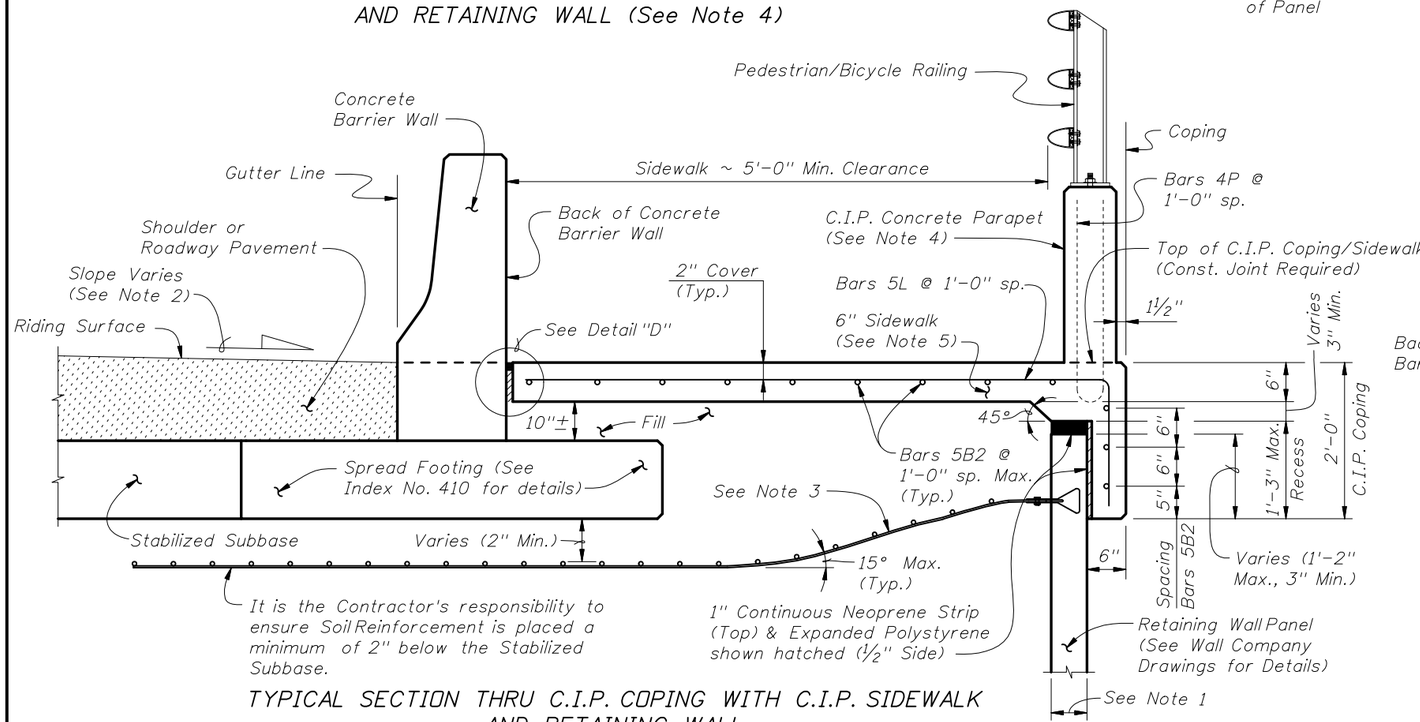


TYPICAL SECTION THRU PRECAST COPING/PARAPET WITH C.I.P. SIDEWALK AND RETAINING WALL (See Note 4)

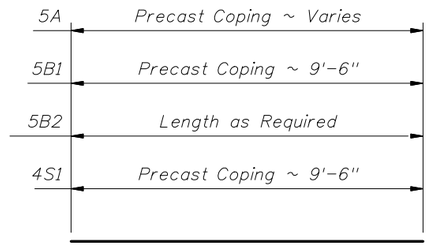


TYPICAL SECTION THRU C.I.P. COPING WITH C.I.P. SIDEWALK AND RETAINING WALL

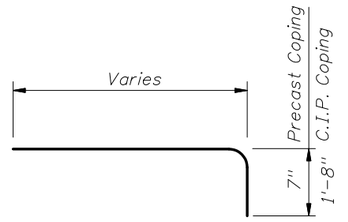
REINFORCING STEEL BENDING DIAGRAMS - COPING/PARAPET AND SIDEWALK

BILL OF REINFORCING STEEL

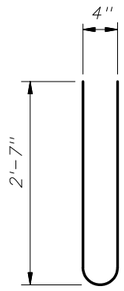
MARK	SIZE	LENGTH	
		PRECAST COPING	C.I.P. COPING
A	5	VARIES	N/A
B1	5	9'-6"	N/A
B2	5	AS REQD.	AS REQD.
D	4	2'-0"	N/A
L	5	VARIES	VARIES
P1	4	5'-5"	N/A
S1	4	9'-6"	N/A
U1	6	VARIES	N/A



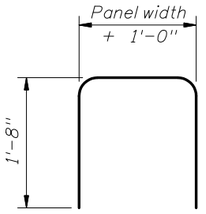
BARS 5A, 5B1, 5B2 & 4S1



BAR 5L

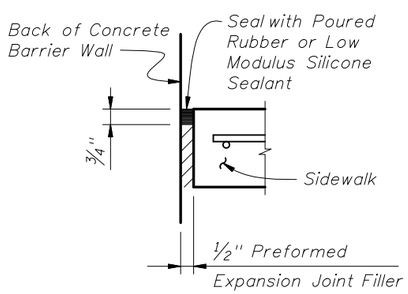


BAR 4P1



BAR 5U1

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 5B2 will be a minimum of 2'-2".
4. For Precast Coping only, lap splice Bars 5L with Bars 5A. Lap splices will be a minimum of 2'-2".
5. For C.I.P. only, see Index No. 820 for Bars 4P and 4S.
6. The Contractor may use Welded Wire Reinforcement when approved by the Engineer. Welded Wire Reinforcement will conform to ASTM A 497.



DETAIL "D"

PRECAST COPING/PARAPET AND SIDEWALK NOTES:
1. Actual width varies depending on type of Retaining Wall used.
2. Match Cross Slope of Travel Lane or Shoulder.
3. Gradually deflect/displace Soil Reinforcement downward as required. Soil Reinforcement is shown deflected downward for illustrative purposes only and is not to scale. See Wall Company Drawings for details.
4. C.I.P. Concrete Parapet shown, Vertical Shape Traffic Railing similar. Complete details and dimensions of Vertical Traffic Railings are required in the Shop Drawings.
5. Match cross slope of connecting sidewalk or as shown in the Wall Control Drawings.

PRECAST COPING/PARAPET OR C.I.P. COPING WITH C.I.P. SIDEWALK DETAILS

REVISIONS

DATE	BY	DESCRIPTION
01/01/06	SJN	Added variable offset to back of panel & "Smooth or Textured Face of Panel" call out to TYPICAL SECTION THRU PRECAST.... Changed "Leveling" to "Buildup" in TYPICAL SECTION THRU PRECAST...., Offset to face of panel in
01/01/07	SJN	TYPICAL SECTION THRU C.I.P. ... & Sheet No. to 12 of 16. Changed "Welded Wire Fabric" to Welded Wire Reinforcement", Detail "A" to Detail "D", position of center Bar 5B1 in top of Precast Coping, and Sheet No. to 15 of 19.

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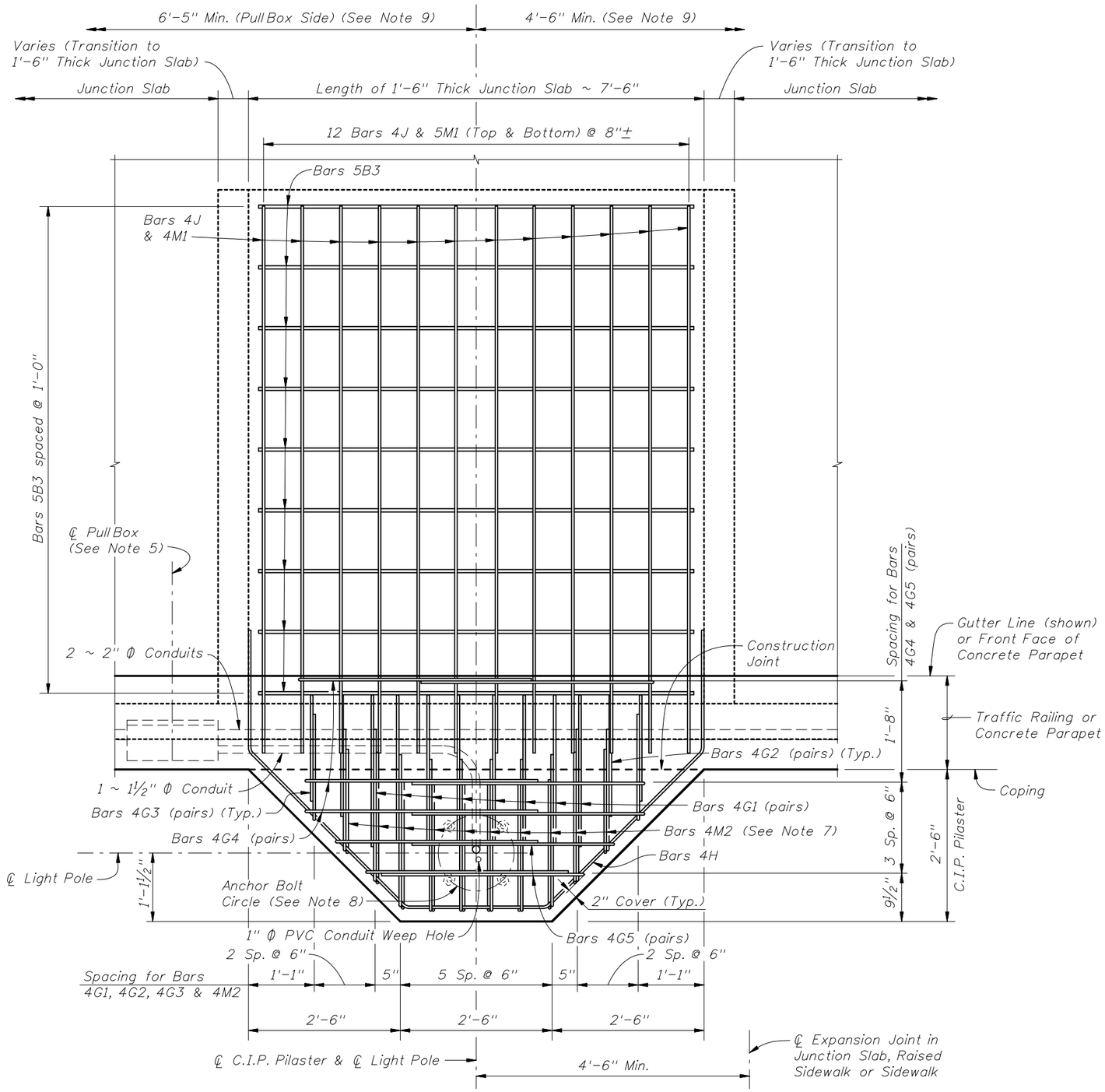
Sheet No. 15 of 19

Index No. 5300



PLAN VIEW
(Junction Slab reinforcing not shown for clarity)
(Junction Slab Shown, Raised Sidewalk or Sidewalk Similar)

LIGHT PILASTER NOTES:

1. The pilaster and junction slab are designed to resist the following working loads from the light pole applied at the top of the Pilaster:

Axial Deadload	=	1.560 kip
Windload Moment about Transverse Axis (*)	=	40.60 kip-ft
Windload Moment about Longitudinal Axis (*)	=	28.30 kip-ft
Deadload Moment about Longitudinal Axis (*)	=	1.690 kip-ft
Maximum Shear	=	1.380 kip
Torsion about Pole Axis	=	3.560 kip-ft

   (*) - Axis refers to Bridge Axis.
2. Provide grout in accordance with Specification Section 934.
3. It is the Contractor's responsibility to provide anchor bolts, nuts, washers and anchor plates that effectively transmit the light pole loads to the pilaster and fit the reinforcing cage. Submit calculations for anchor bolt design and embedment depth, signed and sealed by a Professional Engineer registered in the State of Florida to the Engineer for review and approval prior to construction.
4. Install Anchor Bolts plumb.
5. For conduit, pull box and expansion/deflection fitting details, see Utility Conduit Detail Drawings.
6. The cost of anchor bolts, nuts, washers and anchor plates will be included in the Bid Price for Light Poles. Include the cost of all labor, concrete and reinforcing steel required for construction of the pilasters, grout pads, pull boxes and miscellaneous hardware required for the completion of the electrical system in the Bid Price for either the Traffic Railing or Concrete Parapet that the pilaster is behind.
7. Field Cut Bars 4M2 as required to maintain clearance.
8. Anchor Bolt pattern orientation will be as shown.
9. Slip Forming Method of construction is not allowed within the limits shown.
10. Reinforcing shown for light pole pilasters is in addition to typical reinforcing for C.I.P. Junction Slabs and Raised Sidewalks (Bars 5A and 5B2). Omit Junction Slab Bars 6U1 and Raised Sidewalk Bars 5U1 within light pole pilaster limits.
11. Work this Sheet with the following as appropriate:
    Sheet Nos. 5 thru 10 of 19 - Precast or C.I.P. Coping with C.I.P. Junction Slab Details
    Sheet Nos. 11, 12 and 13 of 19 - Precast or C.I.P. Coping with C.I.P. Raised Sidewalk Details
    Sheet Nos. 14 and 15 of 19 - Precast Coping/Parapet or C.I.P. Coping with C.I.P. Sidewalk Details

CROSS REFERENCE: For Estimated Quantities, see Sheet No. 18 of 19.

C.I.P. LIGHT POLE PILASTER DETAILS

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
01/01/06	SJN	Changed Sheet No. to 13 of 16 & sheet references in Note 11.			
01/01/07	SJN	Deleted "(Bars 6A & 5B2)" from Note 10; Changed Sheet No. to 16 of 19, Bars 5M1 to Bars 4M1, and Sheet No. references in Note 11.			

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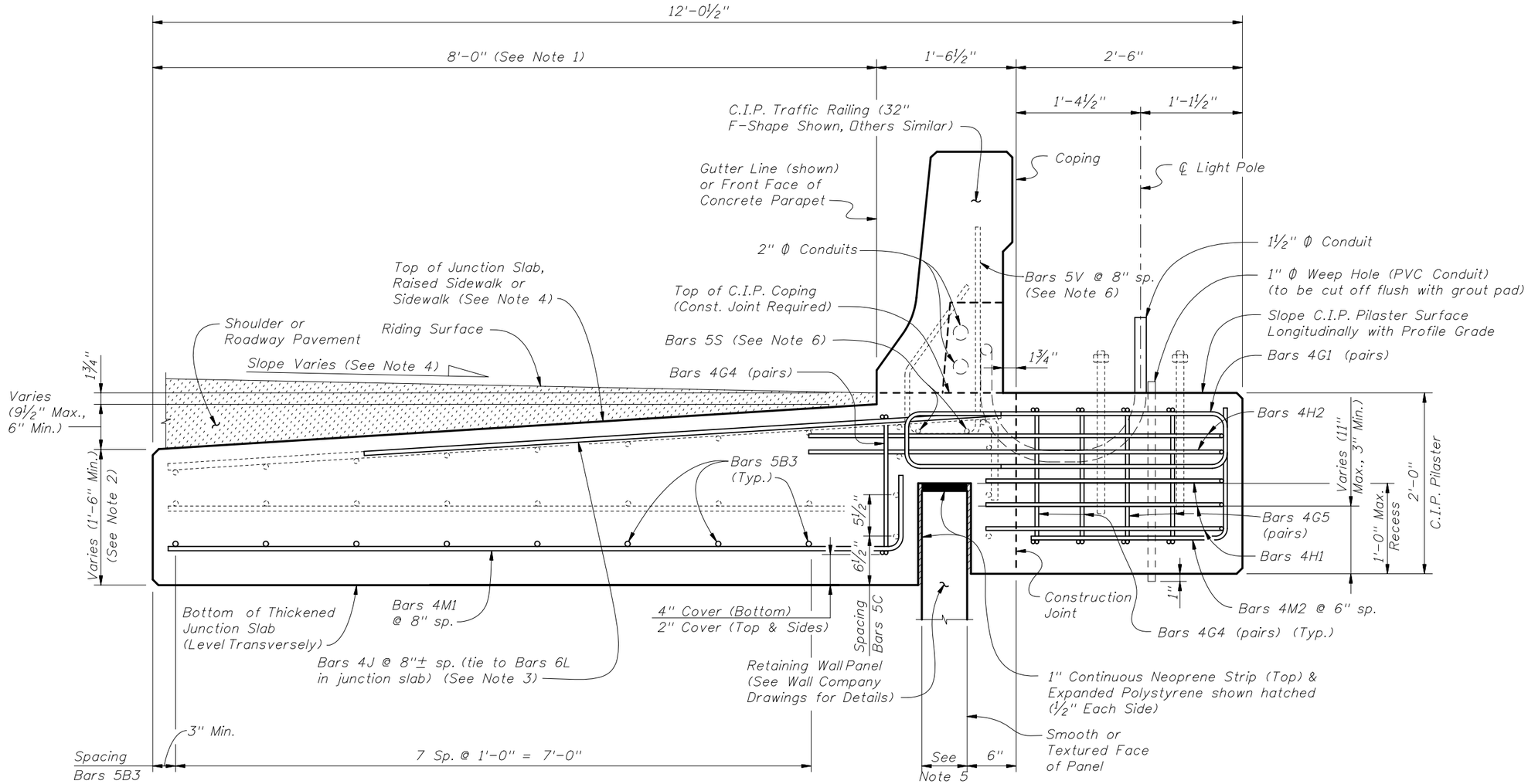


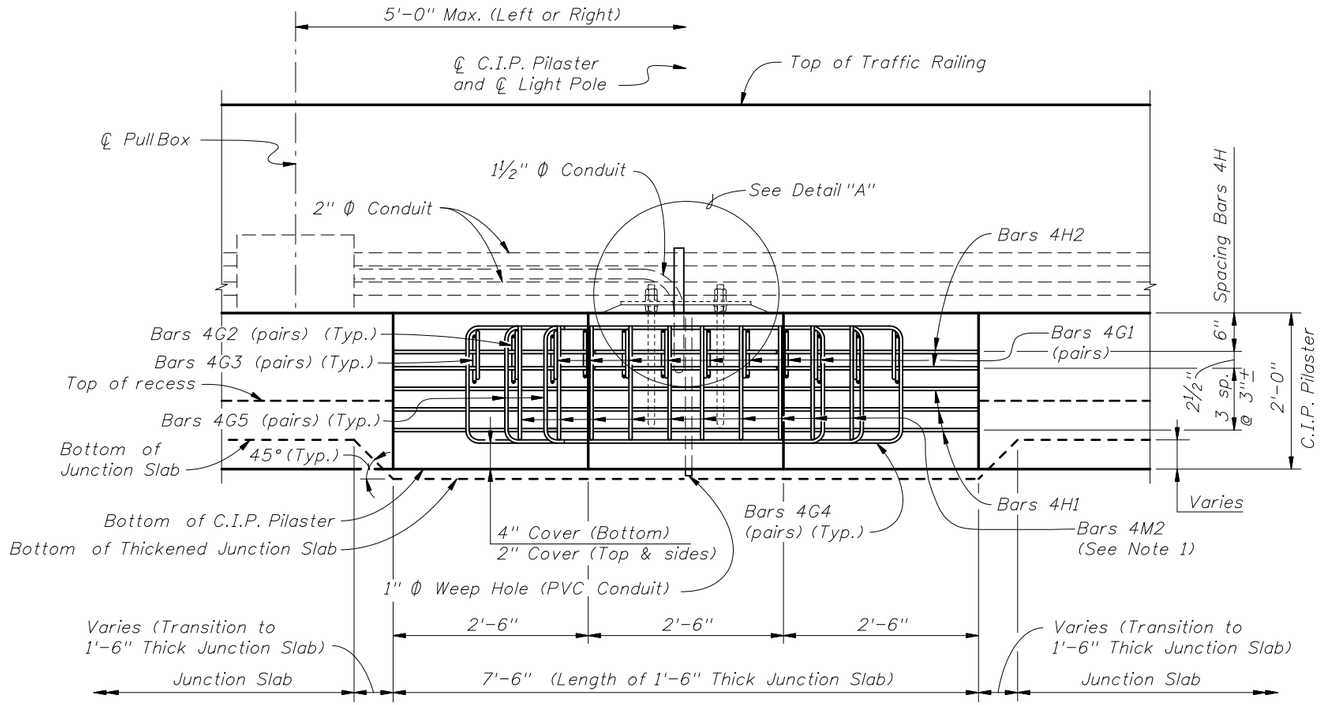
TYPICAL SECTION AT LIGHT POLE PILASTER
(Traffic Railing Shown, Concrete Parapet Similar)
(Junction Slab Shown, Raised Sidewalk or Sidewalk Similar)

NOTES:

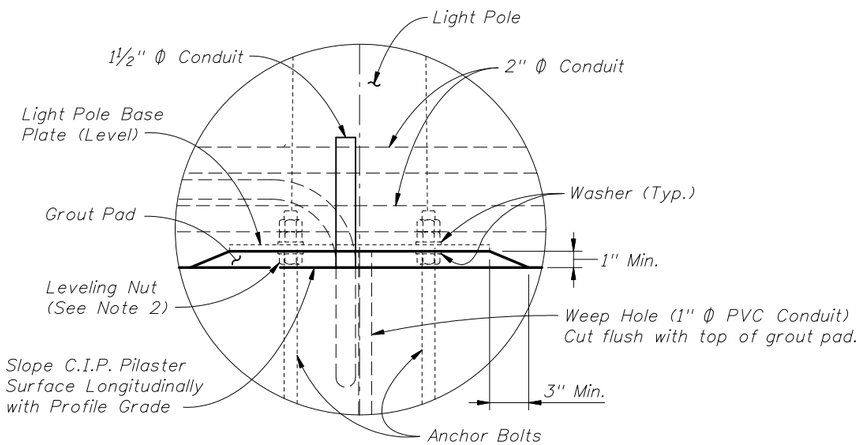
1. The 8'-0" dimension shown is for Junction Slabs. This dimension must be a minimum of 5'-0" for all applications.
2. For junction slabs, increase the 1'-0" depth dimension to 1'-6". For raised sidewalks, increase the 2'-0" depth dimension to 2'-6". For sidewalks, increase 6" depth dimension to 1'-6". The minimum length of the Junction Slabs, Raised sidewalks and Sidewalks is 50'-0", measured along the Gutter Line.
3. Bars 4J are only required when pilasters are behind a Traffic Railing.
4. Match the slope of the adjoining junction slab and shoulder or roadway pavement, raised sidewalk or sidewalk.
5. Actual width varies depending on type of Retaining Wall used.
6. See Index No. 420 for Bars 5V and 5S.

C.I.P. LIGHT POLE PILASTER DETAILS

REVISIONS						2006 Interim Design Standard	Interim Date	Sheet No.
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION			
01/01/06	SJN	Added "Smooth or Textured Face of Panel" call out in TYPICAL SECTION. Changed Sheet No. to 14 of 16.				PERMANENT RETAINING WALL SYSTEMS	01/01/07	17 of 19
01/01/07	SJN	Changed Bars 5S1 to Bars 5S, Bars 5L to Bars 6L, Bars 5M1 to Bars 4M1, and Sheet No. to 17 of 19.					Index No.	5300



ELEVATION VIEW
(Junction Slab Reinforcing & Bars 4J not Shown for Clarity)
(Traffic Railing Shown, Concrete Parapet Similar)
(Junction Slab Shown, Raised Sidewalk or Sidewalk Similar)



DETAIL "A"

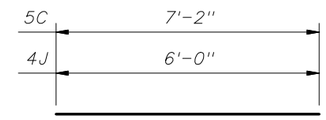
NOTES:
1. Field Cut Bars 4M2 as required to maintain minimum cover.
2. Maximum clearance between leveling nut and top of pilaster will not exceed anchor bolt diameter.

ESTIMATED QUANTITIES		
ITEM	UNIT	QUANTITY
Concrete (Pilaster)	CY	0.926
Concrete (Thickened Junction Slab)	CY	1.180
Reinforcing Steel	Lb.	431.65

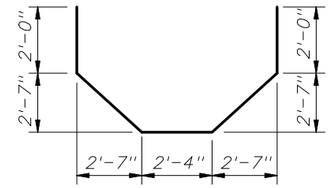
(The quantities above are for one C.I.P. Light Pole Pilaster. The concrete quantity for the thickened junction slab is based on a 6" increase in thickness and a 5" wide retaining wall panel. Adjust thickened concrete quantity as required for raised sidewalks and sidewalks.)

REINFORCING STEEL BENDING DIAGRAMS - LIGHT PILASTER

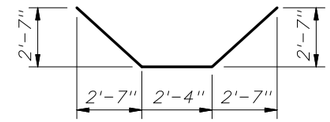
BILL OF REINFORCING STEEL			
MARK	SIZE	NO. REQD.	LENGTH
B3	5	8	7'-2"
G1	4	16	5'-8"
G2	4	4	4'-8"
G3	4	4	4'-2"
G4	4	6	9'-2"
G5	4	4	8'-2"
H1	4	3	9'-8"
H2	4	2	13'-8"
J	4	24	6'-0"
M1	4	12	8'-10"
M2	4	10	3'-8"



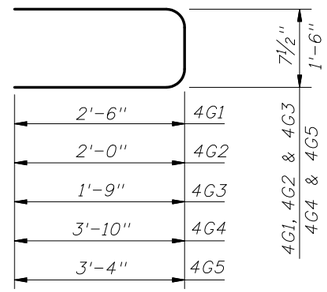
BARS 5B3 & 4J



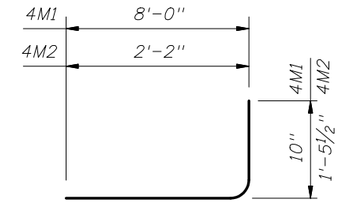
BAR 4H2



BAR 4H1



BARS 4G1, 4G2, 4G3, 4G4 & 4G5



BAR 4M1 & 4M2

REINFORCING STEEL NOTES:
1. All bar dimensions in the bending diagrams are out to out.
2. Lap splices for Bars 4G1, 4G2 & 4G3 will be a minimum of 1'-4". Lap splices for Bars 4G4 & 4G5 will be a minimum of 1'-8".
3. The Contractor may use Welded Wire Reinforcement when approved by the Engineer. Welded Wire Reinforcement will conform to ASTM A 497.

C.I.P. LIGHT POLE PILASTER DETAILS

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
01/01/06	SJN	Changed Sheet No. to 15 of 16.			
01/01/07	SJN	Deleted "at left" from ESTIMATED. QUANTITIES note; Changed "Fabric" to "Reinforcement", Bars 5M1 to Bars 4M1, ESTIMATED QUANTITY for Reinforcing steel, and Sheet No. to 18 of 19.			

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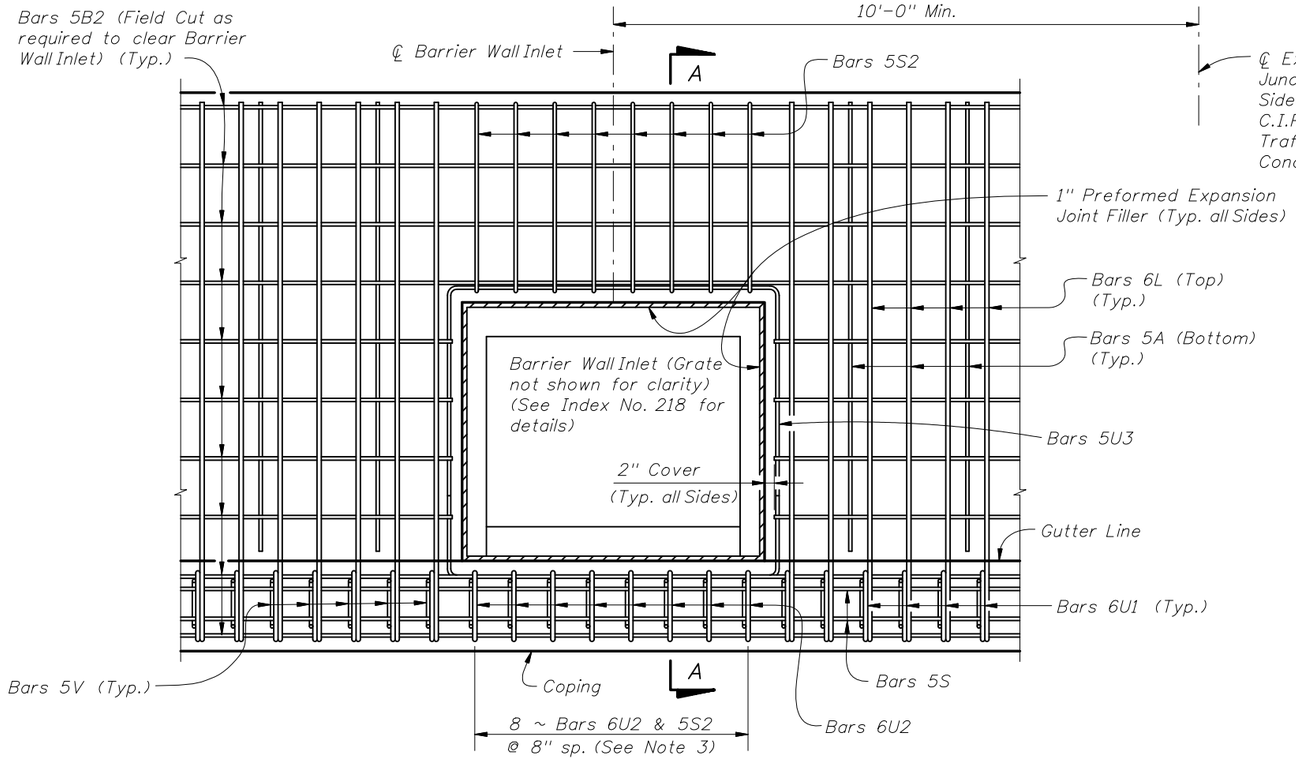
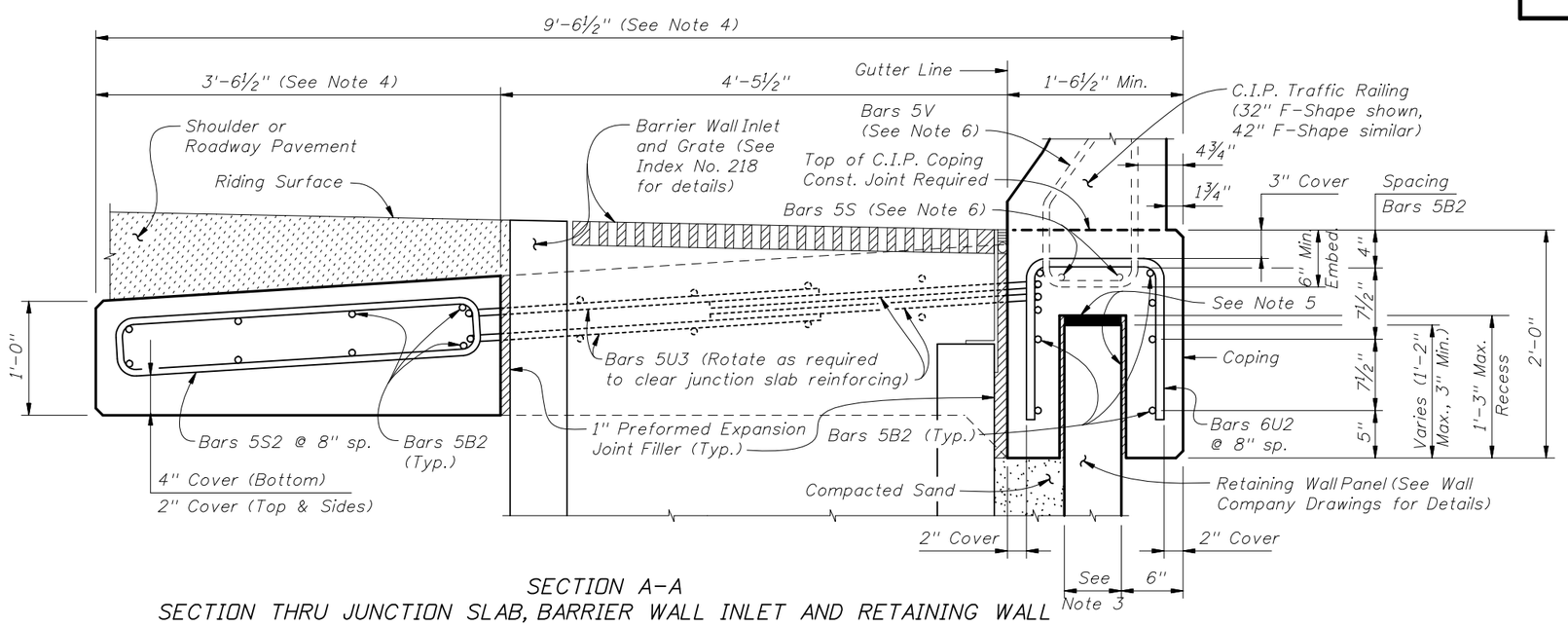
Index No. 5300



PLAN VIEW
(Junction Slab Shown, Raised Sidewalk Similar)

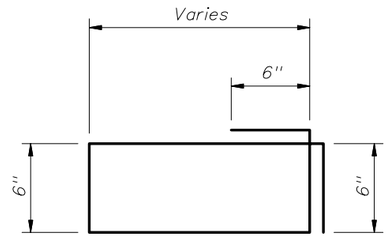


SECTION A-A
SECTION THRU JUNCTION SLAB, BARRIER WALL INLET AND RETAINING WALL
(Junction Slab Shown, Raised Sidewalk Similar)

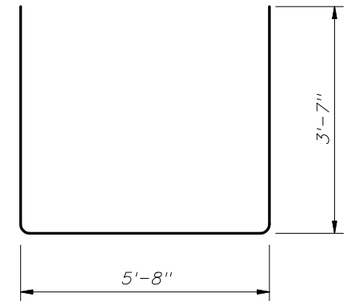
REINFORCING STEEL BENDING DIAGRAMS - DRAINAGE

BILL OF REINFORCING STEEL

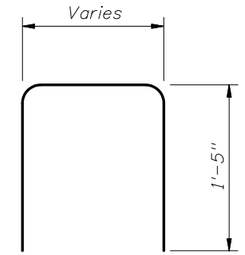
MARK	SIZE	LENGTH
S2	5	VARIES
U2	6	VARIES
U3	5	14'-2"



BAR 5S2



BAR 5U3



BAR 6U2

REINFORCING STEEL NOTES:
1. All bar dimensions in the bending diagrams are out to out.
2. All reinforcing steel at open joints will have a 2" minimum cover.
3. See Sheet Nos. 5 thru 15 of 19 for Bars 5A, 5B2 and 6U1 (or 5U1).
4. The Contractor may use Welded Wire Reinforcement when approved by the Engineer. Welded Wire Reinforcement will conform to ASTM A 497.

NOTES:

1. Spacing shown is along the Gutter Line. Spacing shown is for C.I.P. Junction Slab. For C.I.P. Raised Sidewalks or Sidewalks, match bar spacing and size shown in Typical Sections (i.e., 11 ~ Bars 5U2 and 5S2 @ 6" spacing for Raised Sidewalks).
2. Dimensions shown are for junction slabs. The 3'-6½" dimension must be a minimum of 1'-0" for raised sidewalks.
3. Actual location & width vary depending on type of Retaining Wall used.
4. See Index No. 420 and 425 for Bars 5V and 5S.
5. 1" Continuous Neoprene Strip (Top) & Expanded Polystyrene shown hatched (½" Each Side).
6. Locate ℄ Barrier Wall Inlet a minimum of 10'-0" away from ℄ Expansion Joints in Junctions Slab, Raised Sidewalk or Sidewalk, C.I.P. Coping and Traffic Railing or Concrete Parapet.
7. Work this Sheet with the following as appropriate:
   Sheet Nos. 5 thru 10 of 19 - Precast or C.I.P. Coping with C.I.P. Junction Slab Details
   Sheet Nos. 11, 12 and 13 of 19 - Precast or C.I.P. Coping with C.I.P. Raised Sidewalk Details
   Sheet Nos. 14 and 15 of 19 - Precast Coping/Parapet or C.I.P. Coping with C.I.P. Sidewalk Details

C.I.P DRAINAGE DETAILS

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
01/01/06	SJN	Changed coping offset to face of panel in SECTION A-A, Sheet references in REINFORCING STEEL NOTE 3 and NOTE 7, and Sheet No. to 16 of 16.	01/01/07	SJN	Changed NOTES 4 & 7, REINFORCING STEEL NOTES 3 & 4, Bars 5S1 to Bars 5S, Bars 6A to Bars 5A, Retaining Wall Panel width dimension to "See Note 3", and Sheet No. to 19 of 19.

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

2006 Interim Design Standard

PERMANENT RETAINING WALL SYSTEMS

Interim Date 01/01/07

Sheet No. 19 of 19

Index No. 5300