ORIGINATION FORM

Proposed Revisions to a Standard Plans Index

(Please provide all information – Incomplete forms will be returned)

Contact Information:

Date: August 1, 2018
Originator: Richard Stepp
Phone: (850) 414-4313
Email: richard.stepp@dot.state.fl.us

Standard Plans:

Index Number: 521-010
Sheet Number (s): New Sheets 1,2
Index Title: Opaque Visual Barrier

Summary of the changes:

New Sheet 1: Provide designs for all variations of Single-Slope and existing F-Shape barriers; tighten spacing of vertical and horizontal reinforcing steel, create a minimum transverse joint spacing to ensure sufficient dowel connection to barrier; create leave-out concept for measurement; add accommodation for welded wire reinforcing and variable barrier heights

New Sheet 2: Add detail for discontinuation at 56" height barrier sections; Add detail for continuing over 44" height barrier sections

Commentary / Background:

Redeveloped entire Standard for improved functionality and clarity of details.

Added new FDM verbiage and created all new SPI for guidance on usage.

Added new coordination of Standard with Specification Section 521 and corresponding new Pay Item.

Other Affected Offices / Documents: (Provide name of responsible personnel)

Yes	No	
☐	☑	Other Standard Plans –
☑	☐	FDOT Design Manual – Mary Jane Hayden
☑	☐	Basis of Estimates Manual – Melissa Hollis
☑	☐	Standard Specifications – Dan Hurtado
☐	☑	Approved Product List –
☐	☑	Construction –
☐	☑	Maintenance –

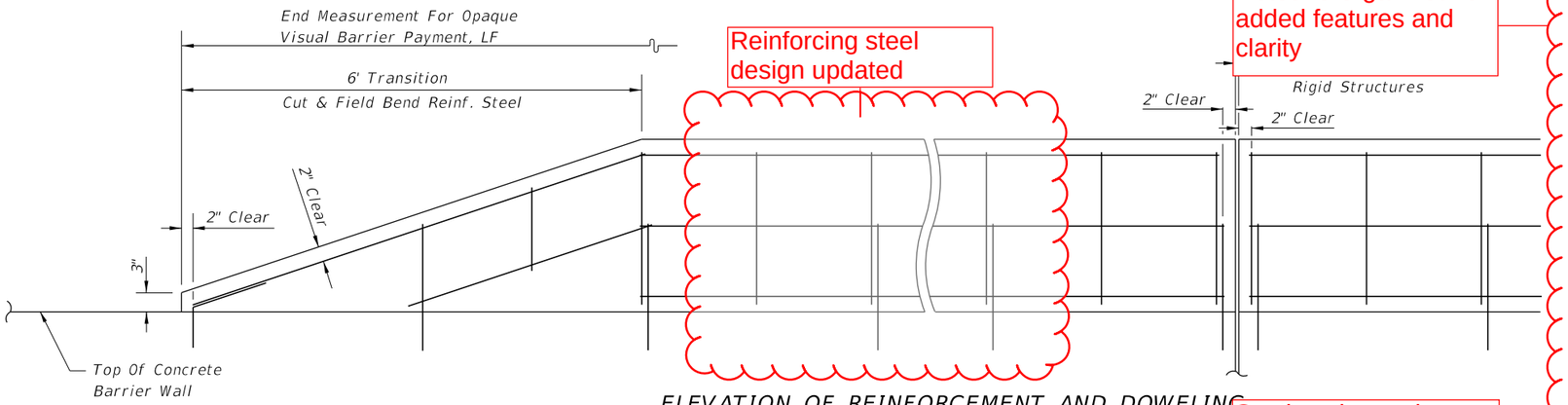
Origination Package Includes: (Email or hand deliver package to Derwood Sheppard)

Yes	N/A	
☐	☑	Redline Mark-ups
☐	☑	Proposed Standard Plan Instructions (SPI)
☑	☐	Revised SPI
☐	☑	Other Support Documents

Implementation:

☐ Design Bulletin (Interim) ☐ DCE Memo ☐ Program Mgmt. Bulletin ☑ FY-Standard Plans (Next Release)

Contact the Roadway Design Office for assistance in completing this form



ELEVATION OF REINFORCEMENT AND DOWELING

Reinforcing steel design updated

Notes re-organized for added features and clarity

Section view redrawn to accommodate different Opaque Visual Barrier heights

Redeveloped Standard to update design and add additional features, including:

1. new heights for Single-Slope Concrete Barrier, Traffic Railing, and all existing F-Shape

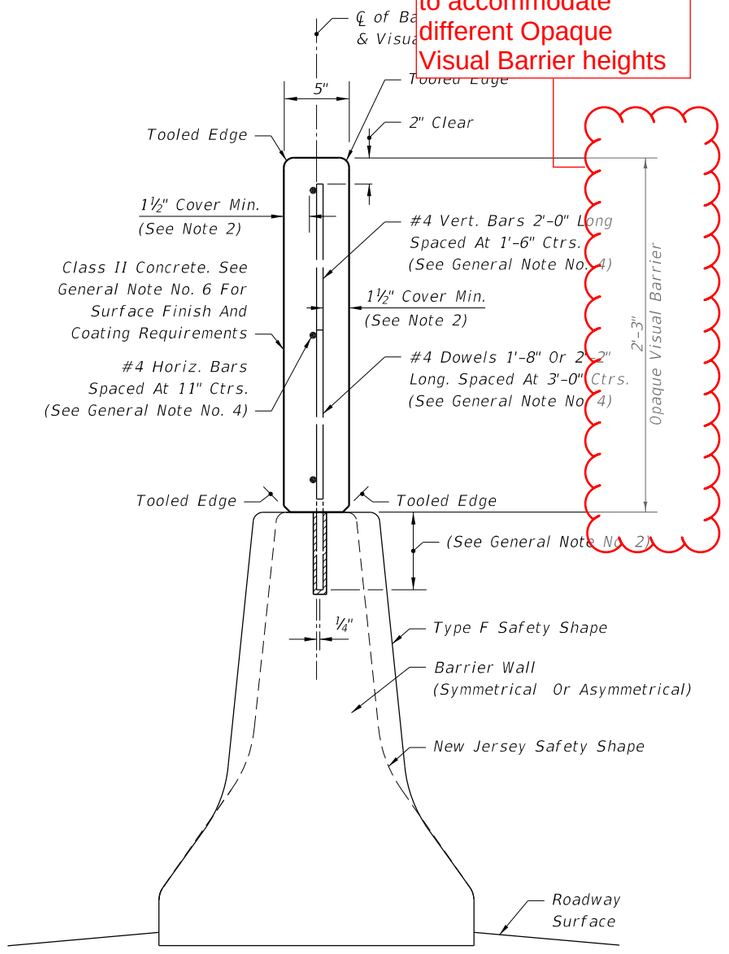
2. tighter spacing of reinforcing steel

3. minimum transverse joint spacing

4. "leave-out" concept for handling barrier-mounted structures

5. accommodation for welded wire reinforcing and variable barrier heights

ESTIMATED QUANTITIES, LF	
Concrete	0.042 CY
Reinforcing Steel	3.27 Lbs.*
*3.38 Lbs. With 2'-2" Dowels	



END VIEW

GENERAL NOTES

1. The opaque visual barrier is intended to function as a visual screen, and is not intended to resist vehicle impact loads nor to restrain, contain or restrict vehicles or cargo. The barrier is designed to withstand zone wind loading and strikes by light debris; and, designed to yield to exceptional strikes by vehicles or cargo, and to contain ruptured segments of the screen when yielding to such strikes.

2. When the opaque visual barrier is constructed on an existing barrier wall, dowels shall be 1'-8" in length, embedded 6" into the barrier wall and set with an approved non shrink grout. Embedment holes shall be 5#8" diameter, drilled to a depth 1#4" below the tip of the dowel unless greater depth is required to accept manufactured grout capsules.

   When the opaque visual barrier is constructed in conjunction with project concrete barrier walls, dowels may be set as described above, in either the drilled or preformed holes; or, placed when the barrier wall is cast. For dowels that are placed when the wall is cast, the dowel shall be 2'-2" in length and embedded to a depth of 12".

   When longitudinal reinforcing bars are encountered in the stem of existing barrier, shift the dowels to clear, maintaining the 11#2" Cover Minimum to the face of the Opaque Visual Barrier.

3. For both double and single faced concrete barrier walls the opaque visual barrier is to be located in the center of the top of the wall.

   For single faced barrier walls that are constructed around other vertical structures, the opaque visual barrier shall follow the alignments of only one of the walls and be centered atop that wall.

   For dual median barrier walls that follow differential profiles, the opaque visual barrier shall be constructed atop the wall with the higher elevation, unless conditions dictate otherwise. Lateral transitions or end overlaps for opaque visual barriers that alternate between dual walls shall be detailed in the plans.

   For median barrier walls that are divided when connecting to separated bridges, the opaque visual barrier shall be constructed atop the approach side barrier wall, unless differential profiles dictate locating the opaque visual barrier on the departure side barrier wall.

   Opaque visual barriers to be located on capped fills between dual barrier walls shall be detailed in the plans.

4. In lieu of the reinforcement shown, the Contractor may substitute welded wire fabric equal to or better than that shown, when approved by the Engineer. Details shall be submitted with requests for substitution.

5. The Contractor may construct contiguous precast concrete panels in lieu of the cast-in-place opaque screen when approved by the Engineer. Panel design and method for anchorage to the barrier wall shall be detailed by shop drawings when requesting the Engineer's approval.

   The Contractor may construct the opaque screen monolithically with the barrier wall; however, the screen design shall not be modified so as to cause the wall to be dynamically active from strikes on the screen; see design considerations in Note No. 1 above.

6. Exposed concrete surfaces shall have a Class 3 surface finish in accordance with Section 521 of the Standard Specification, unless another finish is called for in the plans.

7. Payment for opaque visual barrier shall be full compensation for concrete, reinforcement, dowels, casting, placement, drilling, grouting, tooling, finishing and work incidental thereto, and shall be paid for under the contract unit price for Opaque Visual Barrier (Concrete) (2'-3" Height), LF.

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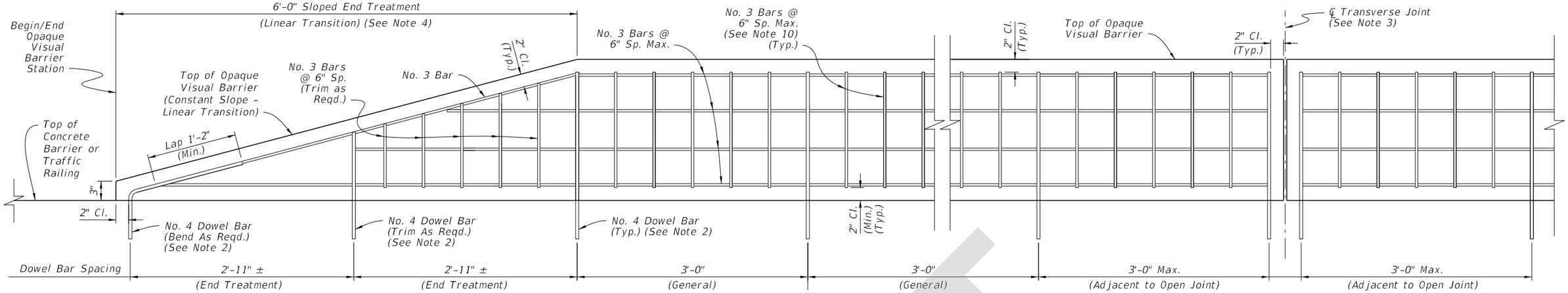


ELEVATION VIEW - OPAQUE VISUAL BARRIER

GENERAL NOTES:

1. GENERAL: Construct Opaque Visual Barrier (OVB) in accordance with Specification 521, and use either cast in place or precast panels. Do not cast OVB concrete monolithically with the Concrete Barrier or Traffic Railing; use an ASTM D6380, Class S, Type III Organic Felt bond breaker as needed.

2. DOWEL BAR CONNECTION: For the embedment in Concrete Barrier or Traffic Railing concrete, dowel bars must be either cast in place for new concrete or grouted in place for existing concrete. Embed the dowel bars to the corresponding depths shown, and use the bar lengths provided in the Dowel Bar Length Table.

   At cast in place embedment locations, longitudinally shift the dowel bars only as required to avoid reinforcing steel in the Concrete Barrier or Traffic Railing.

   At grouted embedment locations, drill ⅝" Ø holes to a depth of 6¼". Use only approved non-shrink grout on the APL. Drilling through existing reinforcing steel is permitted.

3. TRANSVERSE JOINTS: Place ½" Transverse Joints with a maximum spacing of 50'-0" and a minimum spacing of 20'-0". Use a consistent spacing where practical.

   Without violating the above spacing requirements, place Transverse Joints matching the location and width of open joints in the supporting Concrete Barrier or Traffic Railing.

4. SLOPED END TREATMENTS: Regardless of the traffic direction, place Sloped End Treatments on all exposed ends of OVB, excluding leave-outs for barrier-mounted signs and light poles. See Note 7 below.

5. BARRIER-MOUNTED SIGNS AND LIGHT POLES: Where signs and barrier-mounted light pole structures conflict with placement of OVB, end and restart the OVB with a transverse vertical face located a longitudinal distance of 2" (±½") from the base of the structure. Follow the same reinforcing scheme and concrete cover requirement for the Transverse Joint shown herein. See Note 7 below.

6. LARGE BARRIER-MOUNTED SIGN SUPPORTS: See Sheet 2 for details. See Note 7 below.

7. LEAVE-OUTS: OVB leave-outs are longitudinal gaps in OVB segments required to accommodate barrier-mounted signs and light pole placement. Leave-outs up to 15 feet in length are included in OVB length measurement.

8. ASYMMETRICAL CONCRETE BARRIER SECTIONS: When mounting on top of an asymmetrical Concrete Barrier section (not shown), align the centerline of the OVB with the centerline of the top face of the Concrete Barrier section.

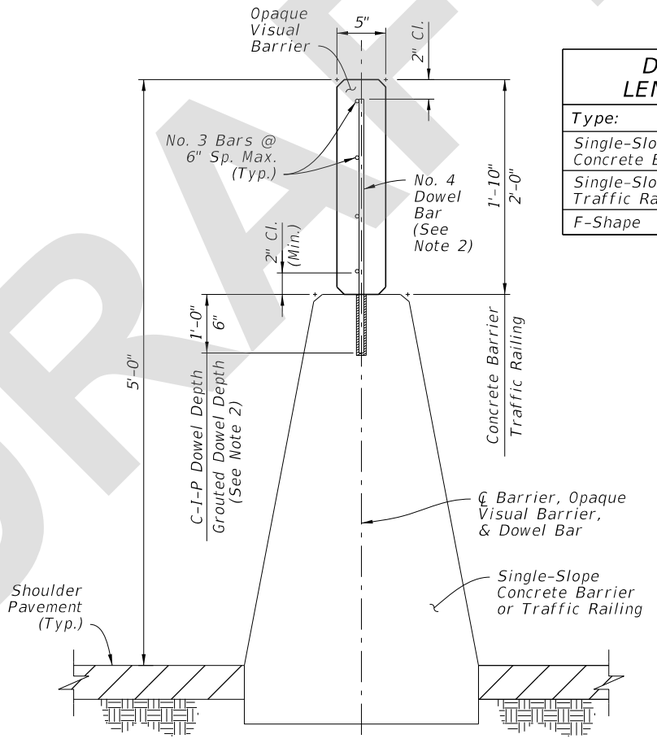
9. SPLIT CONCRETE BARRIER SECTIONS: For split Concrete Barrier sections that run separately (for vertical structures, bridges, etc.), OVB is only required on top of one of the Concrete Barrier sections. Place OVB on top of the Concrete Barrier section with the highest elevation. Longitudinally overlapping OVB runs are permitted where called for in the Plans, which are designated with overlapping Begin and End Station OVB callouts.

10. VERTICAL REINFORCING: Place vertical No. 3 bars with the spacing shown, except that No. 3 bars at the dowel bar locations may be shifted longitudinally to fit or they may be omitted at the option of the contractor.

11. OPTIONAL WELDED WIRE REINFORCEMENT: With the approval of the Engineer, the No. 3 bars shown herein may be replaced with welded wire reinforcement in accordance with Specification 415. Use welded wire reinforcement of equal or greater strength than the bars being replaced; maintain the same cover requirements with equivalent or smaller spacing.

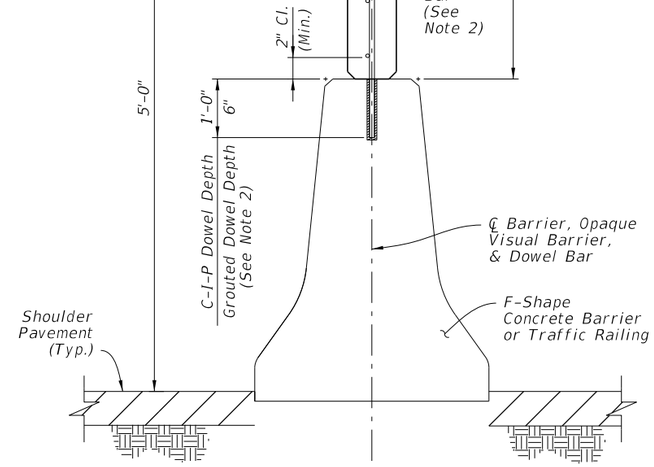
12. VARIABLE HEIGHT CONCRETE BARRIERS: See Sheet 2 for details.

13. CONCRETE BARRIER AND TRAFFIC RAILING TRANSITIONS BETWEEN DIFFERING SECTIONS: Transition the OVB section using a method similar to the OVB Linear Bottom Transition shown in Elevation View 'B' on Sheet 2, except adjust the longitudinal length of the transition as required.



SECTION VIEW - OPAQUE VISUAL BARRIER FOR MEDIAN SINGLE-SLOPE CONCRETE BARRIER OR TRAFFIC RAILING

DOWEL BAR LENGTH TABLE		
Type:	Grouted	C-I-P
Single-Slope Concrete Barrier	2'-2"	2'-8"
Single-Slope Traffic Railing	2'-4"	2'-10"
F-Shape	2'-8"	3'-2"



SECTION VIEW - OPAQUE VISUAL BARRIER FOR MEDIAN F-SHAPE CONCRETE BARRIER OR TRAFFIC RAILING

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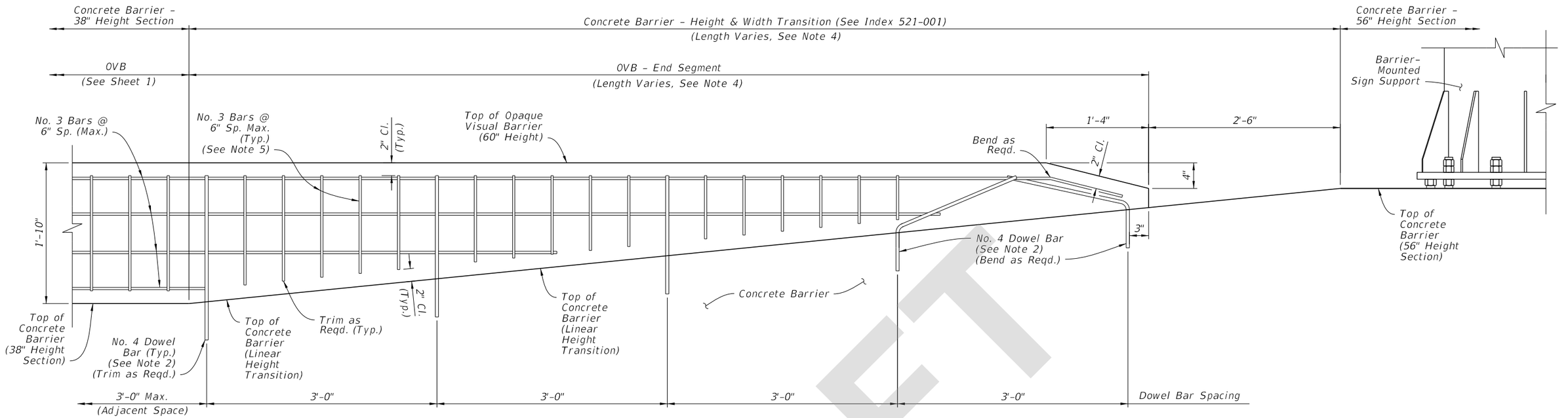
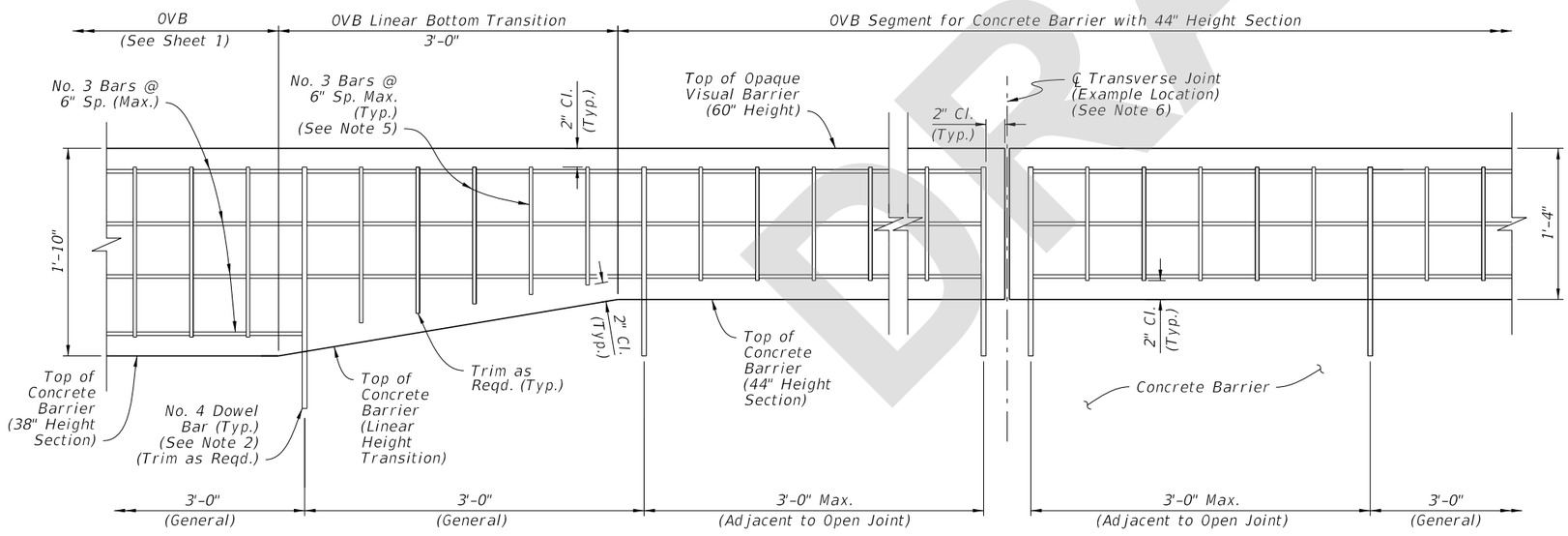


ELEVATION VIEW 'A' - OVB END SEGMENT AT CONCRETE BARRIER HEIGHT TRANSITION FROM 38" HEIGHT TO 56" HEIGHT SECTION (REVERSE DIRECTION SIMILAR BY OPPOSITE HAND)



ELEVATION VIEW 'B' - OVB SEGMENT FOR CONCRETE BARRIER WITH 44" HEIGHT SECTION (OVB LINEAR BOTTOM TRANSITION SHOWN, REVERSE DIRECTION SIMILAR BY OPPOSITE HAND)

NOTES:

1. *LATERAL DIMENSIONS: Maintain the OVB section width and lateral placement as defined on Sheet 1.*

2. *DOWEL BAR LENGTHS & CONNECTIONS: For the differing OVB section heights, trim or adjust the dowel bar lengths as required to meet the clearances shown while maintaining the dowel bar connection requirements of Sheet 1.*

   Elevation View 'A' – For the two dowel bars closest to the OVB end location, use full dowel bar lengths and bend as shown to maintain clearances. Overlapping dowel bars may deviate from the lateral centerline as required.

3. *DOWEL BAR SPACING:*

   Elevation View 'B' – The dowel locations shown in this detail are examples only, and may shift to maintain the spacing pattern that is governed by adjacent OVB. Maintain the dowel bar spacing scheme as defined on Sheet 1; place dowel bars within the OVB Linear Bottom Transition as required.

4. *SEGMENT LENGTHS:*

   Elevation View 'A' – The length of the OVB End Segment is governed by the length of linear width and height transition of the Concrete Barrier.

   Elevation View 'B' – The length of the reduced-section OVB segment is governed by the length of Concrete Barrier with 44" Height Section.

5. *VERTICAL REINFORCING: For the differing OVB section heights, trim or adjust the vertical No. 3 Bar lengths as required to meet the clearances shown.*

6. *TRANSVERSE JOINTS:*

   Follow the requirements of Sheet 1.

   Elevation View 'A' – Do not place Transverse Joints within the End Segment.

   Elevation View 'B' – Maintain the Transverse Joint spacing scheme as defined on Sheet 1; place dowel bars within the OVB Linear Bottom Transition as required.

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