

# Origination Form

## Proposed Revisions to a Standard Plans Index

<b>Originator:</b>	Stepp, Richard; Turley, Josh	<b>Index Number:</b>	521-001
<b>Date:</b>	4/18/2024	<b>Sheet Number(s):</b>	2, 11, 13, 16, 18, 20, 26
<b>E-mail:</b>	Joshua.Turley@dot.state.fl.us	<b>Index Title:</b>	CONCRETE BARRIER

### Summary of the changes:

Sheet 2: In the Elevation view, added "Begin/End Median Barrier Sta." callout at the Traffic Railing connection

Sheet 11: Changed Bar 5C2 to Bar 4C2

Sheet 13: In the Elevation view, added "Begin/End Shldr. Barrier Sta." callout at the Traffic Railing connection

Sheet 16: Changed Bar 5C2 to Bar 4C2

Sheet 18: Changed Bar 5C2 to Bar 4C2

Sheet 20: In Section A-A, added a 7" Max (Typ.) dimension between the top of the "Sidewalk or Sod" and the top of the footing; In the Elevation view, added "Begin/End Curb & Gutter Barrier Sta." callout at the Traffic Railing connection

Sheet 26: Reduced bar 5C2 to a number 4 bar and relabeled as 4C2; Updated Bill of Reinforcing Steel Table accordingly; Added new Note 4, which reads "Bar 4C2 may be substituted with a number 5 bar with the minimum practical inner diameter. If needed for final placement, skew bars about the vertical axis to ensure concrete cover requirements are met."

### Commentary/Background:

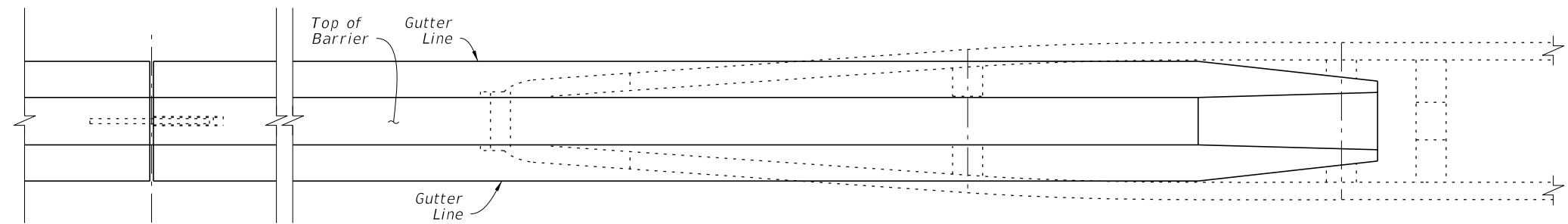
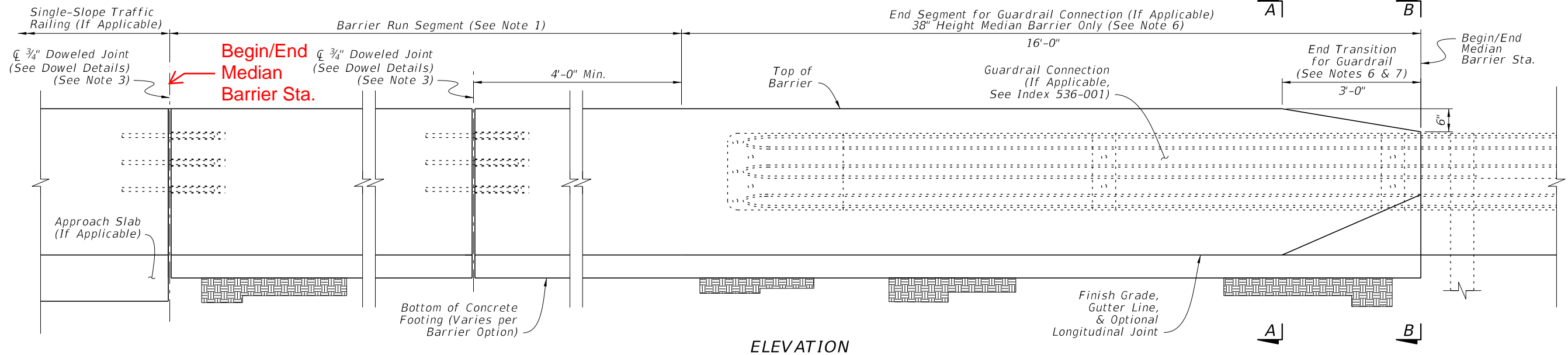
Sheet 11, 16, & 26: The minimum practical inner diameter for a number 5 bar would not allow for Bar 5C2 to meet cover requirements as shown in the barrier details. Changing this to a number 4 bar instead will resolve this issue while still meeting the need. This issue was reported by a manufacturer and verified by the SDO. Last, a note was added to still allow for the number 5 bar with a skew so that existing bar inventories may still be used.

Sheet 20: A consultant inquired about the minimum height of the back of barrier next to the sidewalk. This was determined to be 31", which is consistent with the 31" W-Beam Guardrail policy in FDM 222.4 for Pedestrian Drop-off Hazards. Adding the proposed 7" dimension will ensure at least 31" height of barrier is provided on the sidewalk side.

Other Affected Documents/Offices	Person Contacted	Affected (Yes/No)
Other Standard Plans		No
FDOT Design Manual		No
Standard Specifications		No

<b>Basis of Estimates Manual</b>		No
<b>Approved Product List</b>		No
<b>Construction Office</b>		No
<b>Maintenance Office</b>		No

<b>Implementation</b>
["FY-Standard Plans (Next Release)"]

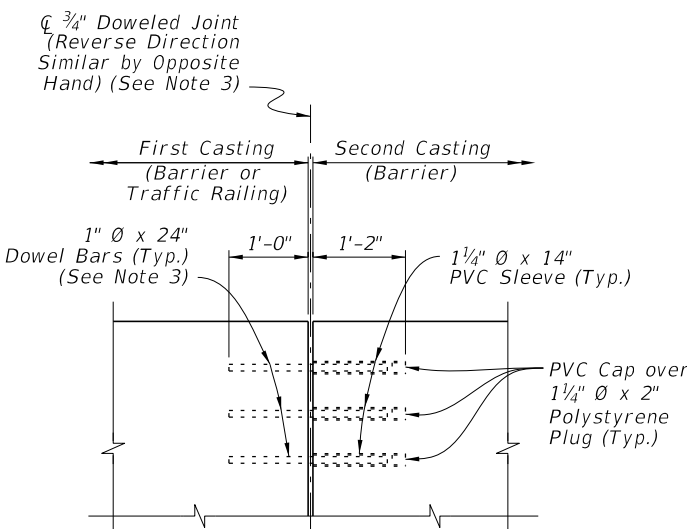
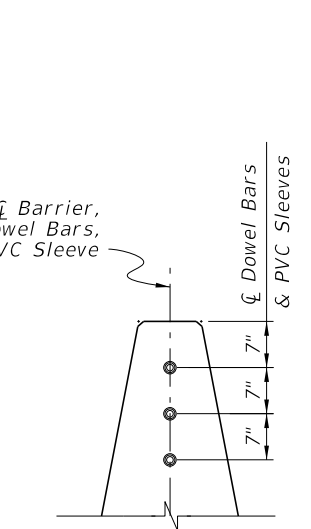
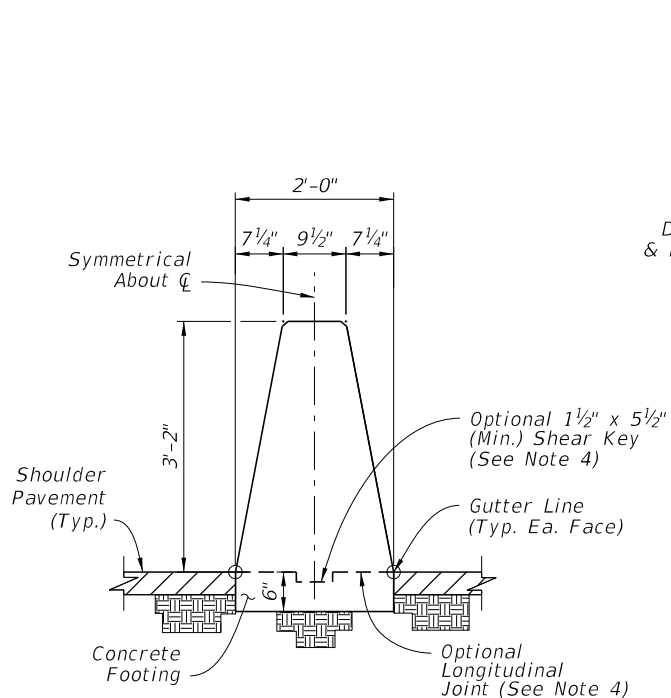


ELEVATION

PLAN

**MEDIAN BARRIER NOTES:**

- BARRIER RUN SEGMENT:** Within the Barrier Run Segment, either the 38" Height Median Barrier or the differing Median Barrier sections shown throughout the Index may be placed as required per the Plans.
- SECTION VIEWS:** For additional Views A-A and B-B, see Sheet 3.
- DOWELED JOINTS:** See the General Notes on Sheet 1 for usage of joint types. Place Doweled Joints at 100-foot maximum intervals. Place steel reinforcing with a longitudinal 3" cover adjacent to the joint face(s) in the barrier. Use ASTM A36 smooth round bars with hot-dip galvanization.  
  
For the dowel connection into the first casting, the dowel may be cast-in-place for new concrete or placed into a 1 1/8" O x 13" (± 1/2") drilled hole for cured concrete. For drilled holes larger than 1 1/8" O, secure the dowel with adhesive in accordance with Specification 416. No load testing is required.  
  
For the dowel connection into the second casting, use a 1 1/4" NPS Schedule 80 PVC pipe with a sealed cap, cast-in-place as shown.
- OPTIONAL LONGITUDINAL JOINT:** When a longitudinal joint is placed above the concrete footing, use the Optional 1 1/2" x 5 1/2" Shear Key shown. As a substitute for the Shear Key, the footing's top surface may be raked to provide additional shear friction. Rake the fresh concrete surface so that about half the surface area has approximately 1/4" depth longitudinal grooves, distributed evenly per the approval of the Engineer.
- SHOULDER ROCKING OR MINOR GRADE SEPARATIONS:** Where called for in the Plans, the nominal shoulder pavement surface elevation may be placed up to 3" below the location shown herein. For barriers with shallow embedments shown on Sheets 6 thru 9, extend the barrier's concrete lower across its entire section such that the barrier's concrete bottom remains embedded at least 1" below the lowered pavement surface.
- GUARDRAIL CONNECTIONS:** Connect Guardrail using the Transition Connections to Rigid Barrier per Index 536-001 in conjunction with the 16'-0" End Segment for Guardrail shown herein.
- CRASH CUSHION CONNECTIONS:** Connect Crash Cushions per Index 544-001 in conjunction with the 3'-0" End Transition for Guardrail as shown herein.
- FREE ENDS:** When the barrier end does not terminate with a Traffic Railing Connection, Guardrail Connection, Crash Cushion Connection, or Sloped End Treatment as called for in the Plans, terminate in accordance with the Free End Reinforcing detail on Sheet 3.



SECTION DOWEL PLACEMENT

ELEVATION DOWEL BAR & PVC CONNECTION

DOWEL DETAILS

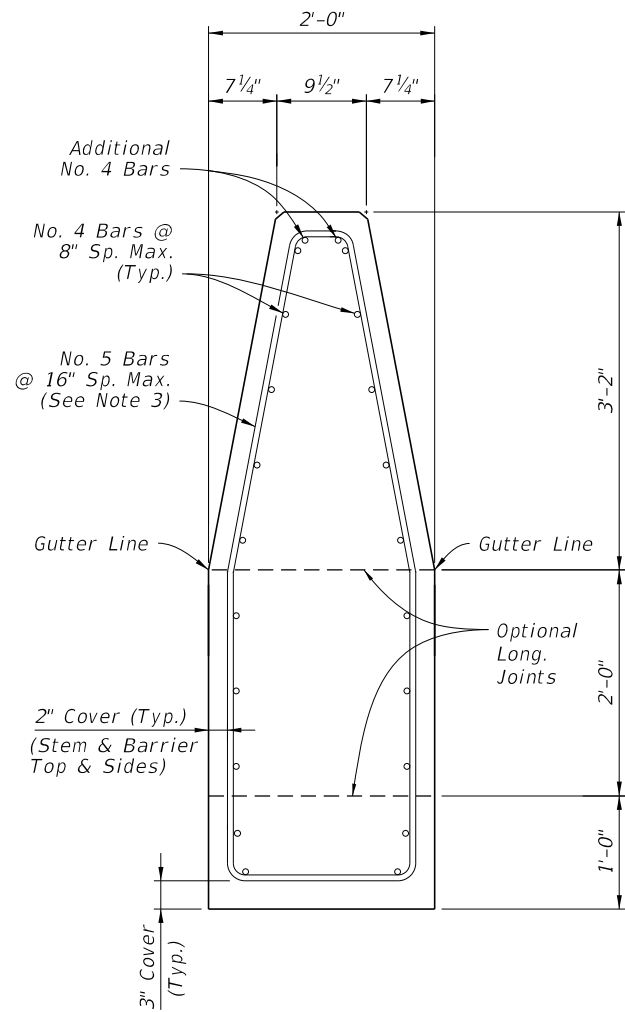
SECTION A-A  
38" HEIGHT MEDIAN BARRIER  
(See Sheet 3 for Steel Reinforcing Details)

**MEDIAN BARRIER**

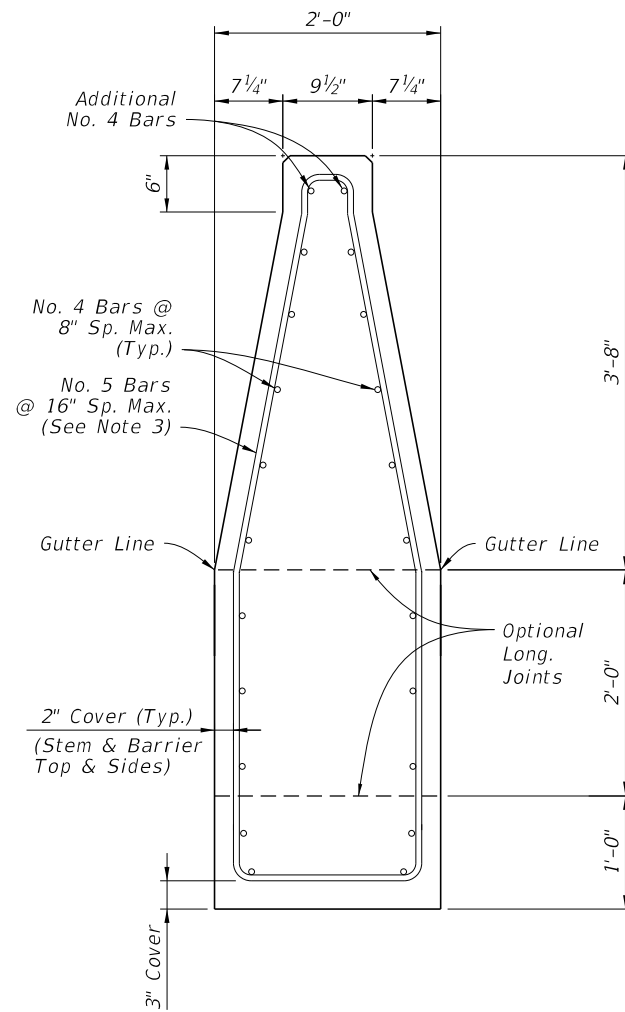
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LAST REVISION 11/01/23 11/01/24	REVISION	DESCRIPTION:		FY <del>2024 25</del> <b>STANDARD PLANS</b>	<b>CONCRETE BARRIER</b>	INDEX	SHEET
						521-001	2 of 26

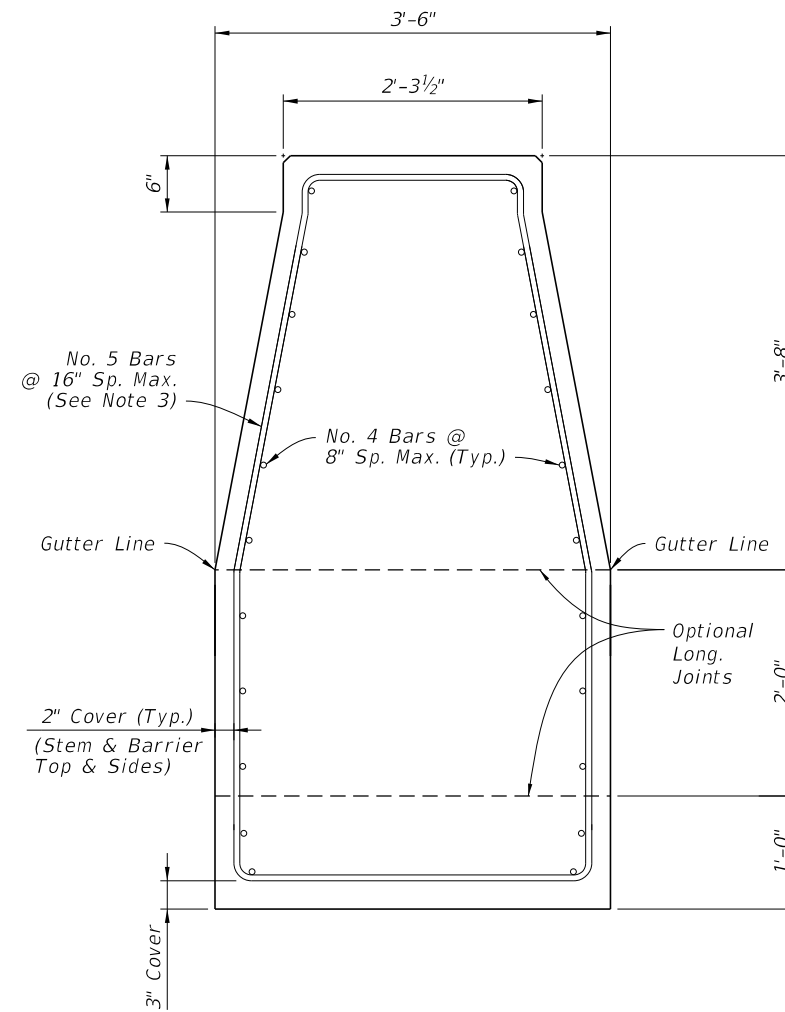
2025-26



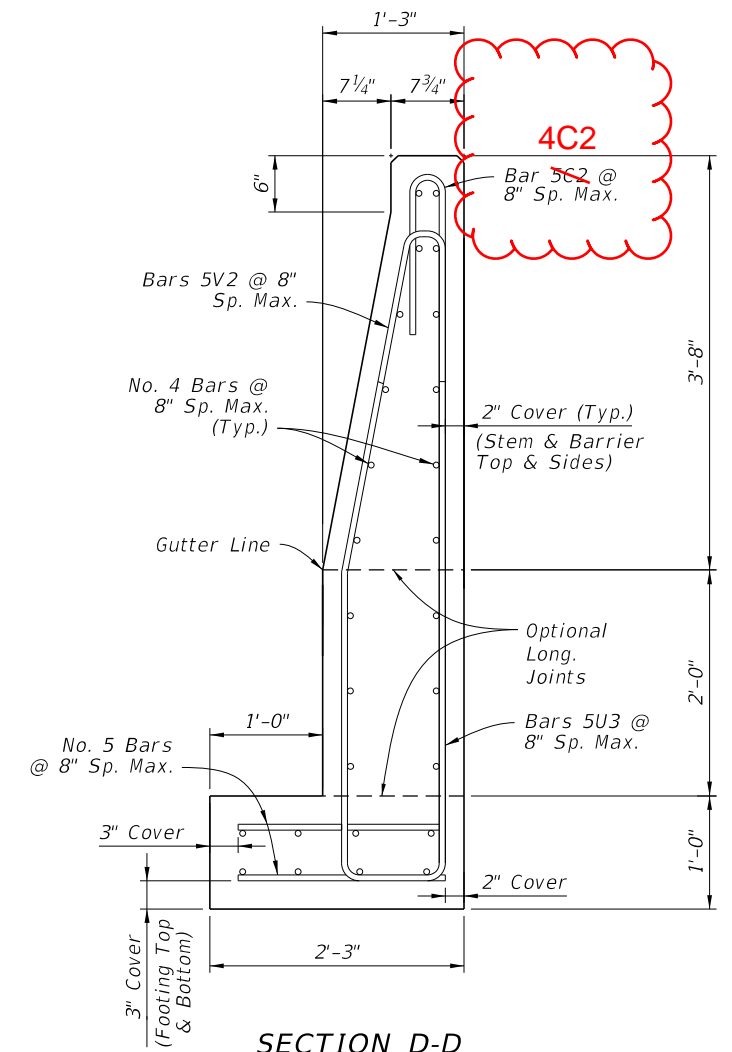
**SECTION A-A**  
**BEGIN HEIGHT**  
**TRANSITION**  
 (show spliced bars)



**SECTION B-B**  
**END HEIGHT TRANSITION**  
**BEGIN WIDTH TRANSITION**



**SECTION C-C**  
**END WIDTH TRANSITION**  
**BEGIN SPLIT SECTIONS**



**SECTION D-D**  
**44" HEIGHT SPLIT SECTION**  
 (Opposite Side of Median  
 Similar by Opposite Hand)

Concrete Qty. = 0.30 CY/FT  
 Steel Qty. = 52.6 LB/FT

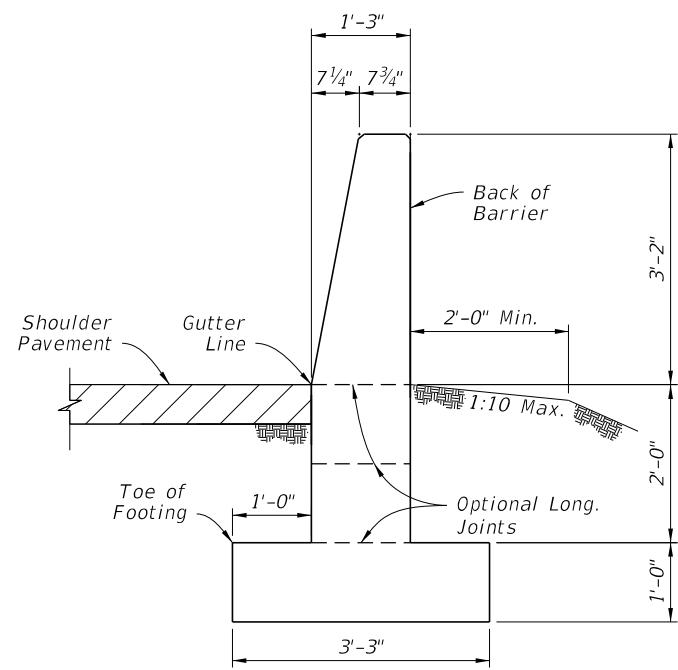
**NOTES:**

1. GENERAL: Work with the Plan and Elevation views on Sheet 10.
2. LONGITUDINAL REINFORCING CONTINUITY: Maintain all longitudinal steel reinforcing shown in Section C-C continuously into Section D-D (spliced where required). The additional longitudinal reinforcing shown in Section D-D does not require continuity into Section C-C, and it starts 3" from the construction joint or edge of concrete per the details on Sheet 10.
3. STIRRUP BARS: For the vertical and transverse reinforcement requirement shown, bar bending diagrams are not provided due to varying section dimensions. Use any combination of spliced reinforcing steel to position the reinforcement with the same cover, spacing, continuity, and equivalent strength shown herein, as approved by the Engineer.

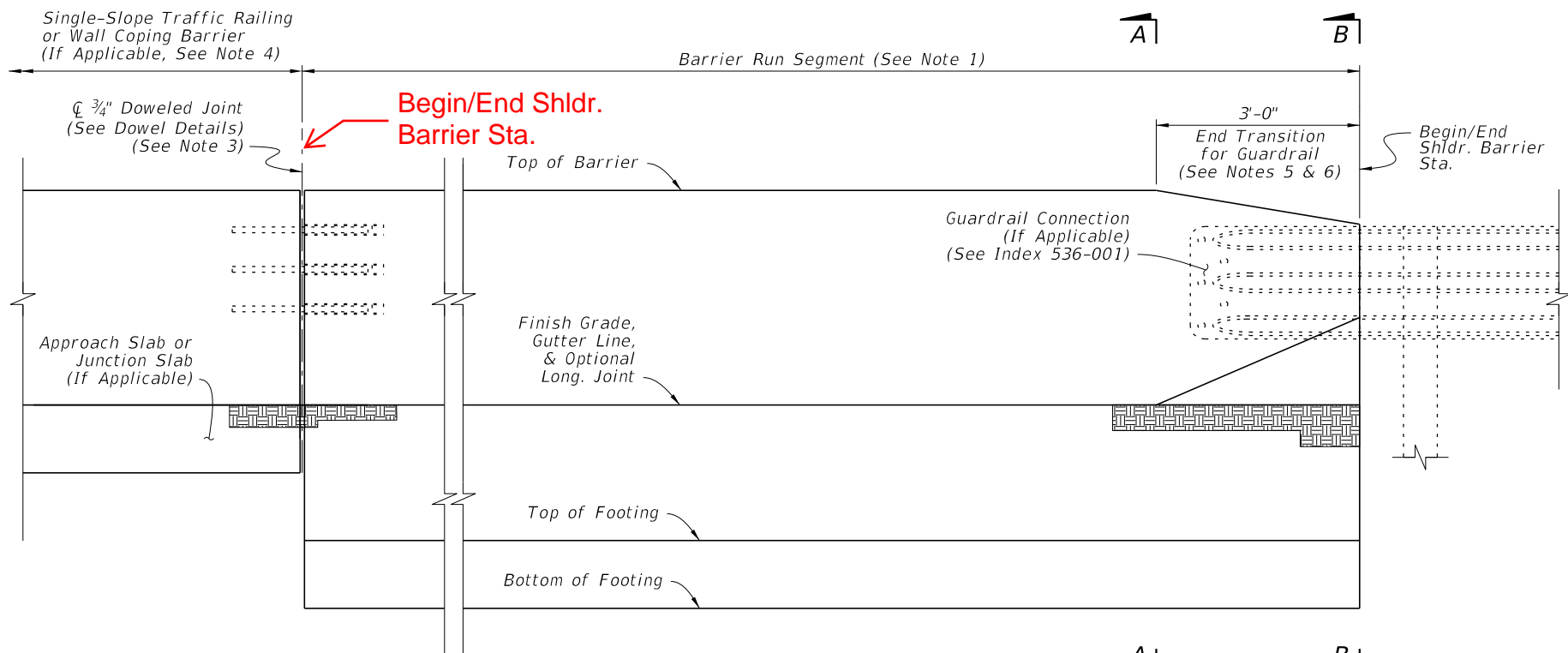
**MEDIAN BARRIER - 44" HEIGHT**  
**SPLIT SECTION FOR PIER SHIELDING - DETAILS**

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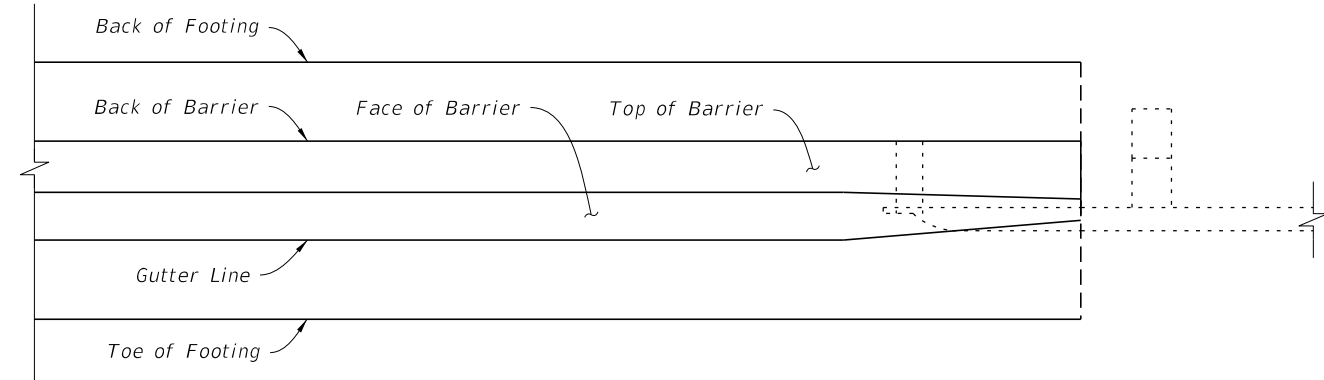
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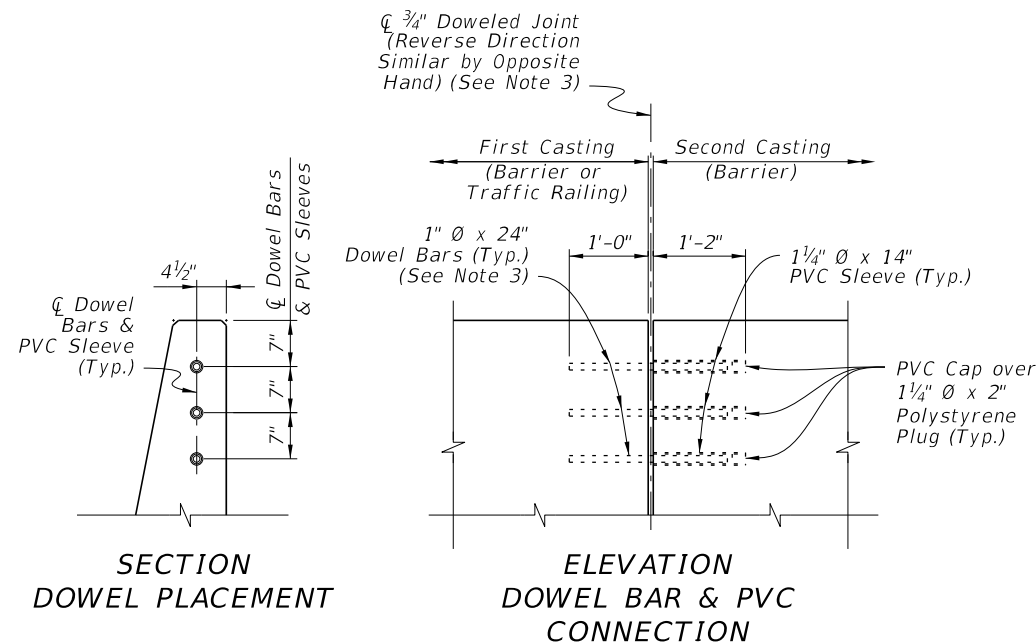
**SECTION A-A**  
**38" HEIGHT SHOULDER BARRIER**  
 (See Sheet 14 for  
 Reinforcing Steel Details)



**ELEVATION**



**PLAN**



**DOWEL DETAILS**


**SHOULDER BARRIER NOTES:**

- BARRIER RUN SEGMENT:** Either the 38" Height Shoulder Barrier or the differing Shoulder Barrier sections shown throughout the Index may be placed within this segment as required per the Plans.
- SECTION VIEWS:** For additional Views A-A and B-B, see Sheet 14.
- DOWELED JOINTS:** See the General Notes on Sheet 1 for usage of joint types. Place steel reinforcing with a longitudinal 3" cover adjacent to the joint face in the barrier. Use ASTM A36 smooth round bars with hot-dip galvanization.  
  
 For the dowel connection into the first casting, the dowel may be cast-in-place for new concrete or placed into a 1 1/8"Ø x 13"(± 1/2") drilled hole for cured concrete. For drilled holes larger than 1 1/8"Ø, secure the dowel with adhesive in accordance with Specification 416. No load testing is required.  
  
 For the dowel connection into the second casting, use a 1 1/4" NPS Schedule 80 PVC pipe with a sealed cap, cast-in-place as shown.
- TRAFFIC RAILING CONNECTIONS:** Align the barrier and Traffic Railing faces and connect with the 3/4" Doweled Joint.
- GUARDRAIL CONNECTIONS:** Connect Guardrail using the Transition Connections to Rigid Barrier per Index 536-001.
- CRASH CUSHION CONNECTIONS:** Connect Crash Cushions per Index 544-001 in conjunction with the 3'-0" End Transition for Guardrail as shown herein.
- FREE ENDS:** When the barrier end does not terminate with a Traffic Railing Connection, Guardrail Connection, or Crash Cushion Connection as called for in the Plans, terminate in accordance with the Free End Reinforcing Note on Sheet 14.

2025-26

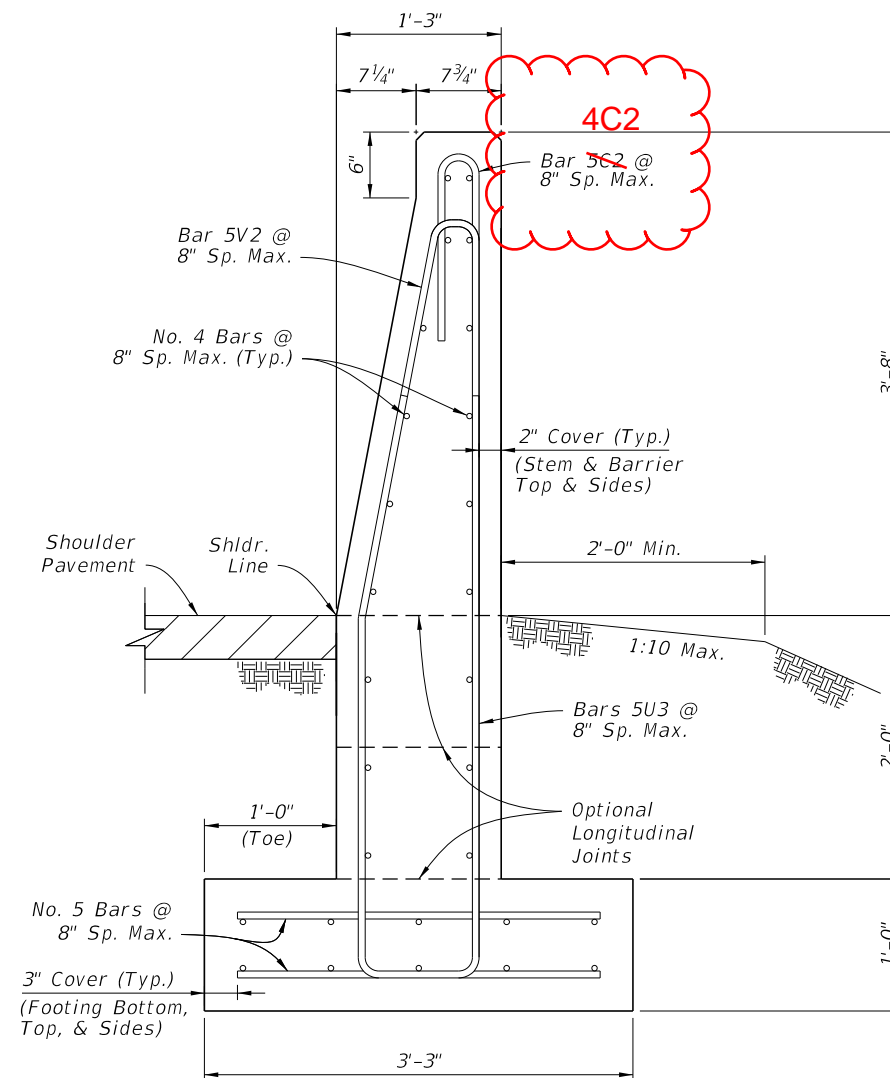
**SHOULDER BARRIER**

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LAST REVISION <b>11/01/22</b> <b>11/01/24</b>	REVISION DESCRIPTION:	 <b>FY 2024-25</b> <b>STANDARD PLANS</b>	<b>CONCRETE BARRIER</b>	INDEX <b>521-001</b>	SHEET <b>13 of 26</b>
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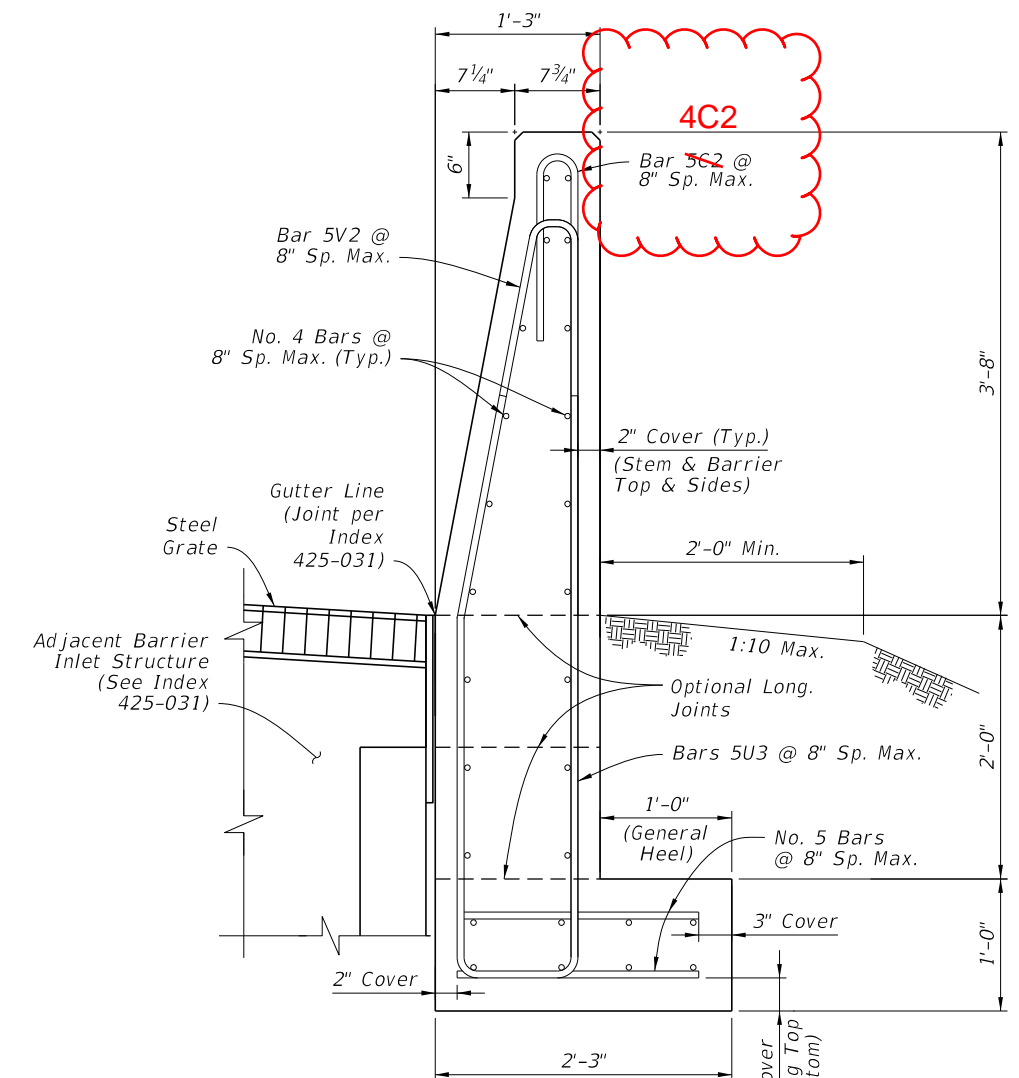
**NOTES:**

1. GENERAL: See the applicable Notes on Sheet 15.
  2. DRAINAGE SLOT OPTION: Use only where called for in the Plans. Drainage Slots may be used for all Shoulder Barrier types except for the Trench Footing Section.
- Bars 5V2 and 5U3 may exceed 8 inch spacing to accommodate Drainage Slots as shown. Bars 5U3 require pairing on both sides of slots.



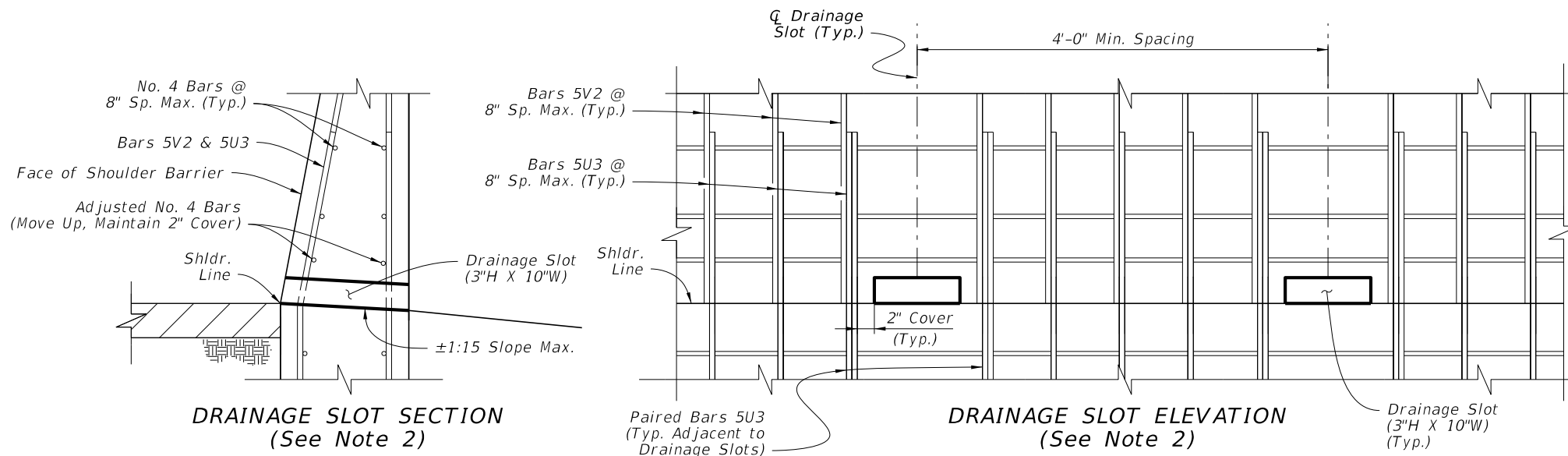
**44" HEIGHT SECTION**  
(For Use Adjacent to Rear-Flush Section on Sheet 18)

Concrete Qty. = 0.34 CY/FT  
Steel Qty. = 56.8 LB/FT



**44" HEIGHT FRONT-FLUSH SECTION**  
(For Use Adjacent to Rear-Flush Section on Sheet 18, as Required for Barrier Inlets)

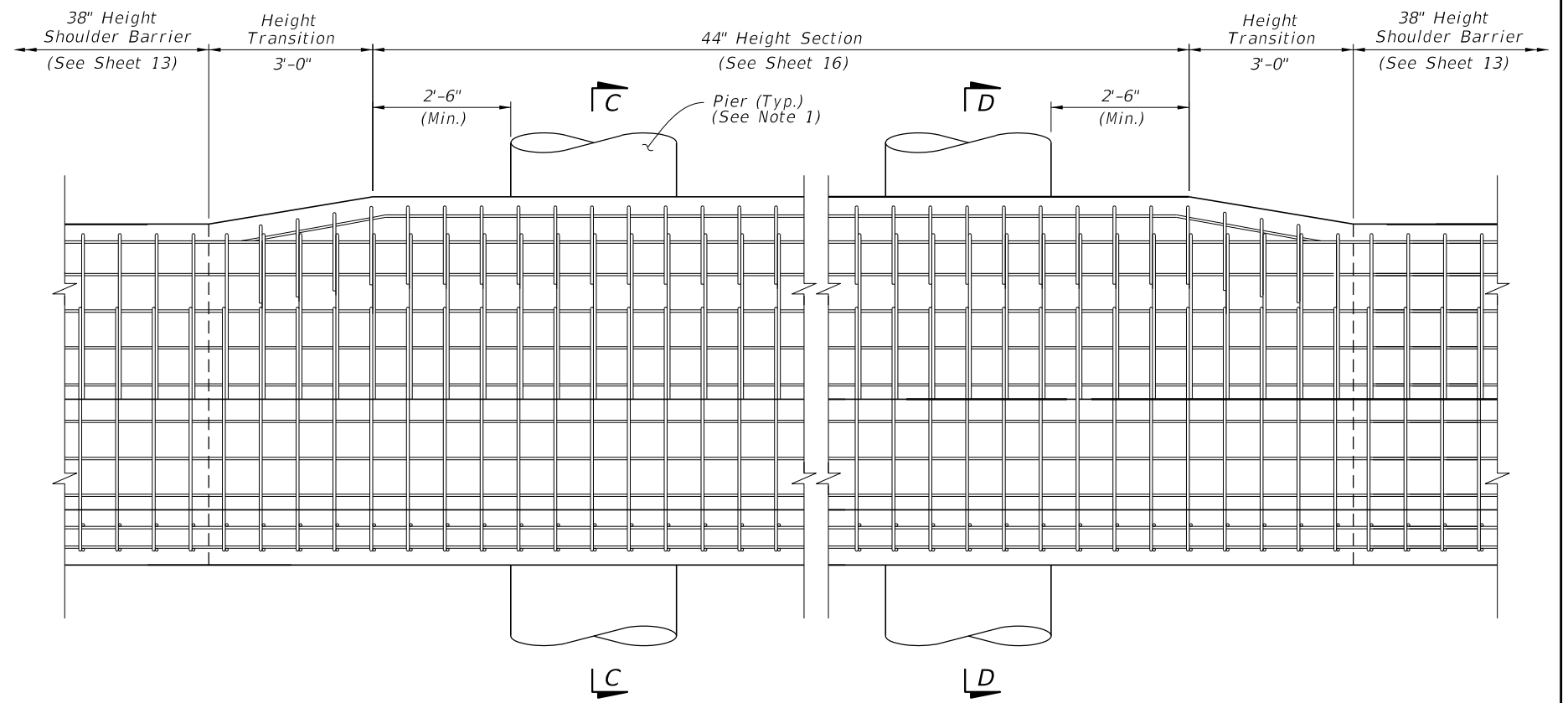
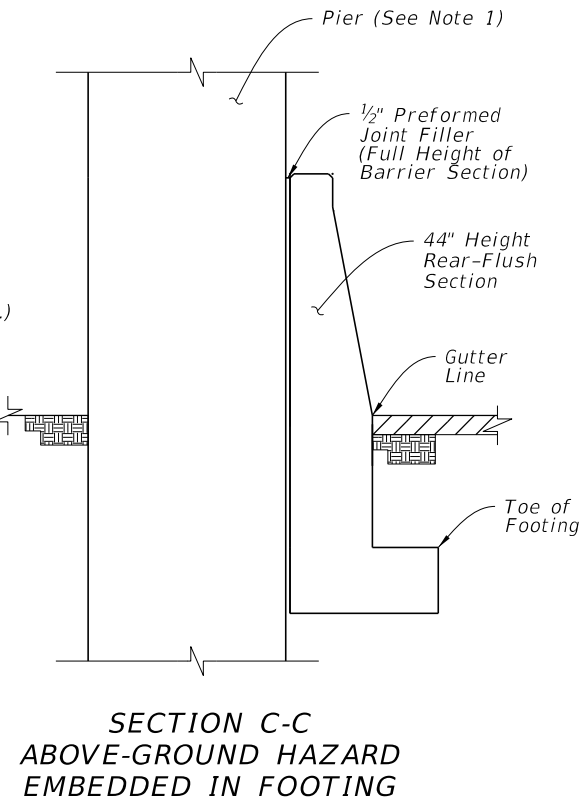
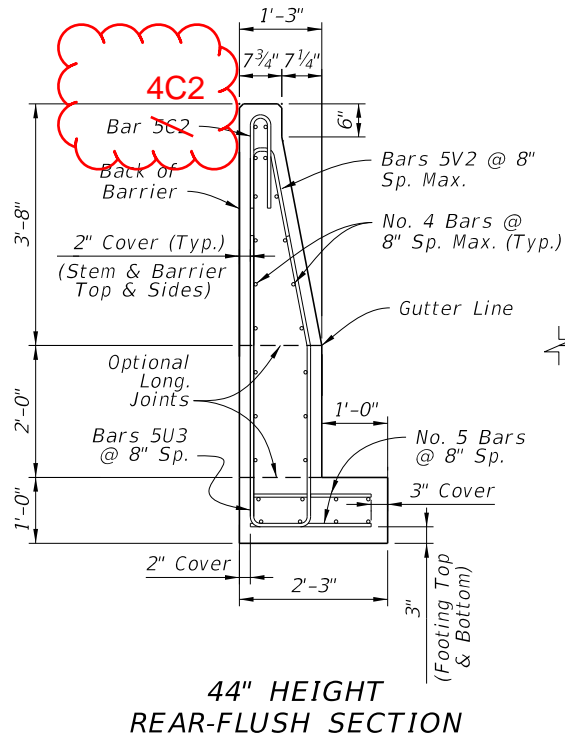
Concrete Qty. = 0.30 CY/FT  
Steel Qty. = 52.6 LB/FT



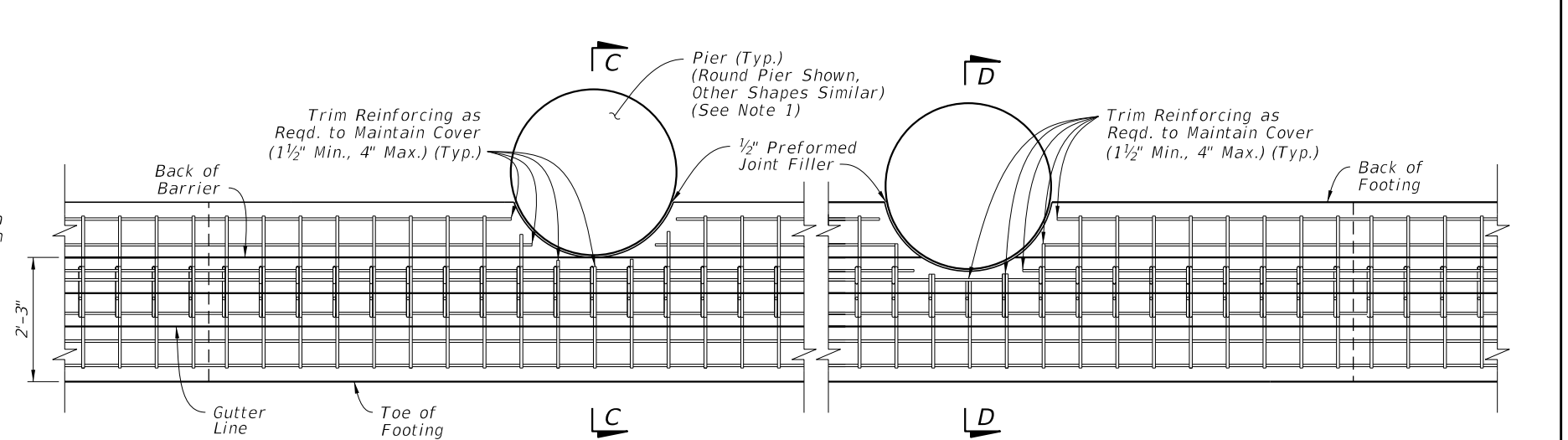
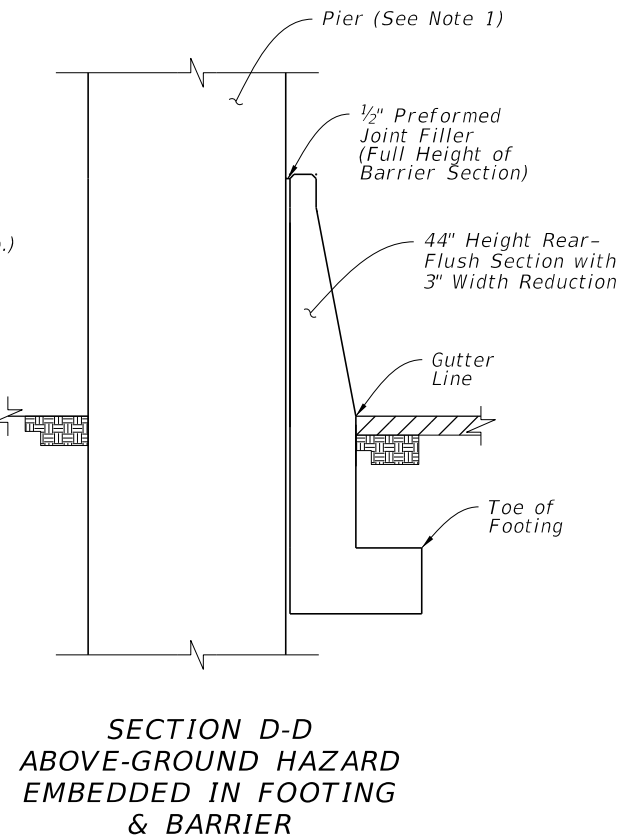
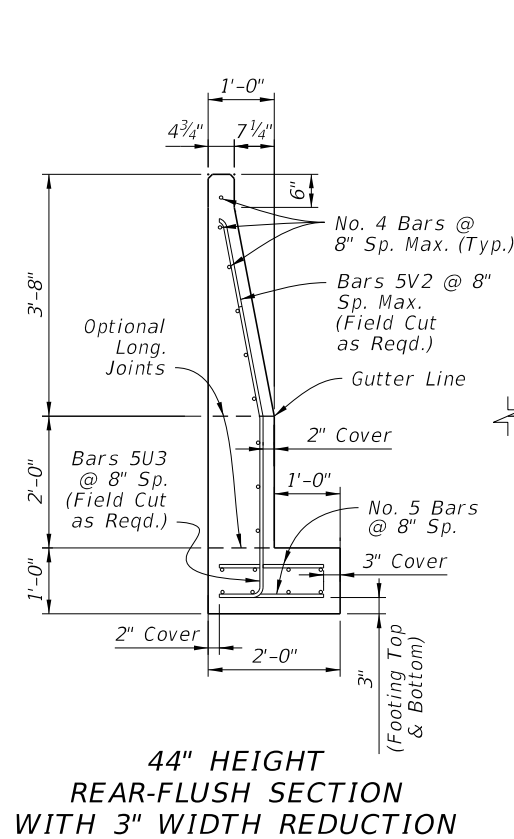
**SHOULDER BARRIER - SECTION OPTIONS (CONTINUED)**

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LAST REVISION 11/01/20 11/01/24	REVISION	DESCRIPTION:		FY <del>2024 25</del> STANDARD PLANS	CONCRETE BARRIER	INDEX	SHEET
						521-001	16 of 26



ELEVATION - ROUND PIERS EXAMPLE  
(SQUARE PIERS SIMILAR)



PLAN - ROUND PIERS EXAMPLE  
(SQUARE PIERS SIMILAR)  
(For All Longitudinal Steel Locations,  
See the Section Views)

**NOTE:**  
1. PIERS: The piers shown herein are example shapes only; see the Plans for the project-specific dimensions. The details shown herein are only for use when piers do not require protection per the AASHTO LRFD requirements. For piers requiring protection, see Index 521-002.

SHOULDER BARRIER - 44" HEIGHT REAR-FLUSH SECTION FOR REDUCED SETBACK PIER SHIELDING

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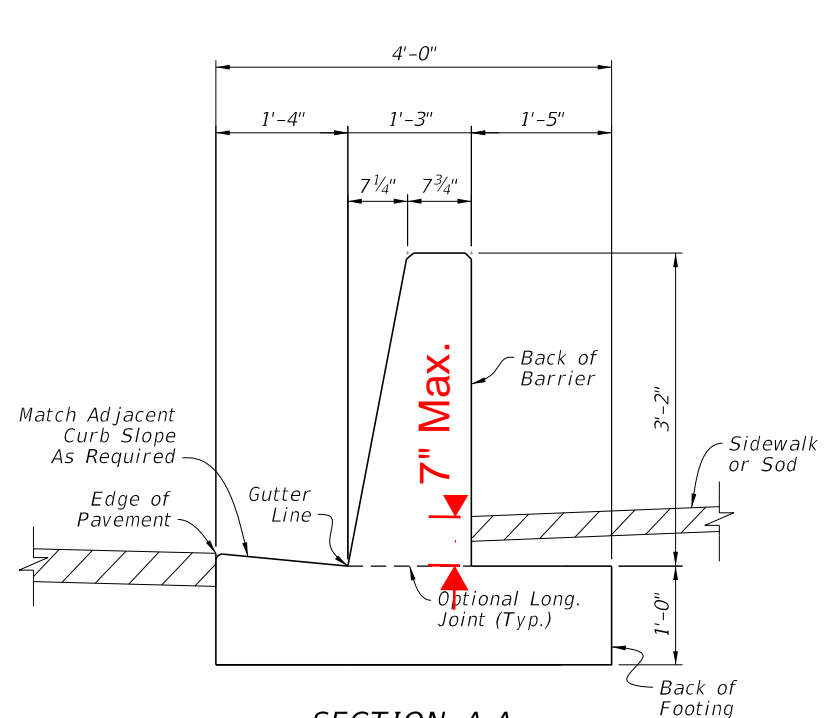
LAST REVISION	DESCRIPTION:
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2025-26  
FY 2024-25  
STANDARD PLANS

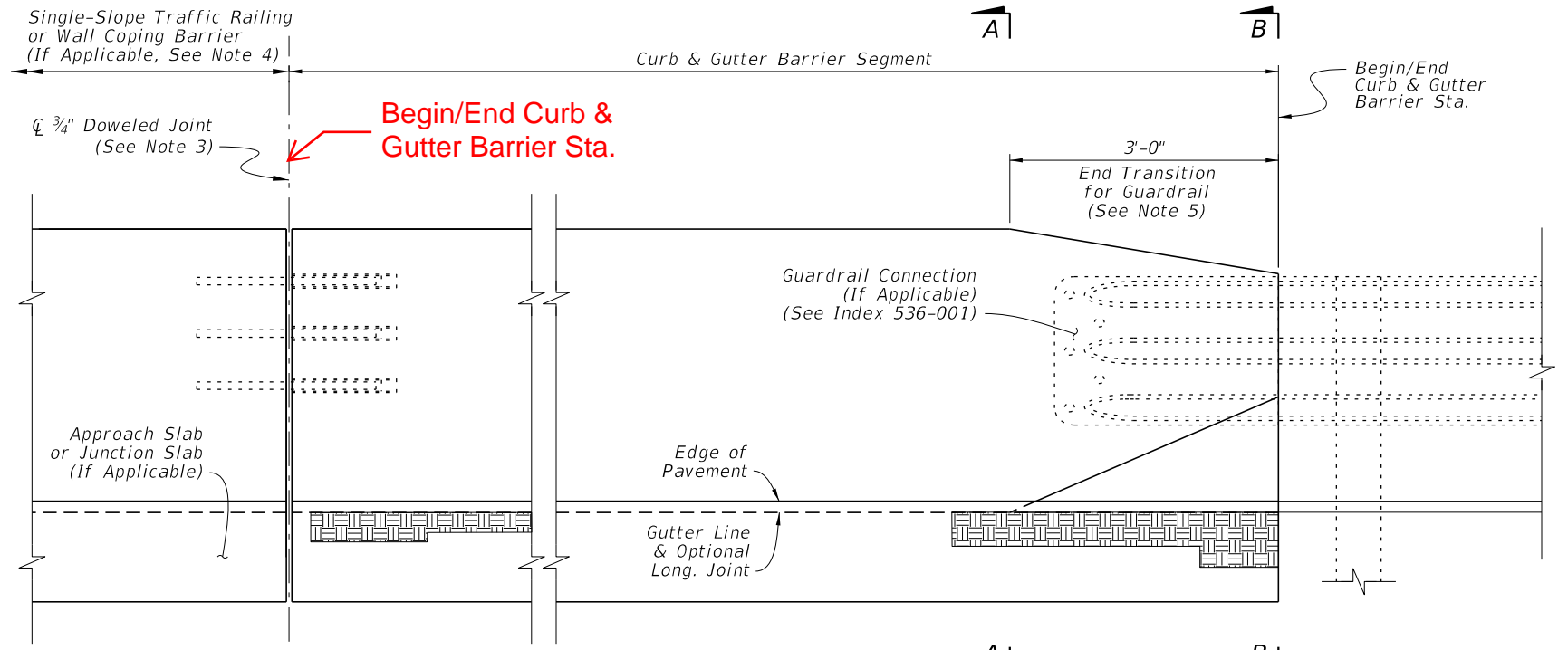
CONCRETE BARRIER

INDEX	SHEET
521-001	18 of 26

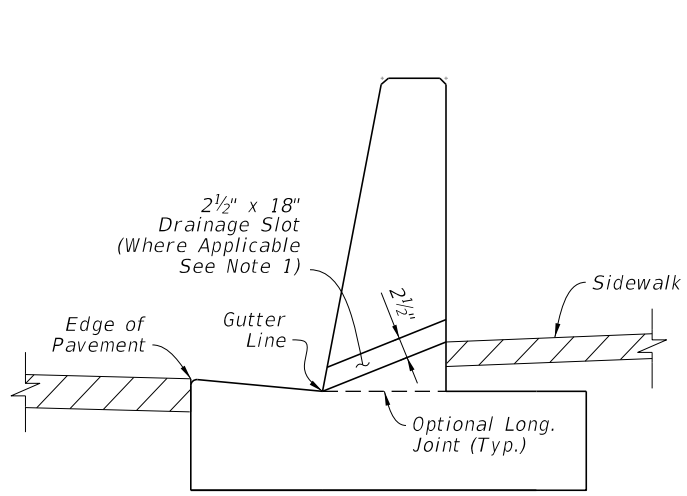




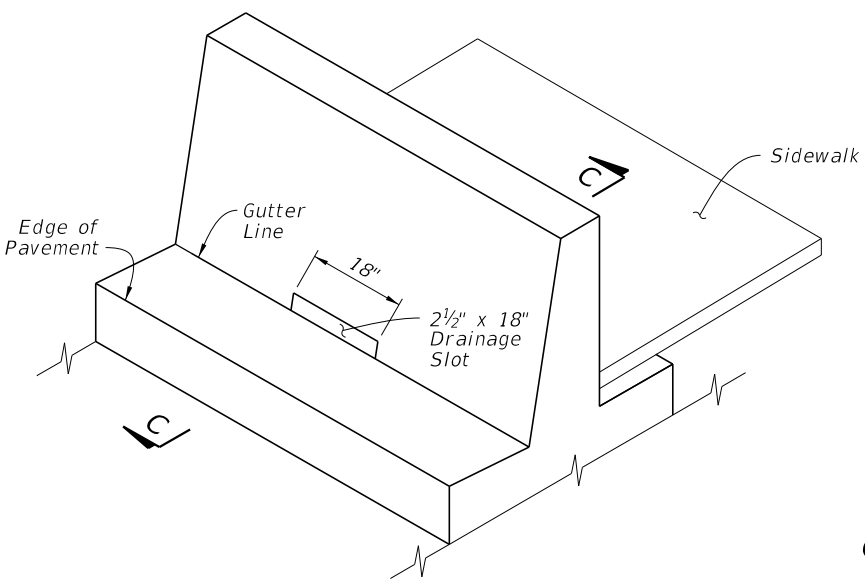
SECTION A-A  
CURB & GUTTER  
BARRIER



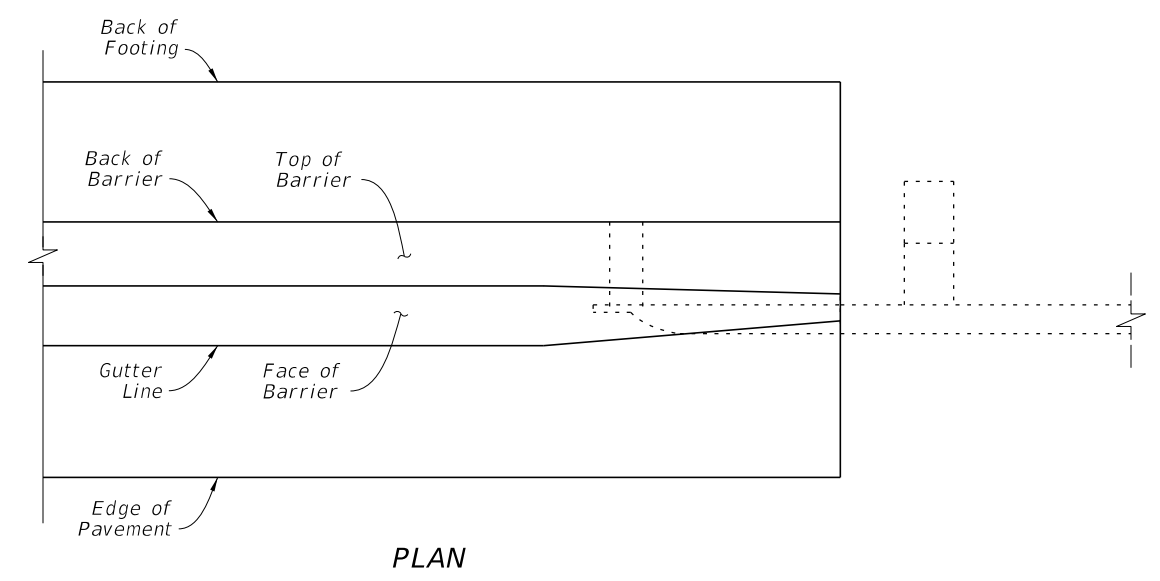
ELEVATION



SECTION C-C  
CURB & GUTTER  
BARRIER WITH  
DRAINAGE SLOT



ISOMETRIC VIEW  
CURB GUTTER BARRIER  
WITH DRAINAGE SLOT



PLAN

**CURB AND GUTTER BARRIER NOTES:**

- SECTION VIEWS: For additional Views A-A and B-B, see Sheet 21.
- EXPANSION JOINTS: Place 1/2" width transverse expansion joints through the barrier and footing spaced at 100-foot maximum intervals. On both sides of each joint, use the Free End Reinforcing bar spacing per Sheet 21.
- DOWELED JOINTS: See the General Notes on Sheet 1 for usage of joint types. Where required, install 3/4" Doweled Joints as defined on Sheet 13.
- TRAFFIC RAILING CONNECTIONS: Align the barrier and Traffic Railing faces and connect with the 3/4" Doweled Joint per Sheet 13.
- GUARDRAIL CONNECTIONS: Connect Guardrail using the Transition Connections to Rigid Barrier per Index 536-001 in conjunction with 3'-0" End Transition for Guardrail as shown herein.
- FREE ENDS: When the barrier end does not terminate with a Traffic Railing connection or Guardrail connection as called for in the Plans, terminate the barrier in accordance with the Free End Reinforcing Note on Sheet 21.

**DRAINAGE SLOT NOTES:**

- GENERAL: Place 2 1/2" x 18" Drainage Slots at locations and/or spacing called for in the Plans. The minimum spacing is 20 feet.
- STEEL REINFORCEMENT CONFLICT: When the Drainage Slot encounters a conflict with reinforcing steel, shift or cut the reinforcing steel to provide 2 1/2" (± 1/2") of concrete cover for the reinforcing around the Drainage Slot. If cutting the vertical bars, maintain 8" bar spacing. If shifting the vertical bars, move the bars from the standard 8" spacing location to the closest end of the drainage slot (distributing additional vertical reinforcement evenly on each side of the Drainage Slot).

**DRAINAGE SLOT DETAILS**

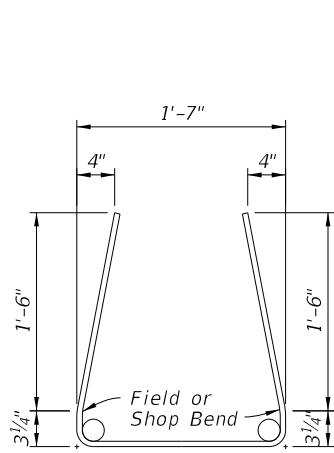
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LAST REVISION 11/01/22 11/01/24		DESCRIPTION:	2025-26 FY <del>2024-25</del> STANDARD PLANS		CONCRETE BARRIER		INDEX 521-001	SHEET 20 of 26
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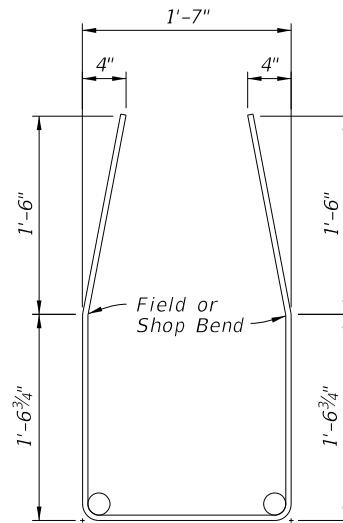
**CURB AND GUTTER BARRIER**



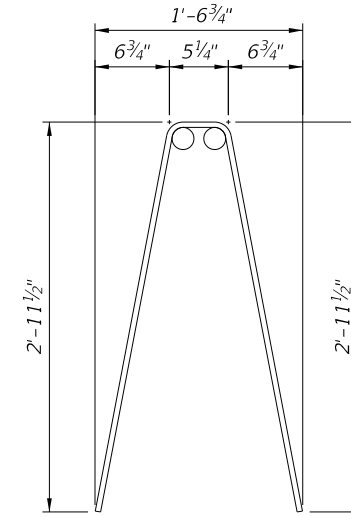
BILL OF REINFORCING STEEL		
MARK	SIZE	LENGTH
C1	4	3'-8"
C2	<del>5</del> 4	3'-0"
U1	4	5'-1"
U2	4	7'-8"
U3	5	9'-7"
U4	5	5'-9"
V1	4	6'-4"
V2	5	6'-3"
V3	4	5'-10"



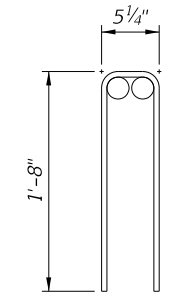
BARS 4U1



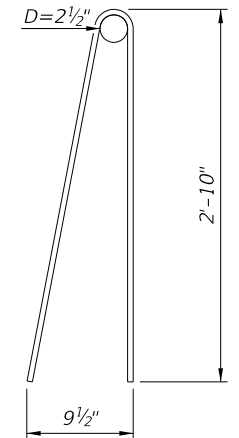
BAR 4U2



BAR 4V1



BAR 4C1

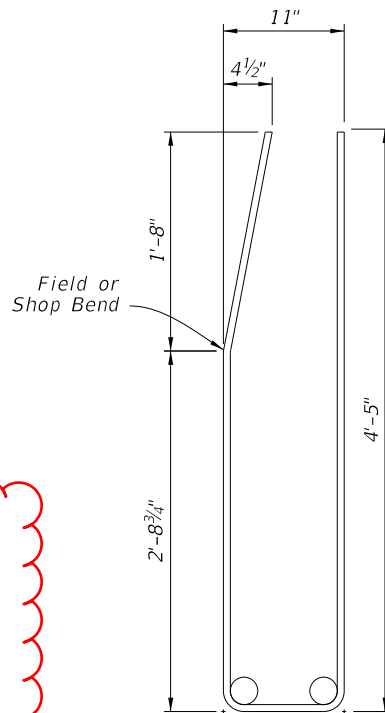


BAR 4V3

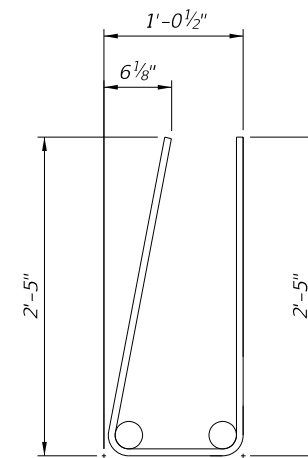
**NOTES:**

1. Work with the Standard Bar Bending Details per Index 415-001.
2. All bar dimensions in the bending diagrams are out to out.
3. Use standard inner diameters for bar bending unless otherwise shown.

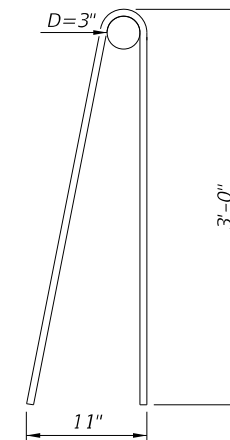
4. Bar 4C2 may be substituted with a number 5 bar with the minimum practical inner diameter. If needed for final placement, skew bars about the vertical axis to ensure concrete cover requirements are met.



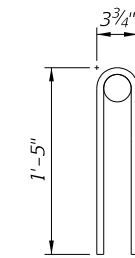
BAR 5U3



BAR 5U4



BAR 5V2



BAR ~~5C2~~  
4C2

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2025-26

REINFORCING BAR BENDING DIAGRAMS

LAST REVISION 11/01/18 11/01/24	DESCRIPTION:
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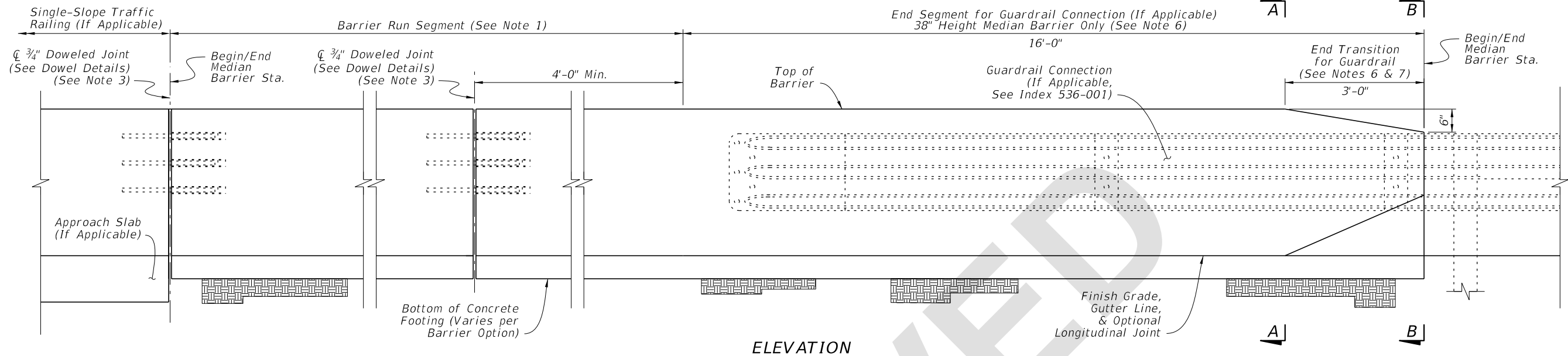


FY ~~2024-25~~  
STANDARD PLANS

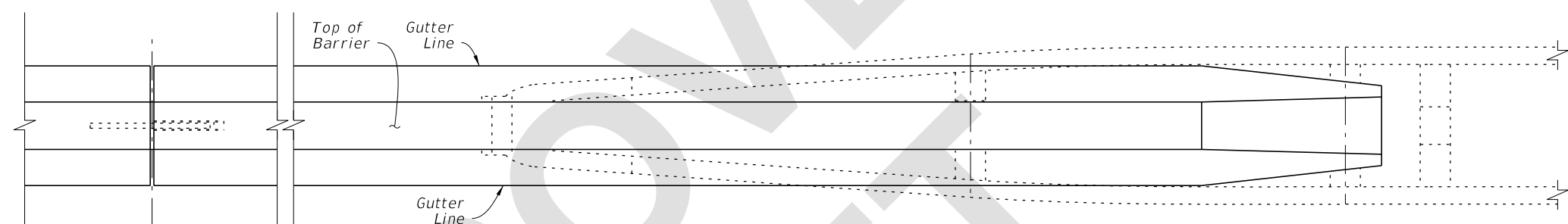
CONCRETE BARRIER

INDEX  
521-001

SHEET  
26 of 26



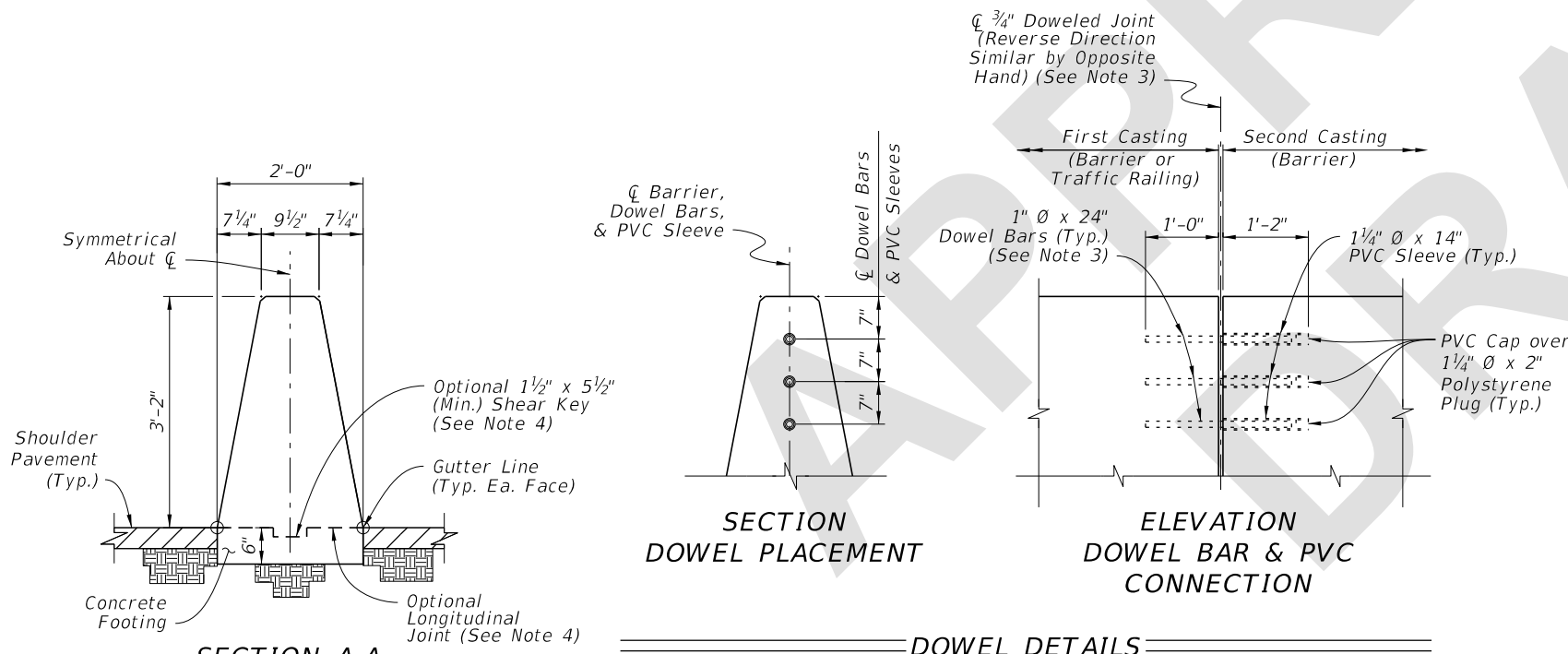
ELEVATION



PLAN

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For the dowel connection into the first casting, the dowel may be cast-in-place for new concrete or placed into a 1 1/8" O x 13" (± 1/2") drilled hole for cured concrete. For drilled holes larger than 1 1/8" O, secure the dowel with adhesive in accordance with Specification 416. No load testing is required.  
  
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SECTION DOWEL PLACEMENT


ELEVATION DOWEL BAR & PVC CONNECTION

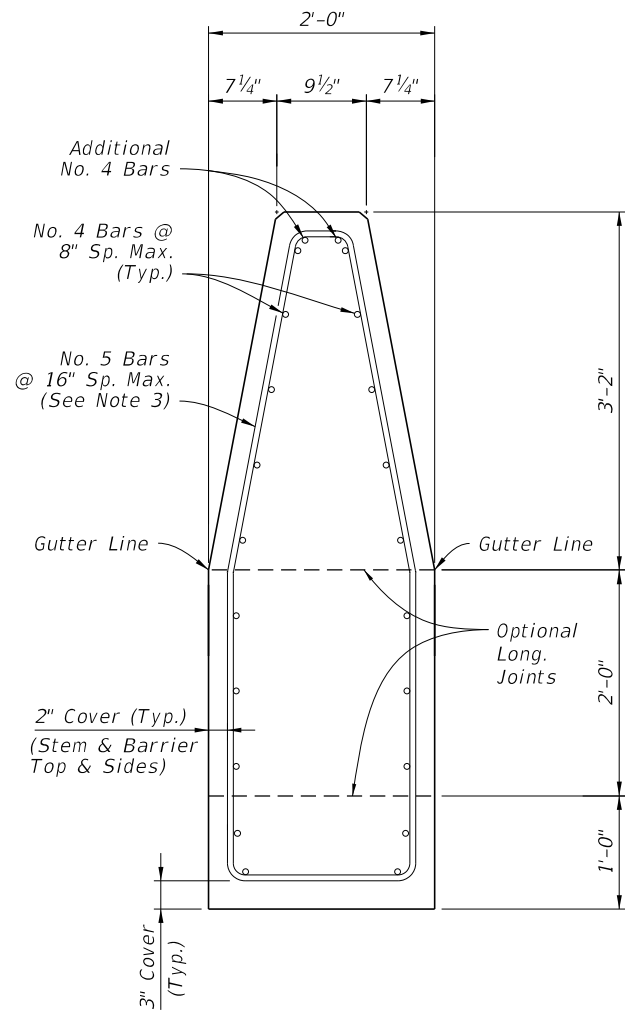
DOWEL DETAILS

**SECTION A-A**  
**38" HEIGHT MEDIAN BARRIER**  
(See Sheet 3 for Steel Reinforcing Details)

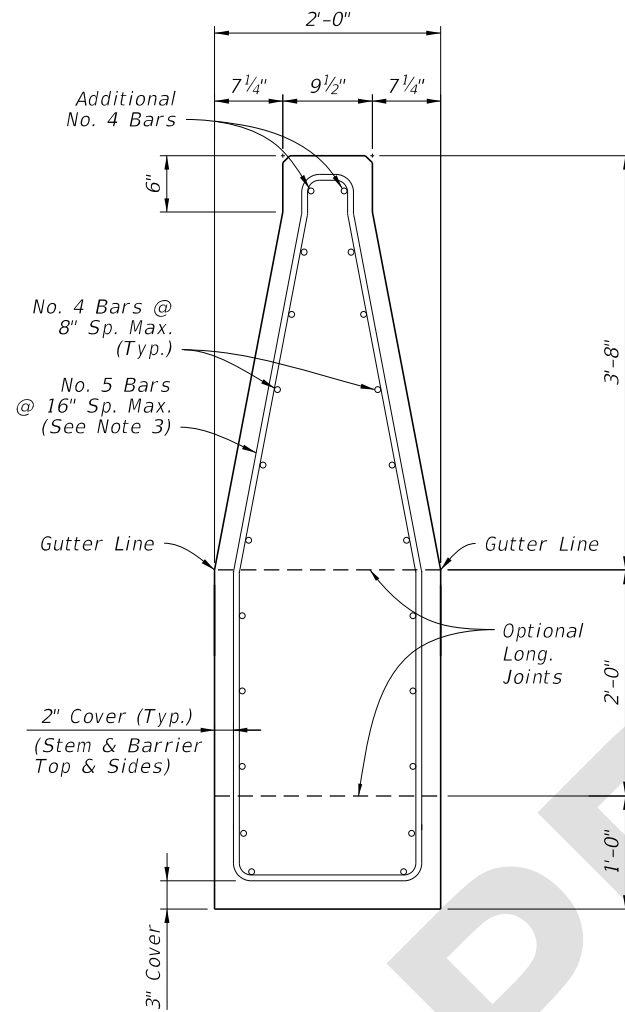
**MEDIAN BARRIER**

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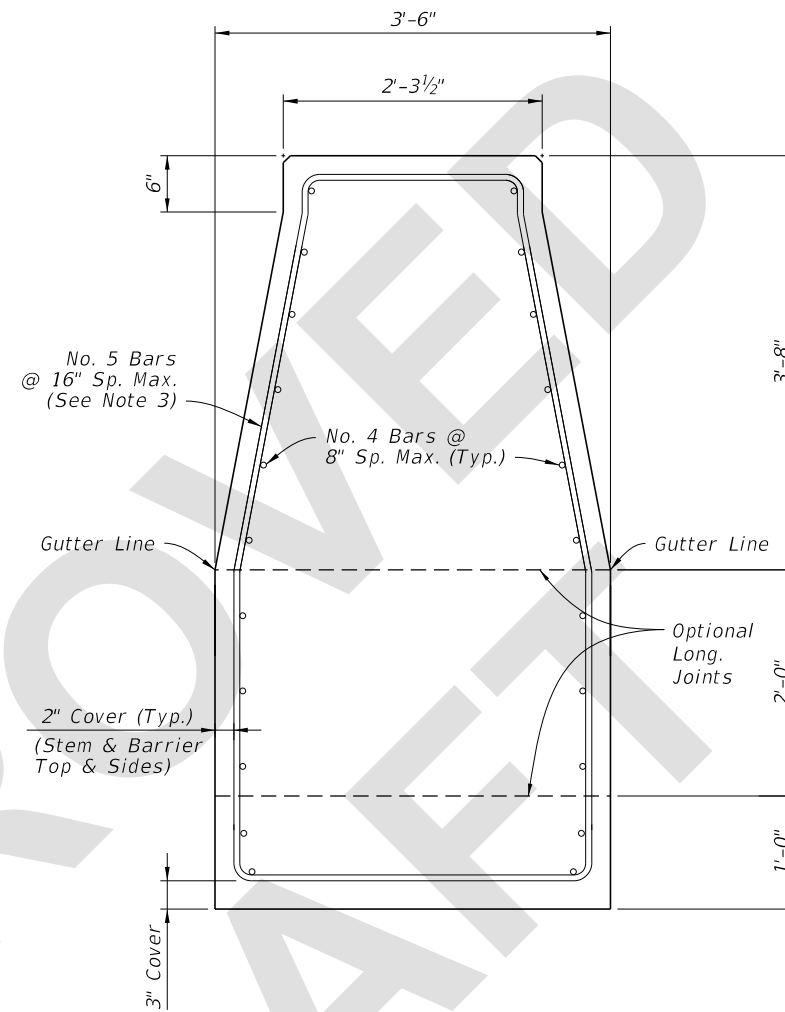
LAST REVISION 11/01/24	REVISION	DESCRIPTION:		FY 2025-26 STANDARD PLANS	CONCRETE BARRIER	INDEX 521-001	SHEET 2 of 26
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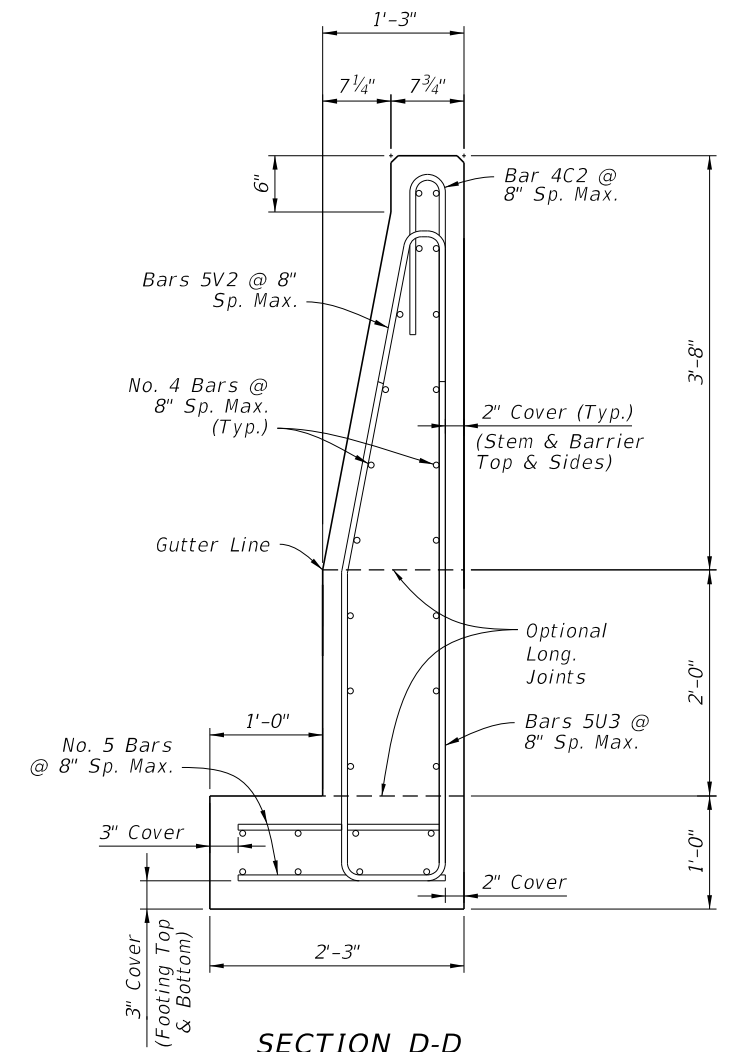
**SECTION A-A**  
**BEGIN HEIGHT**  
**TRANSITION**  
 (show spliced bars)



**SECTION B-B**  
**END HEIGHT TRANSITION**  
**BEGIN WIDTH TRANSITION**



**SECTION C-C**  
**END WIDTH TRANSITION**  
**BEGIN SPLIT SECTIONS**



**SECTION D-D**  
**44" HEIGHT SPLIT SECTION**  
 (Opposite Side of Median  
 Similar by Opposite Hand)


Concrete Qty. = 0.30 CY/FT  
 Steel Qty. = 52.6 LB/FT

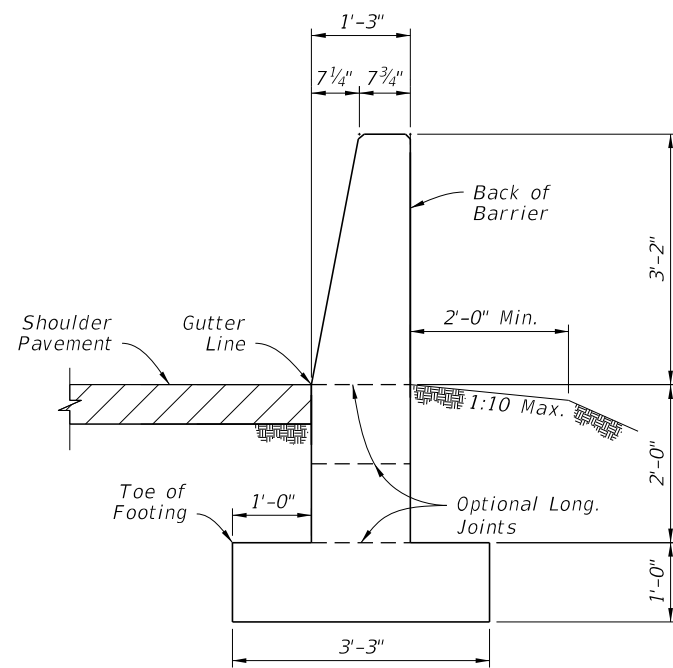
**NOTES:**

1. GENERAL: Work with the Plan and Elevation views on Sheet 10.
2. LONGITUDINAL REINFORCING CONTINUITY: Maintain all longitudinal steel reinforcing shown in Section C-C continuously into Section D-D (spliced where required). The additional longitudinal reinforcing shown in Section D-D does not require continuity into Section C-C, and it starts 3" from the construction joint or edge of concrete per the details on Sheet 10.
3. STIRRUP BARS: For the vertical and transverse reinforcement requirement shown, bar bending diagrams are not provided due to varying section dimensions. Use any combination of spliced reinforcing steel to position the reinforcement with the same cover, spacing, continuity, and equivalent strength shown herein, as approved by the Engineer.

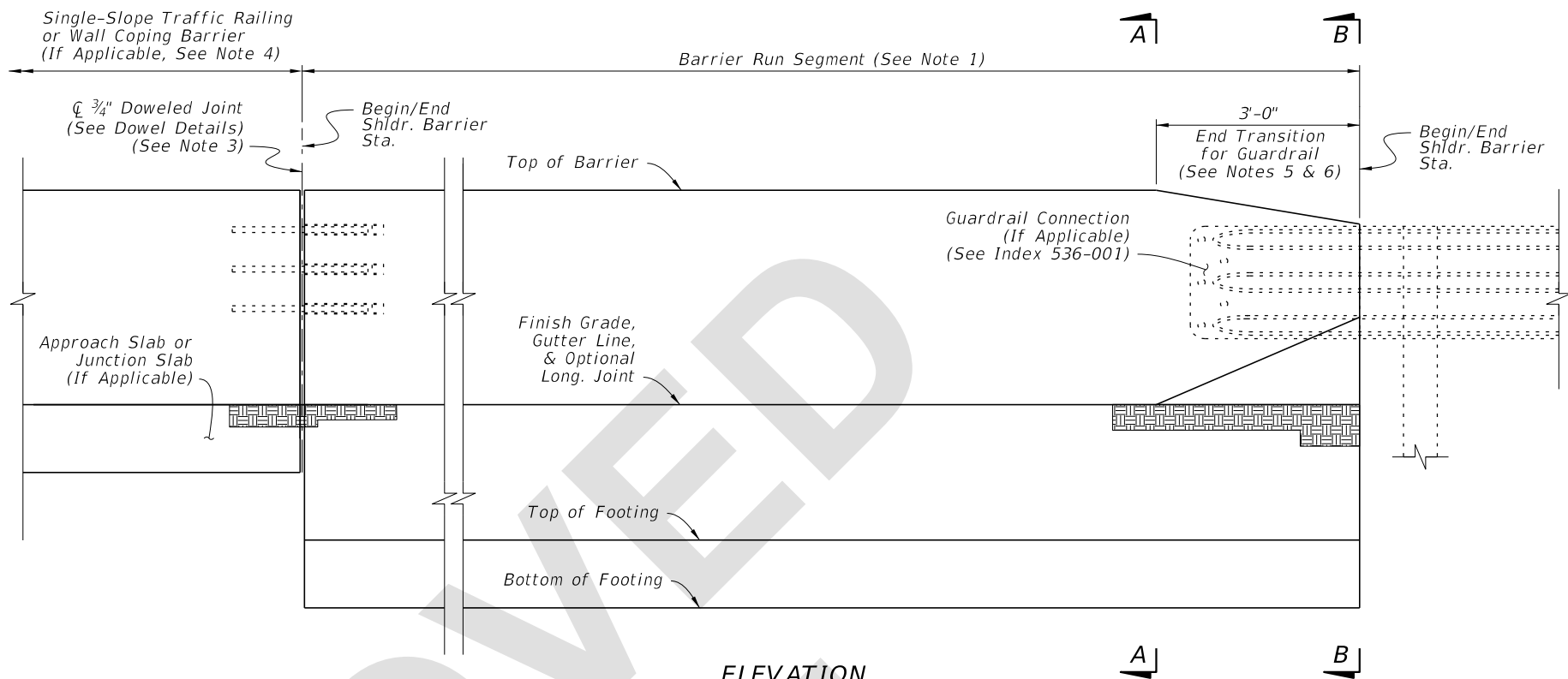
**MEDIAN BARRIER - 44" HEIGHT**  
**SPLIT SECTION FOR PIER SHIELDING - DETAILS**

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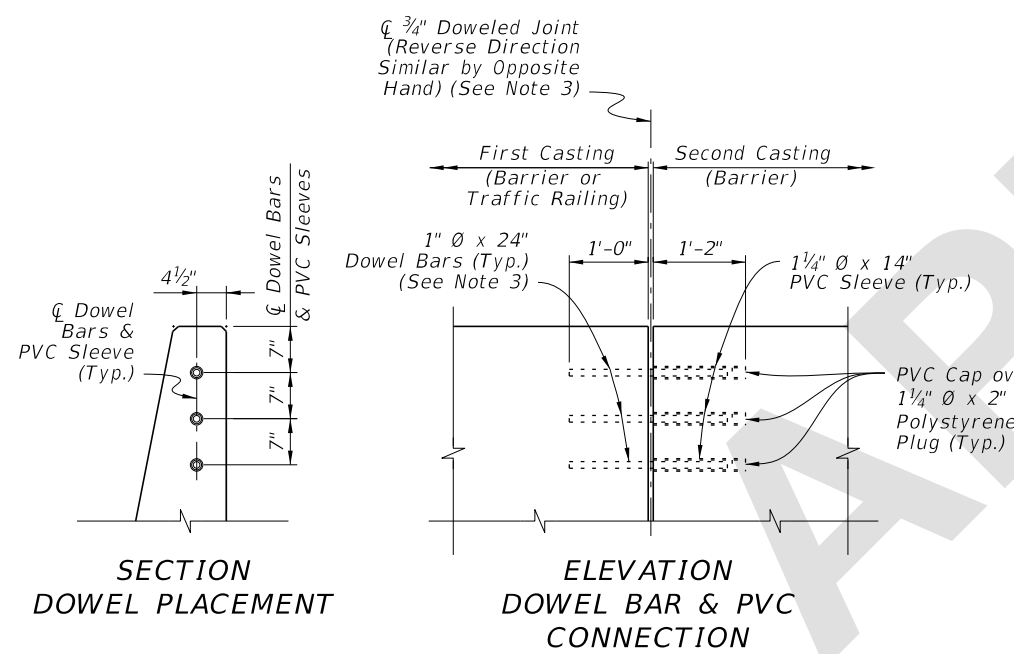
LAST REVISION 11/01/24	DESCRIPTION:	 <b>FY 2025-26</b> <b>STANDARD PLANS</b>	<b>CONCRETE BARRIER</b>	INDEX	SHEET
				521-001	11 of 26



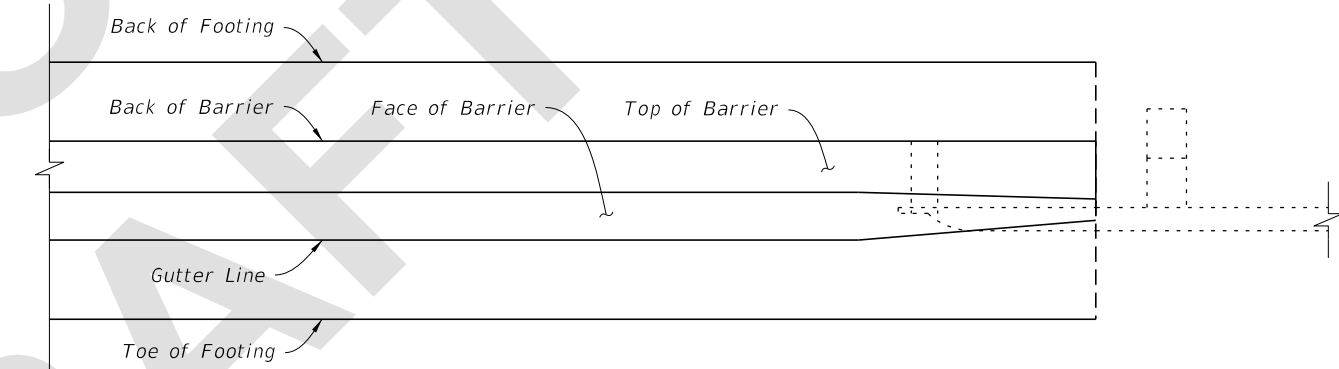
**SECTION A-A**  
**38" HEIGHT SHOULDER BARRIER**  
 (See Sheet 14 for  
 Reinforcing Steel Details)



**ELEVATION**



**DOWEL DETAILS**



**PLAN**

**SHOULDER BARRIER NOTES:**

- BARRIER RUN SEGMENT:** Either the 38" Height Shoulder Barrier or the differing Shoulder Barrier sections shown throughout the Index may be placed within this segment as required per the Plans.
- SECTION VIEWS:** For additional Views A-A and B-B, see Sheet 14.
- DOWELED JOINTS:** See the General Notes on Sheet 1 for usage of joint types. Place steel reinforcing with a longitudinal 3" cover adjacent to the joint face in the barrier. Use ASTM A36 smooth round bars with hot-dip galvanization.  
  
 For the dowel connection into the first casting, the dowel may be cast-in-place for new concrete or placed into a 1 1/8"Ø x 13"(± 1/2") drilled hole for cured concrete. For drilled holes larger than 1 1/8"Ø, secure the dowel with adhesive in accordance with Specification 416. No load testing is required.  
  
 For the dowel connection into the second casting, use a 1 1/4" NPS Schedule 80 PVC pipe with a sealed cap, cast-in-place as shown.
- TRAFFIC RAILING CONNECTIONS:** Align the barrier and Traffic Railing faces and connect with the 3/4" Doweled Joint.
- GUARDRAIL CONNECTIONS:** Connect Guardrail using the Transition Connections to Rigid Barrier per Index 536-001.
- CRASH CUSHION CONNECTIONS:** Connect Crash Cushions per Index 544-001 in conjunction with the 3'-0" End Transition for Guardrail as shown herein.
- FREE ENDS:** When the barrier end does not terminate with a Traffic Railing Connection, Guardrail Connection, or Crash Cushion Connection as called for in the Plans, terminate in accordance with the Free End Reinforcing Note on Sheet 14.

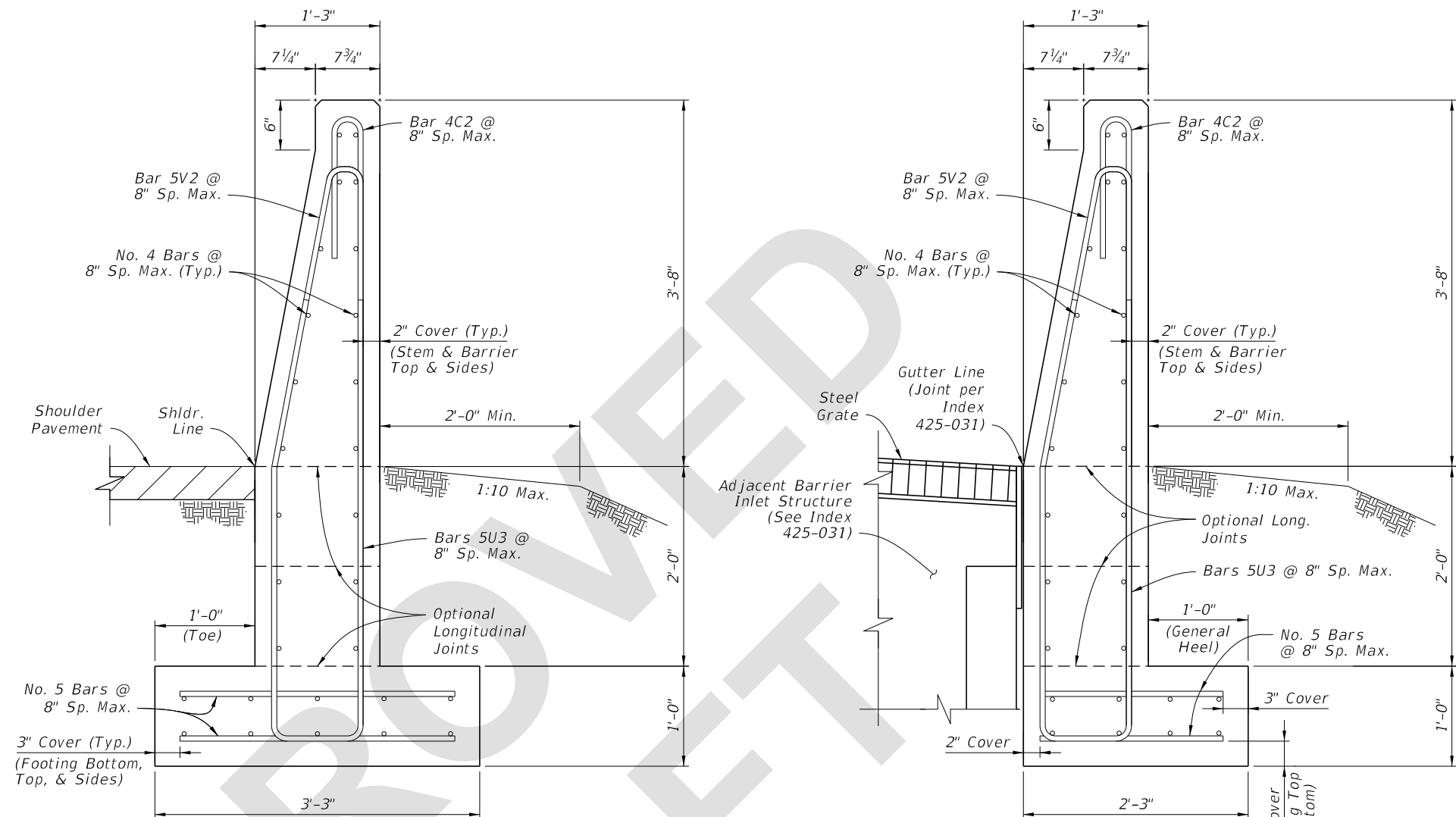
**SHOULDER BARRIER**

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LAST REVISION 11/01/24	REVISION	DESCRIPTION:		FY 2025-26 STANDARD PLANS	CONCRETE BARRIER	INDEX 521-001	SHEET 13 of 26
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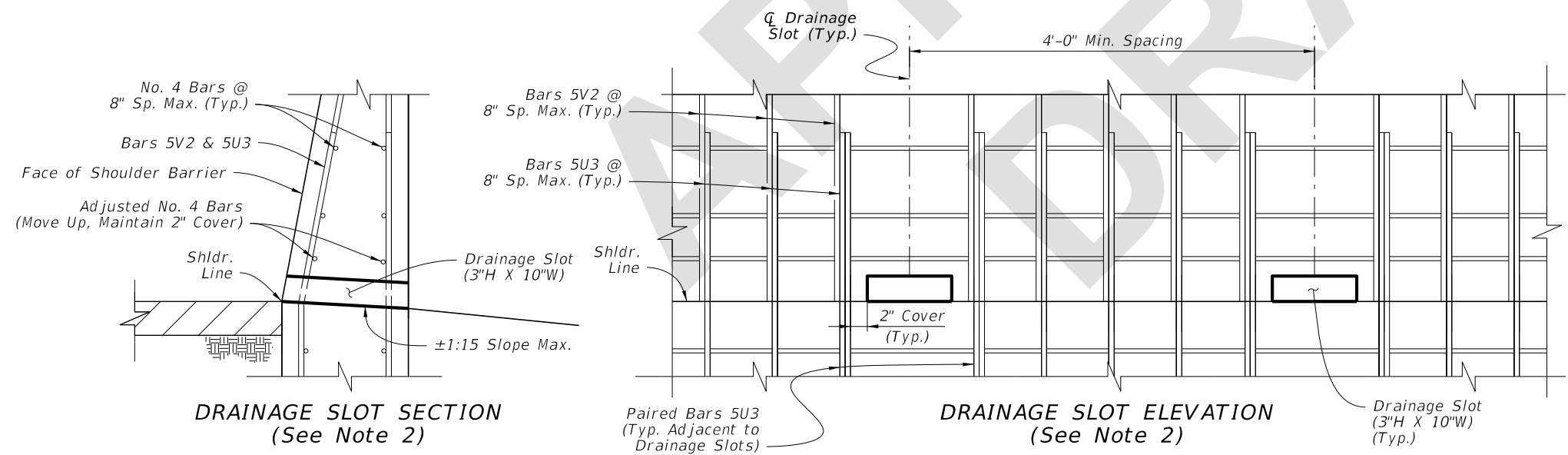
**NOTES:**

1. GENERAL: See the applicable Notes on Sheet 15.
2. DRAINAGE SLOT OPTION: Use only where called for in the Plans. Drainage Slots may be used for all Shoulder Barrier types except for the Trench Footing Section.  
Bars 5V2 and 5U3 may exceed 8 inch spacing to accommodate Drainage Slots as shown. Bars 5U3 require pairing on both sides of slots.



**44" HEIGHT SECTION**  
(For Use Adjacent to Rear-Flush Section on Sheet 18)  
Concrete Qty. = 0.34 CY/FT  
Steel Qty. = 56.8 LB/FT

**44" HEIGHT FRONT-FLUSH SECTION**  
(For Use Adjacent to Rear-Flush Section on Sheet 18, as Required for Barrier Inlets)  
Concrete Qty. = 0.30 CY/FT  
Steel Qty. = 52.6 LB/FT




**DRAINAGE SLOT SECTION**  
(See Note 2)

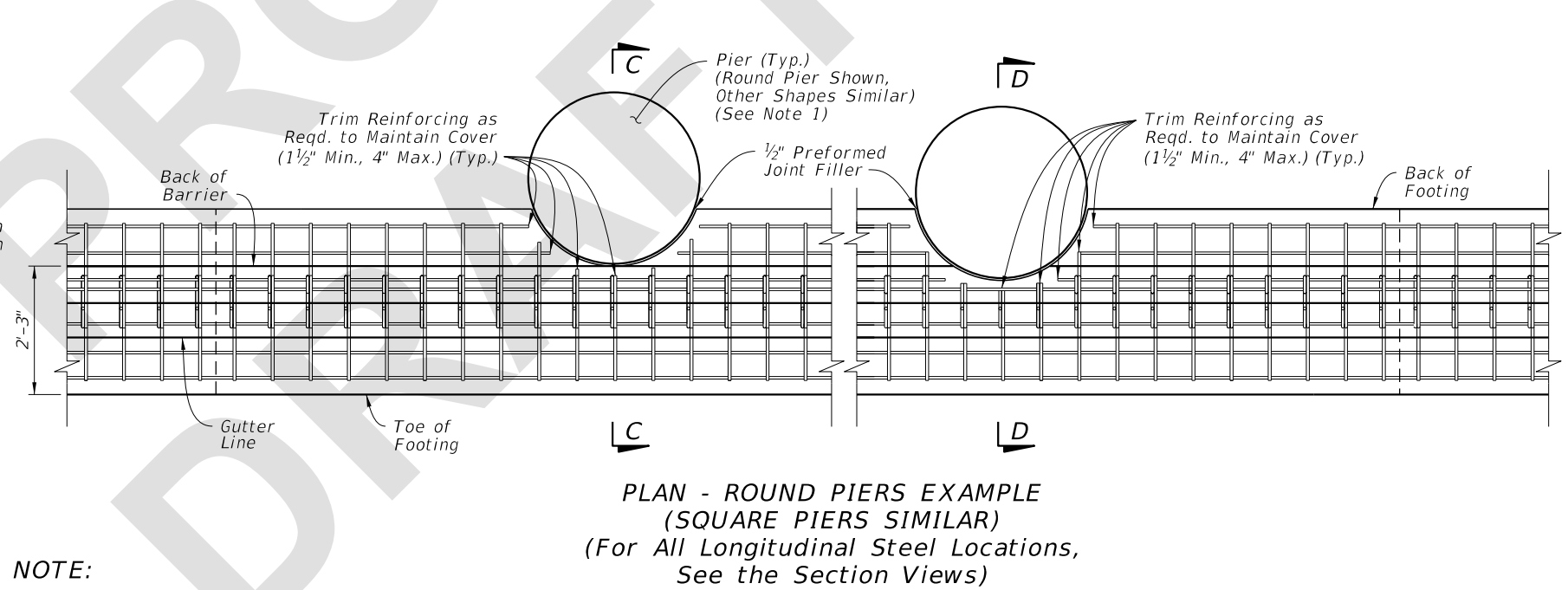
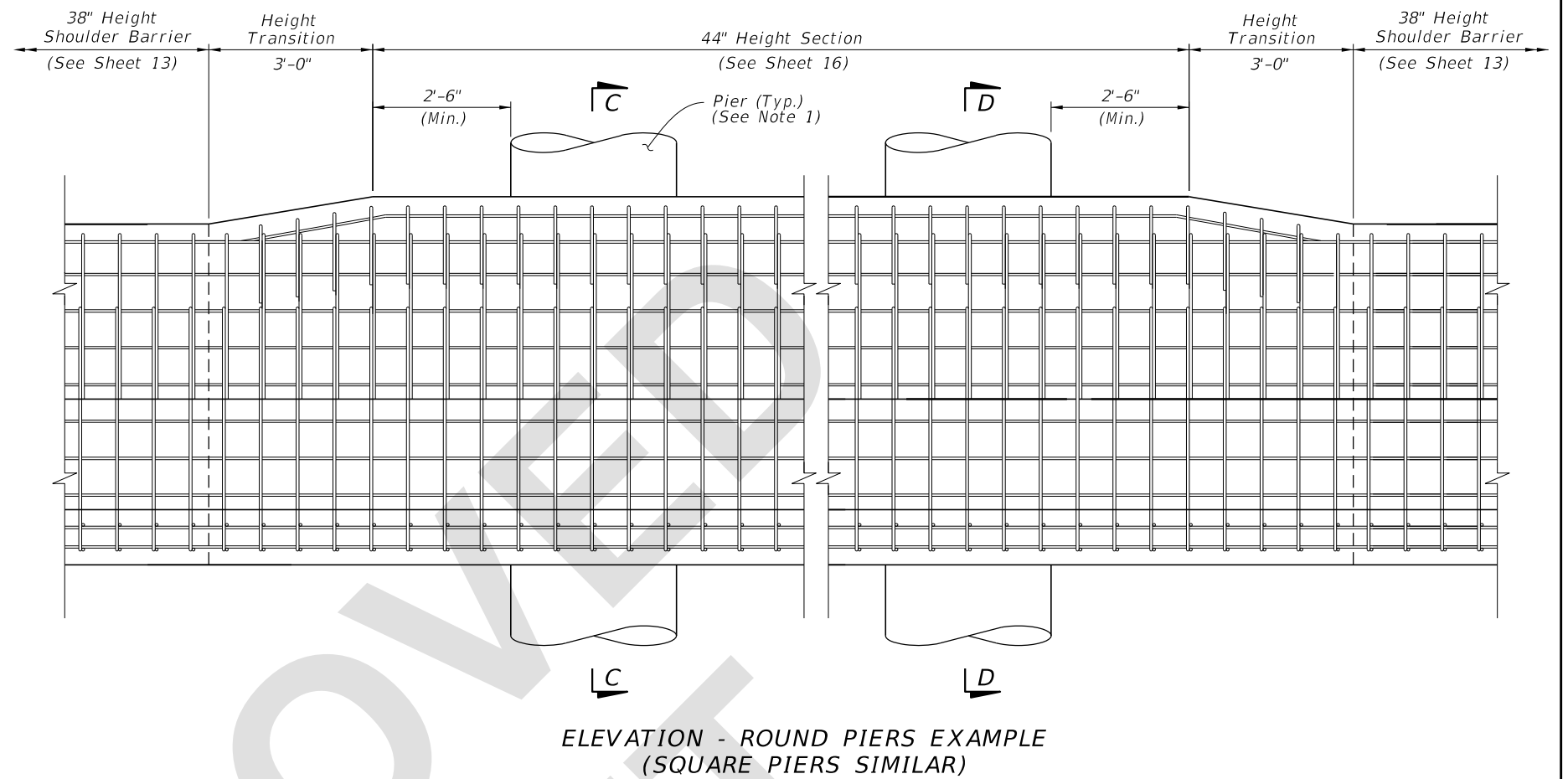
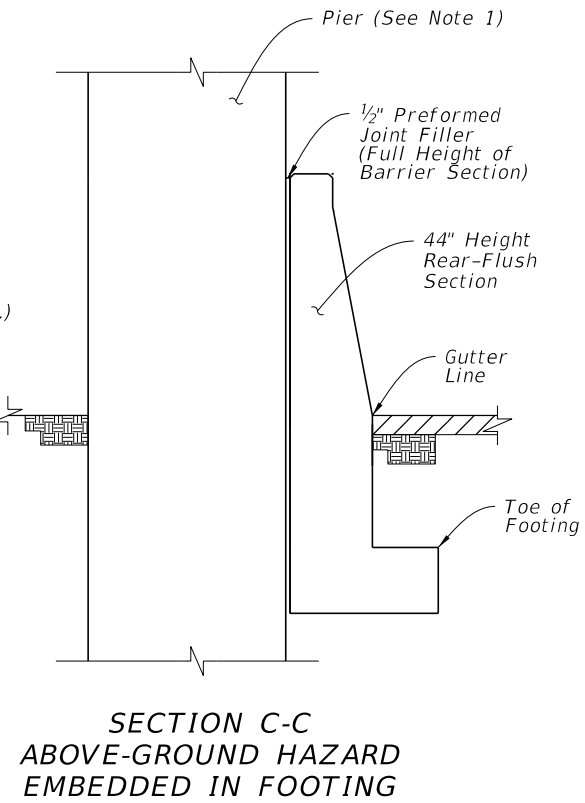
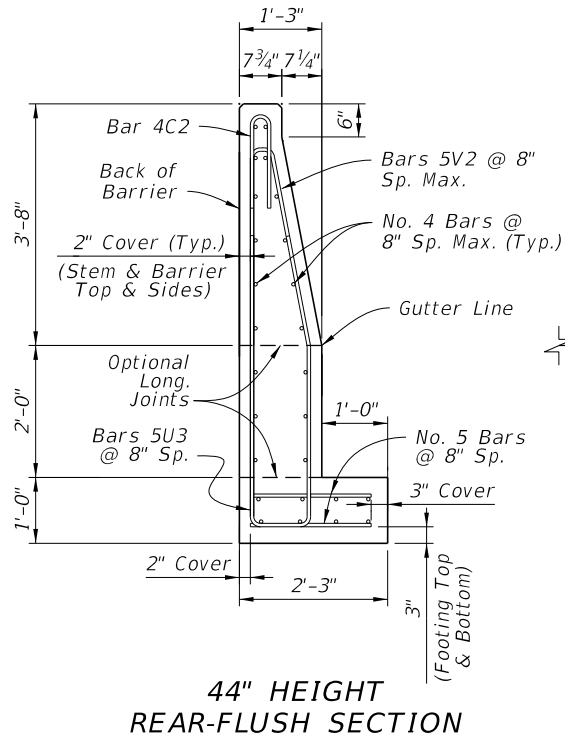
**DRAINAGE SLOT ELEVATION**  
(See Note 2)

**SHOULDER BARRIER - SECTION OPTIONS (CONTINUED)**

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LAST REVISION 11/01/24	REVISION	DESCRIPTION:	 FY 2025-26 STANDARD PLANS	CONCRETE BARRIER	INDEX 521-001	SHEET 16 of 26
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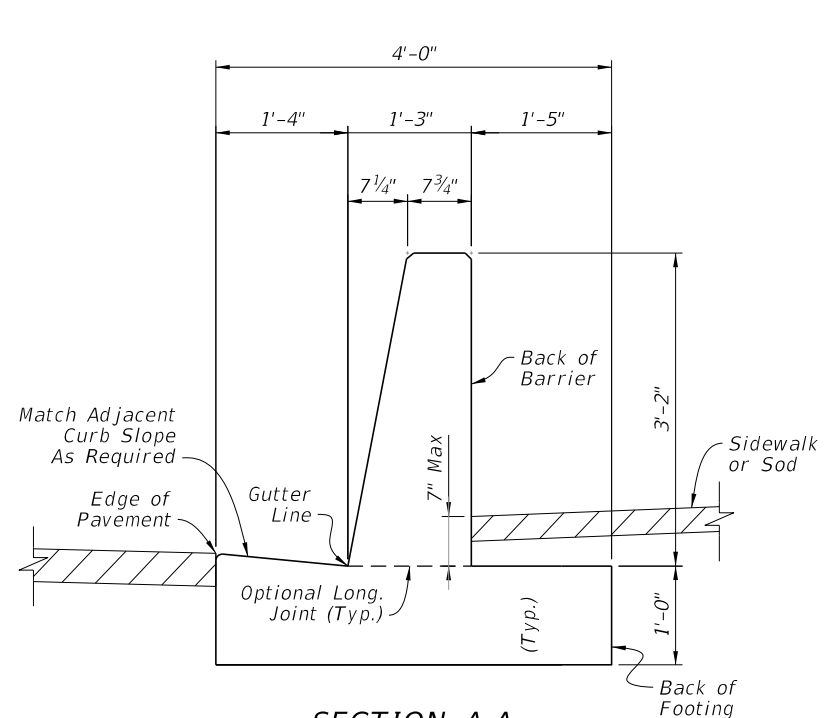
**NOTE:**  
 1. PIERS: The piers shown herein are example shapes only; see the Plans for the project-specific dimensions. The details shown herein are only for use when piers do not require protection per the AASHTO LRFD requirements. For piers requiring protection, see Index 521-002.

**SHOULDER BARRIER - 44" HEIGHT REAR-FLUSH SECTION FOR REDUCED SETBACK PIER SHIELDING**

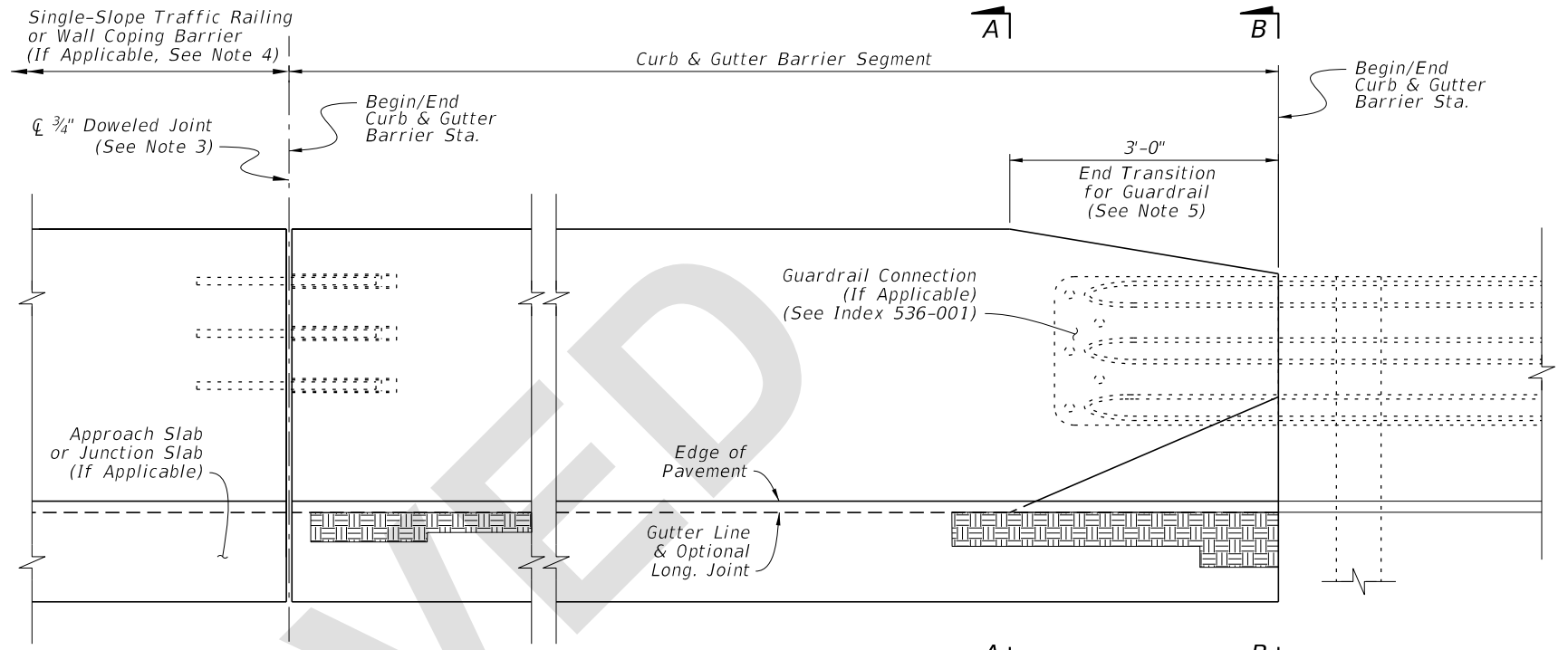
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LAST REVISION 11/01/24	DESCRIPTION:		FY 2025-26 STANDARD PLANS	CONCRETE BARRIER	INDEX 521-001	SHEET 18 of 26

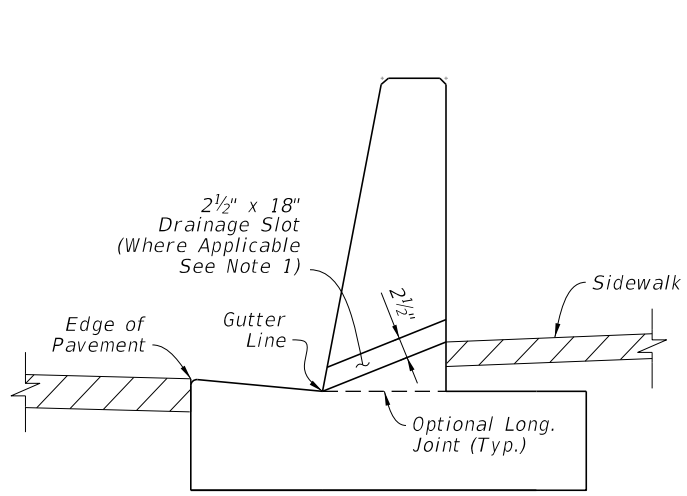




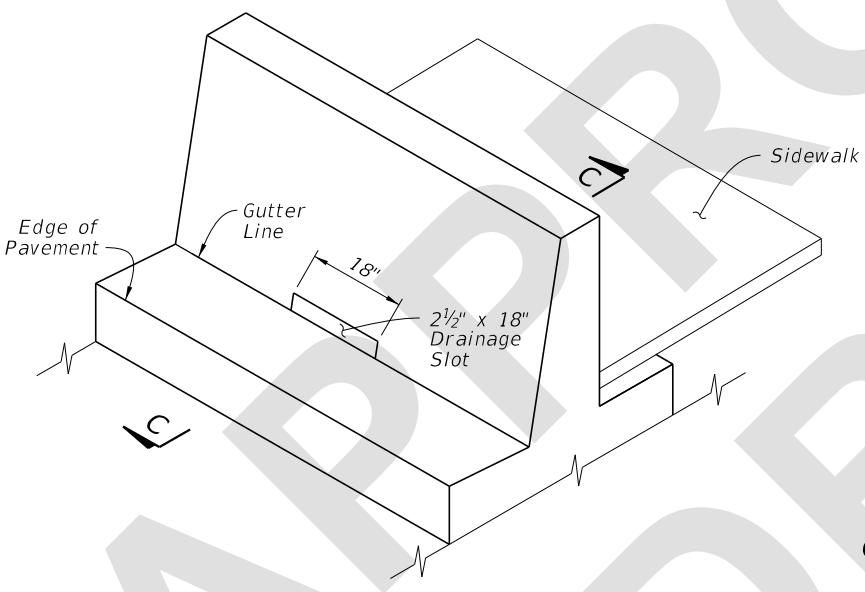
**SECTION A-A  
CURB & GUTTER  
BARRIER**



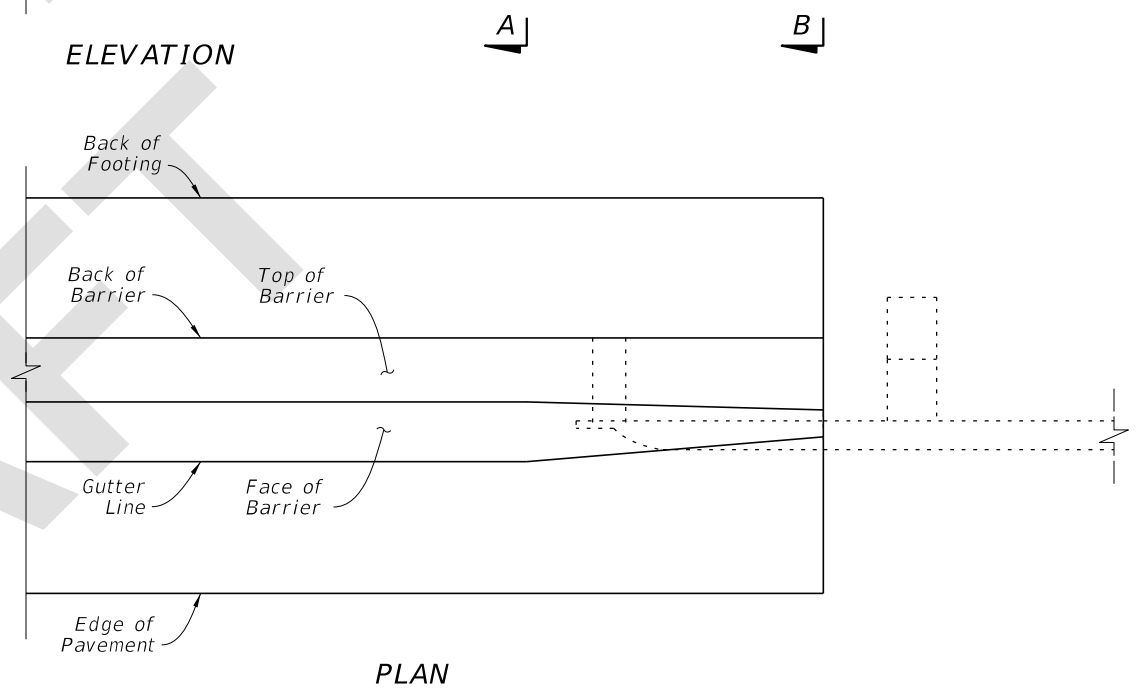
**ELEVATION**



**SECTION C-C  
CURB & GUTTER  
BARRIER WITH  
DRAINAGE SLOT**



**ISOMETRIC VIEW  
CURB GUTTER BARRIER  
WITH DRAINAGE SLOT**



**PLAN**

**CURB AND GUTTER BARRIER NOTES:**

- SECTION VIEWS: For additional Views A-A and B-B, see Sheet 21.
- EXPANSION JOINTS: Place 1/2" width transverse expansion joints through the barrier and footing spaced at 100-foot maximum intervals. On both sides of each joint, use the Free End Reinforcing bar spacing per Sheet 21.
- DOWELED JOINTS: See the General Notes on Sheet 1 for usage of joint types. Where required, install 3/4" Doweled Joints as defined on Sheet 13.
- TRAFFIC RAILING CONNECTIONS: Align the barrier and Traffic Railing faces and connect with the 3/4" Doweled Joint per Sheet 13.
- GUARDRAIL CONNECTIONS: Connect Guardrail using the Transition Connections to Rigid Barrier per Index 536-001 in conjunction with 3'-0" End Transition for Guardrail as shown herein.
- FREE ENDS: When the barrier end does not terminate with a Traffic Railing connection or Guardrail connection as called for in the Plans, terminate the barrier in accordance with the Free End Reinforcing Note on Sheet 21.


**DRAINAGE SLOT NOTES:**

- GENERAL: Place 2 1/2" x 18" Drainage Slots at locations and/or spacing called for in the Plans. The minimum spacing is 20 feet.
- STEEL REINFORCEMENT CONFLICT: When the Drainage Slot encounters a conflict with reinforcing steel, shift or cut the reinforcing steel to provide 2 1/2" (± 1/2") of concrete cover for the reinforcing around the Drainage Slot. If cutting the vertical bars, maintain 8" bar spacing. If shifting the vertical bars, move the bars from the standard 8" spacing location to the closest end of the drainage slot (distributing additional vertical reinforcement evenly on each side of the Drainage Slot).

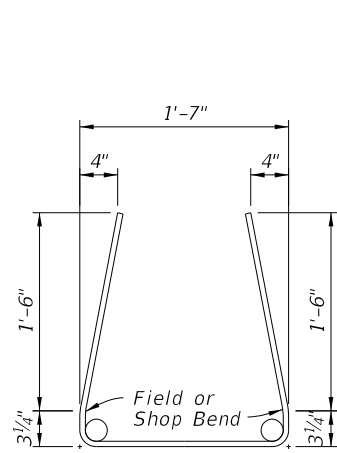
**DRAINAGE SLOT DETAILS**

**CURB AND GUTTER BARRIER**

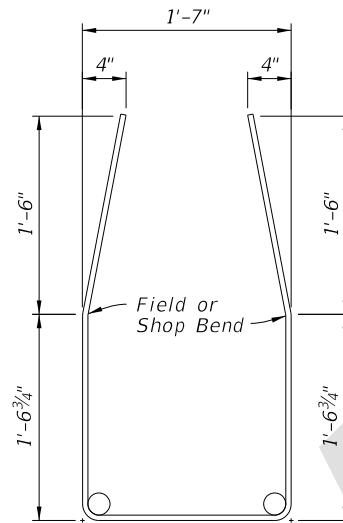
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LAST REVISION 11/01/24	REVISION	DESCRIPTION:		<b>FY 2025-26 STANDARD PLANS</b>	<b>CONCRETE BARRIER</b>	INDEX <b>521-001</b>	SHEET <b>20 of 26</b>
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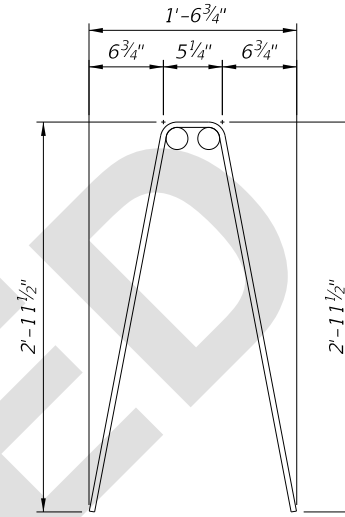
BILL OF REINFORCING STEEL		
MARK	SIZE	LENGTH
C1	4	3'-8"
C2	4	3'-0"
U1	4	5'-1"
U2	4	7'-8"
U3	5	9'-7"
U4	5	5'-9"
V1	4	6'-4"
V2	5	6'-3"
V3	4	5'-10"



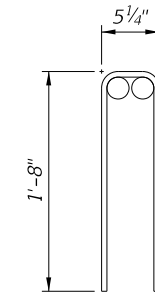
BARS 4U1



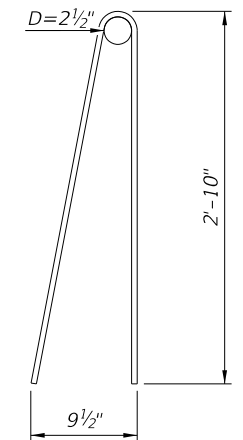
BAR 4U2



BAR 4V1



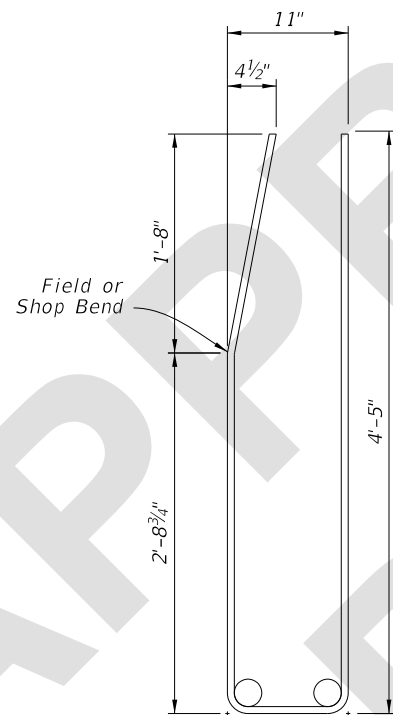
BAR 4C1



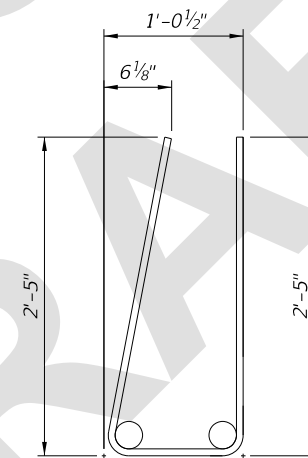
BAR 4V3

**NOTES:**

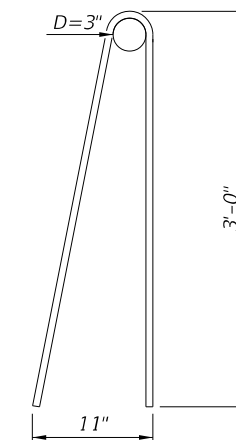
1. Work with the Standard Bar Bending Details per Index 415-001.
2. All bar dimensions in the bending diagrams are out to out.
3. Use standard inner diameters for bar bending unless otherwise shown.
4. Bar 4C2 may be substituted with a number 5 bar with the minimum practical inner diameter. If needed for final placement, skew bars about the vertical axis to ensure concrete cover requirements are met.



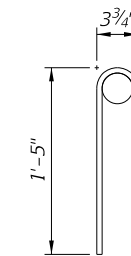
BAR 5U3



BAR 5U4



BAR 5V2




BAR 4C2

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REINFORCING BAR BENDING DIAGRAMS

LAST REVISION 11/01/24	REVISION	DESCRIPTION:	 FY 2025-26 STANDARD PLANS	CONCRETE BARRIER	INDEX 521-001	SHEET 26 of 26
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