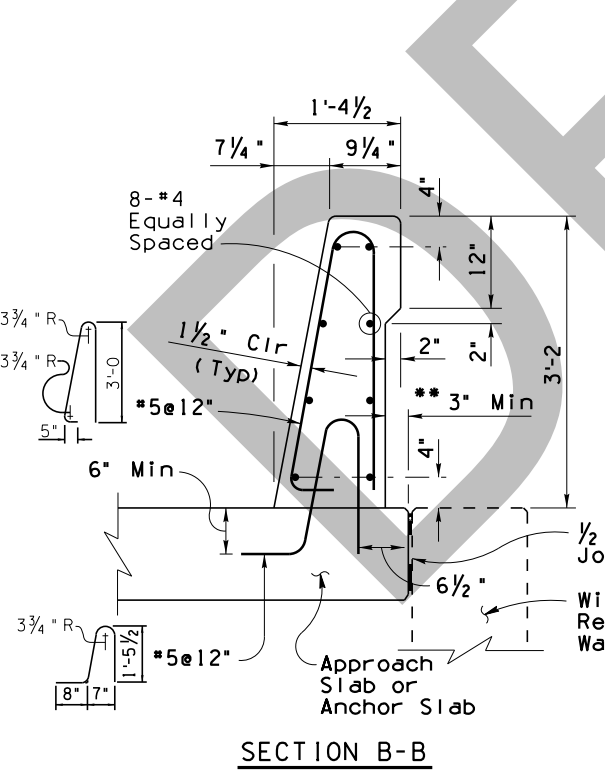
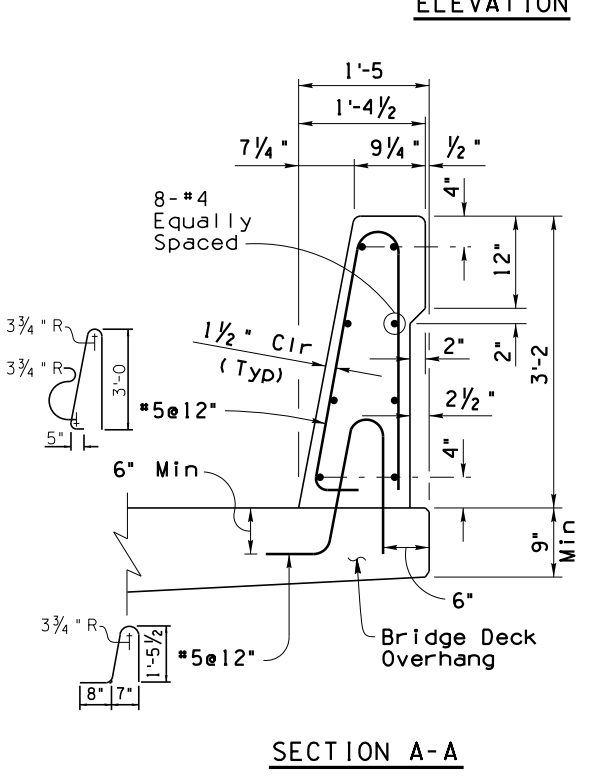
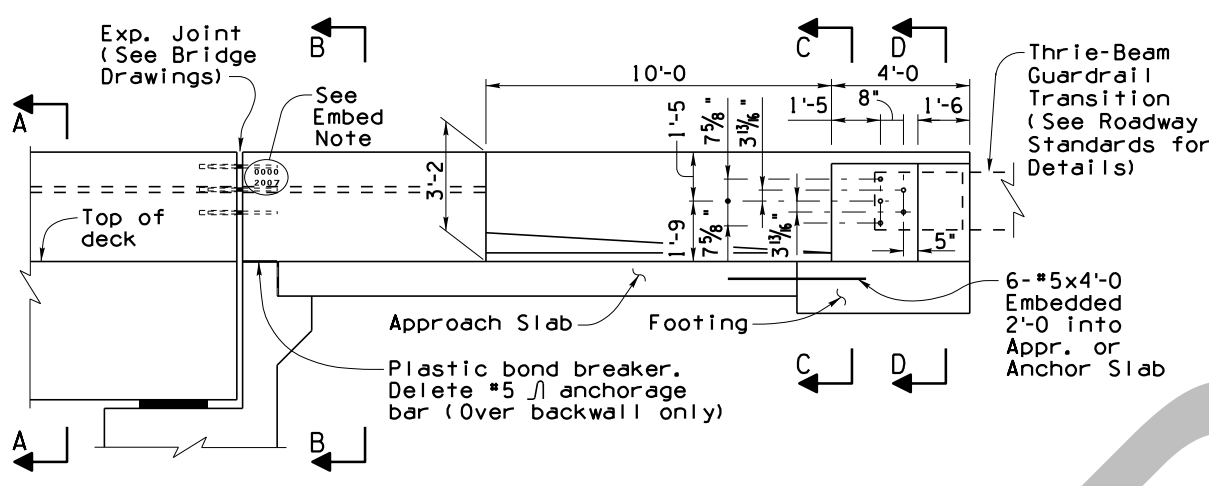
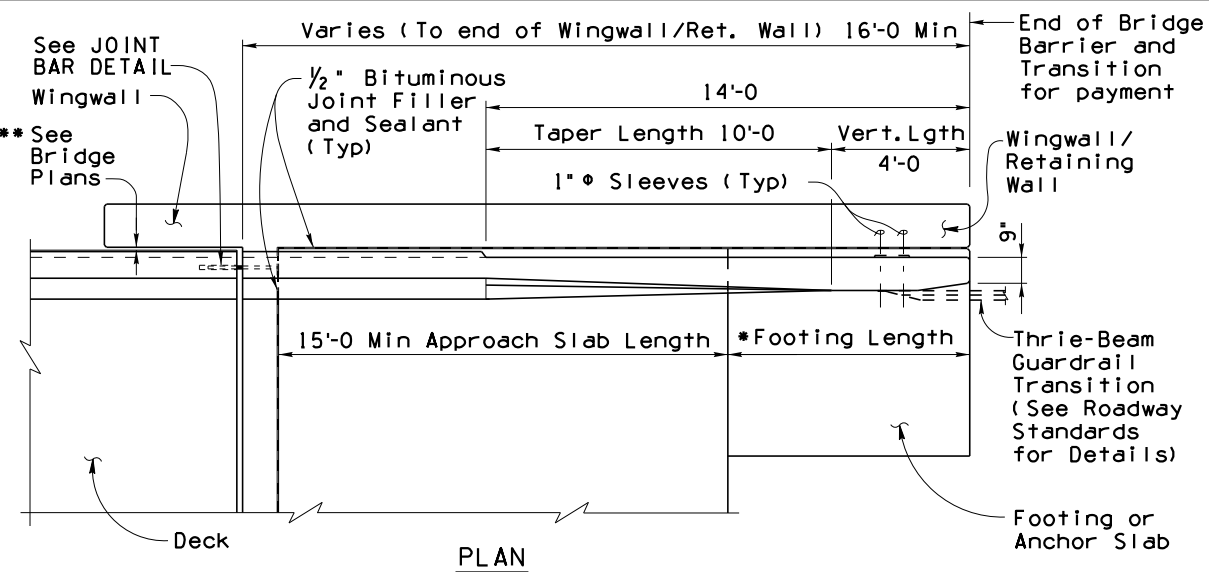
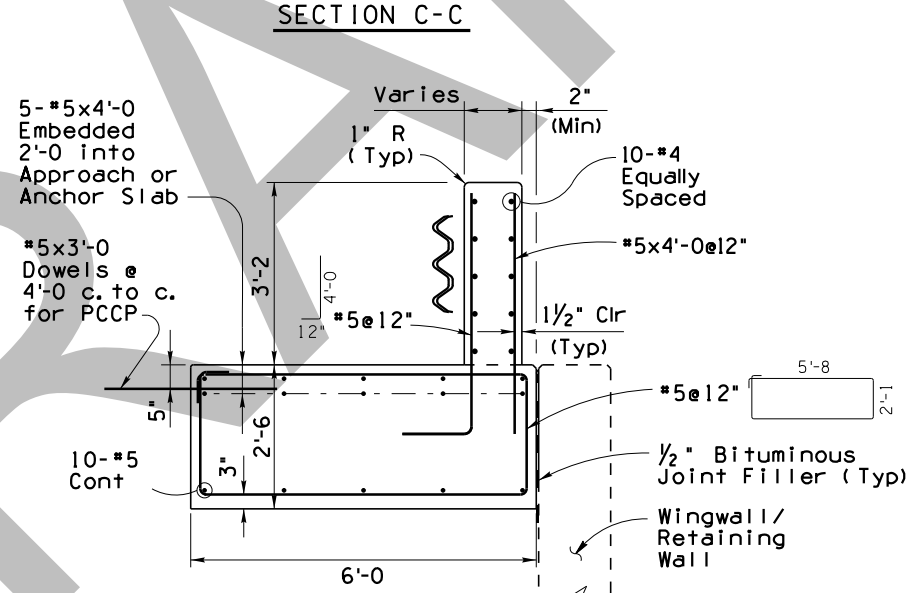
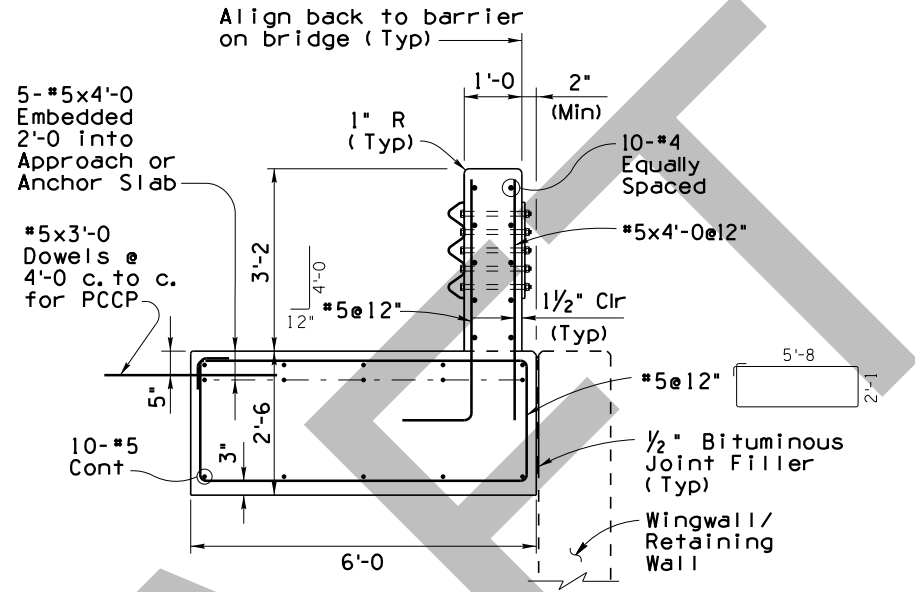


Note to Designer: The information presented in this Standard Drawing has been prepared in accordance with recognized engineering principles and is for general use. It should not be used for specific application without competent professional examination and verification of its suitability and applicability by a licensed professional engineer. Contents within the inner border line shall not be altered.



- * When using barrier on footing beyond the approach slab, the minimum length of the barrier footing shall be 5'-0".
- * When concrete barrier on footing is being used for other applications, the minimum length of barrier on footing shall be 20'-0".



- ** A 1" bituminous joint filler thickness is assumed at the cheek wall. Verify the thickness from the bridge plans.

GENERAL NOTES:
 Construction Specification - Arizona Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition.
 Design Specifications - AASHTO LRFD Bridge Design Specifications, 8th Edition 2017.

This barrier has been evaluated and approved to be of equal strength to barriers with like geometry, which were successfully crash tested to meet MASH 16 requirements for Test Level 4.

Design Loads:
 Dynamic Load (For barrier Design) = 80^k
 Dynamic load is based on NCHRP 20-07(395) MASH Equivalency of NCHRP Report 350 - Approved Bridge Railings.
 Equivalent Static Load (For footing design) = 28^k
 Footing design is based on NCHRP Report 663.

All Concrete shall be Class "S" (f'c = 4000 psi).
 Reinforcing steel shall conform to ASTM Specification A615. All reinforcing shall be furnished as Grade 60. All reinforcing shall be epoxy coated at locations above 4000 foot elevations.

All bends and hooks shall meet the requirements of AASHTO LRFD Article 5.10. All bend dimensions for reinforcing steel shall be out-to-out of bars. All placement dimensions for reinforcing steel shall be to center of bars unless noted otherwise.

All reinforcing steel shall have 2 inch clear unless noted otherwise.

Concrete barriers on continuous superstructures shall have 1/2" bituminous joint filler in open joints over piers.

Embed 1/2" Bridge Number and Year Built, using 1 1/2" w x 2" h number impressions in concrete, located as shown at the approach end of the outside lane.

Anchorage bars are included in the pay item for the barrier (Item No. 6011150).

Omit bridge barrier transition when concrete barrier is continuous beyond the bridge.

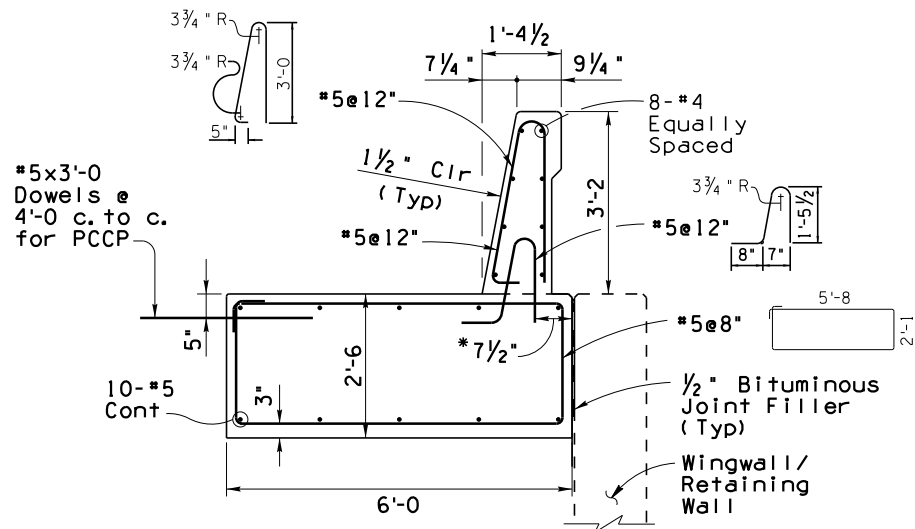
Dimensions shall not be scaled from drawings.

AC OVERLAY NOTE:
 This barrier was designed to allow for the concrete deck to receive an AC overlay with a thickness not exceeding 2 inches.

Item	38" Single Slope Bridge Concrete Barrier and Transition
Item No.	6011150
Measurement	Linear Foot

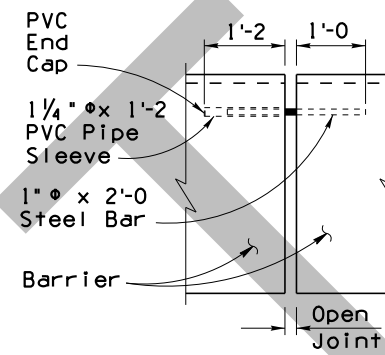
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RECOMMENDED FOR APPROVAL GROUP MANAGER		
APPROVED	38" SINGLE SLOPE BRIDGE CONCRETE BARRIER AND TRANSITION	DATE
STANDARDS COMMITTEE APPROVED FOR DISTRIBUTION		

Note to Designer:
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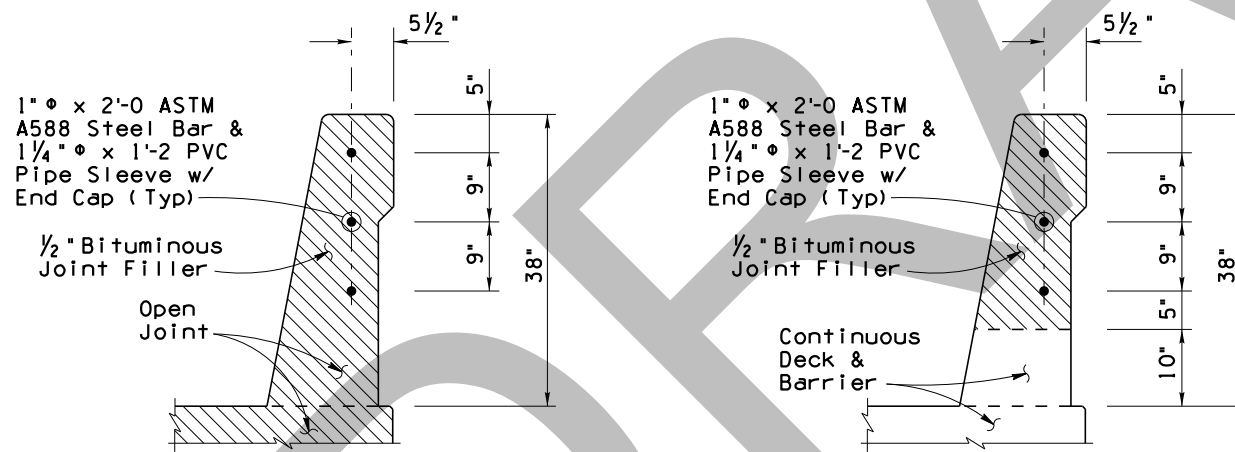


SECTION
Continuous Barrier With Footing

*Varies at taper length

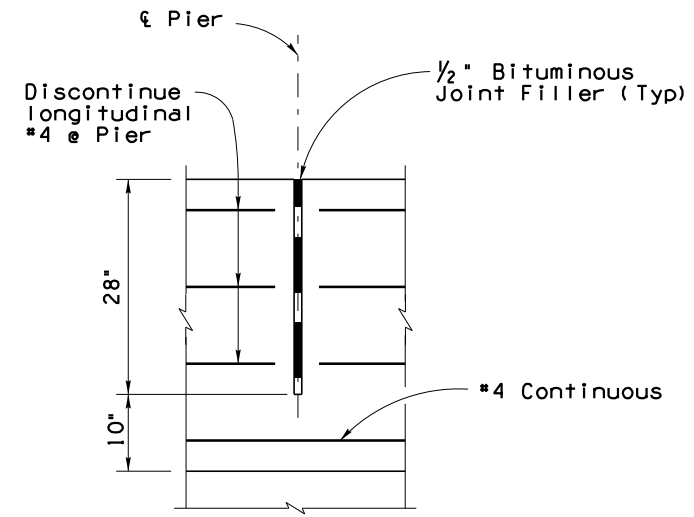


OPEN JOINT BAR DETAIL



OPEN JOINT DETAIL
At Expansion Joints

OPEN JOINT DETAIL
Over Continuous Piers

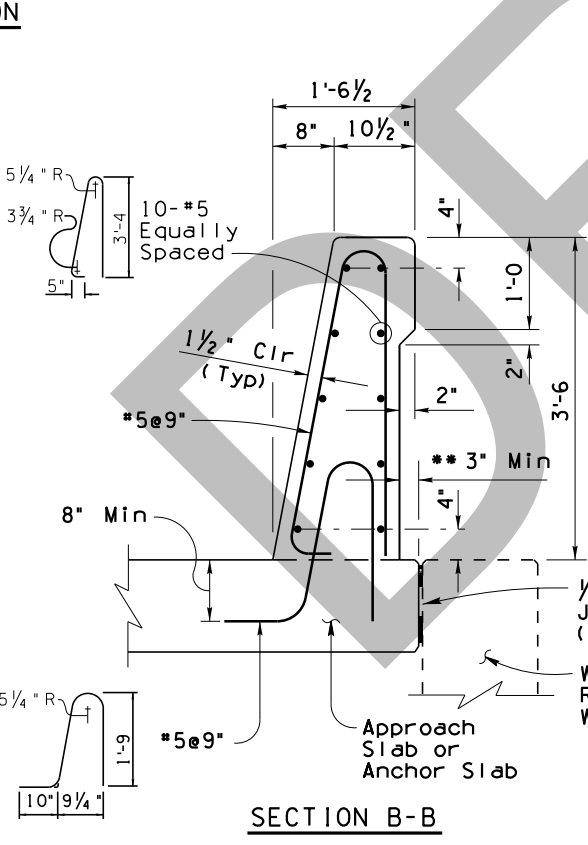
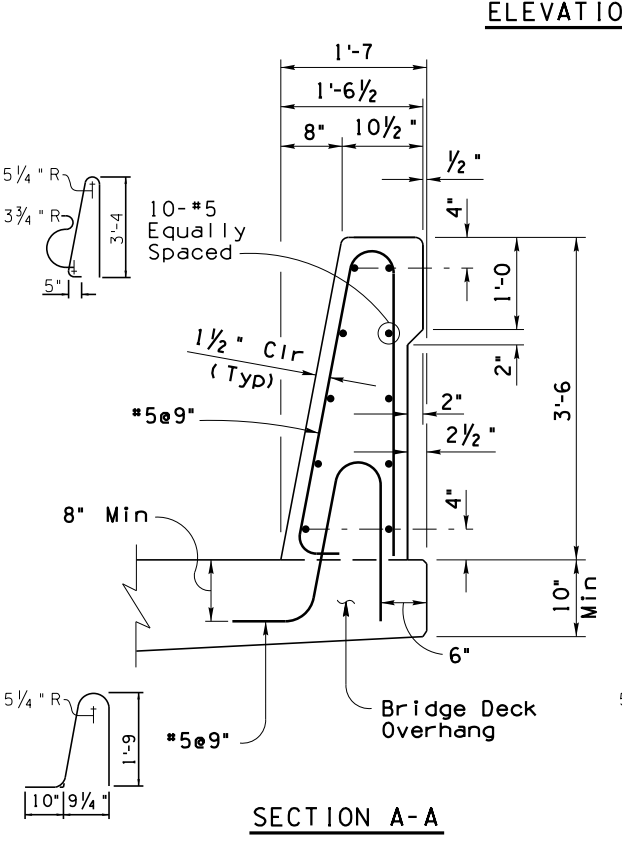
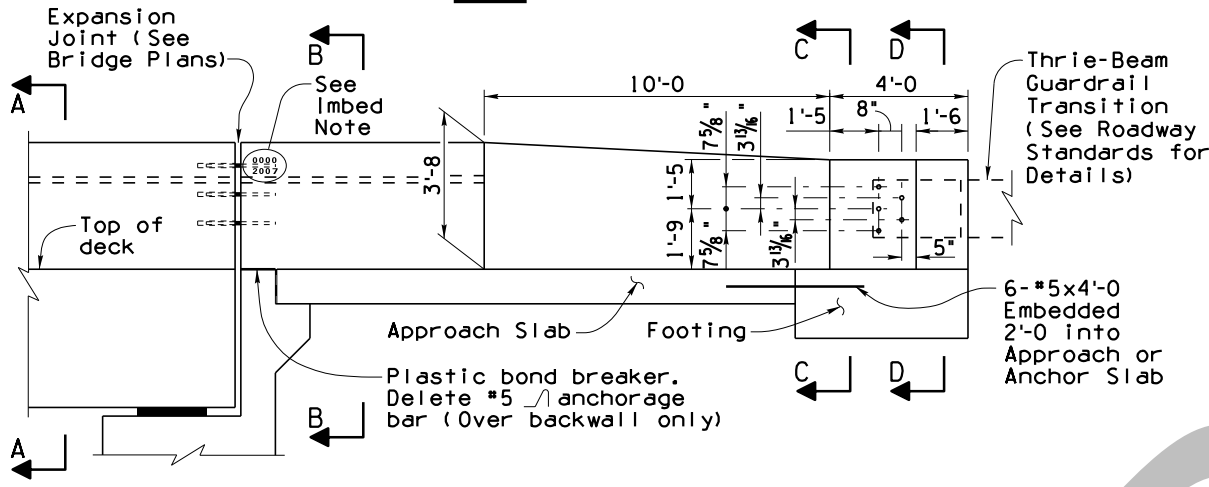
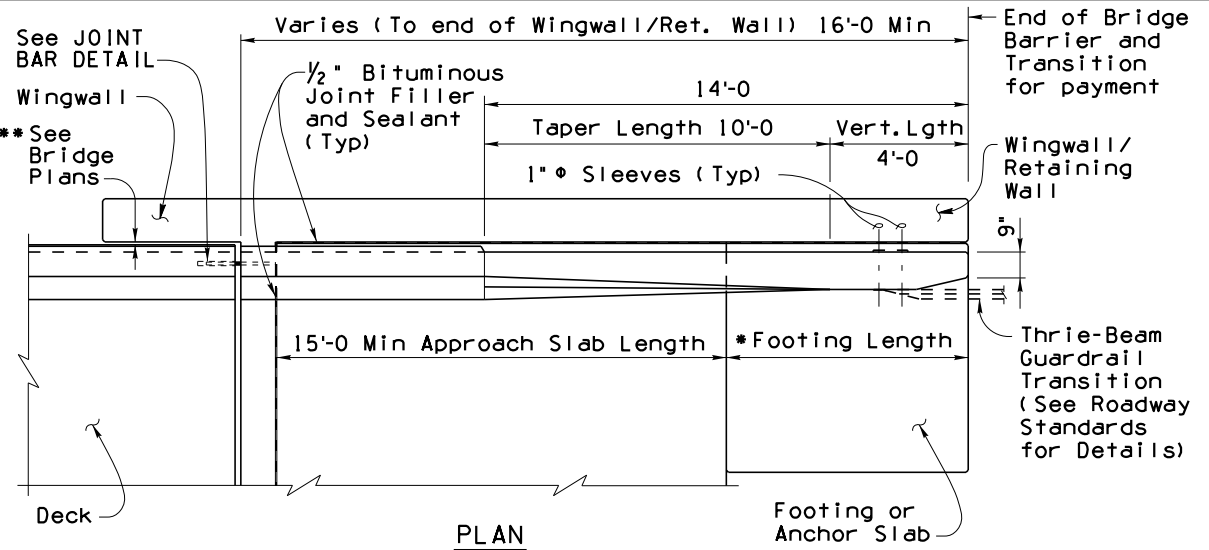


OPEN JOINT SECTION
AT CONTINUOUS PIERS ONLY

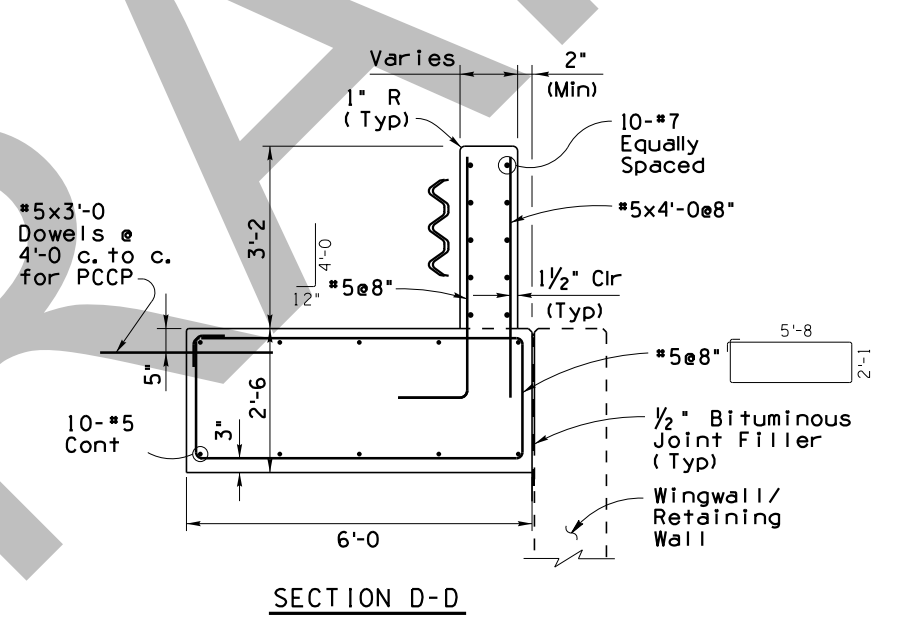
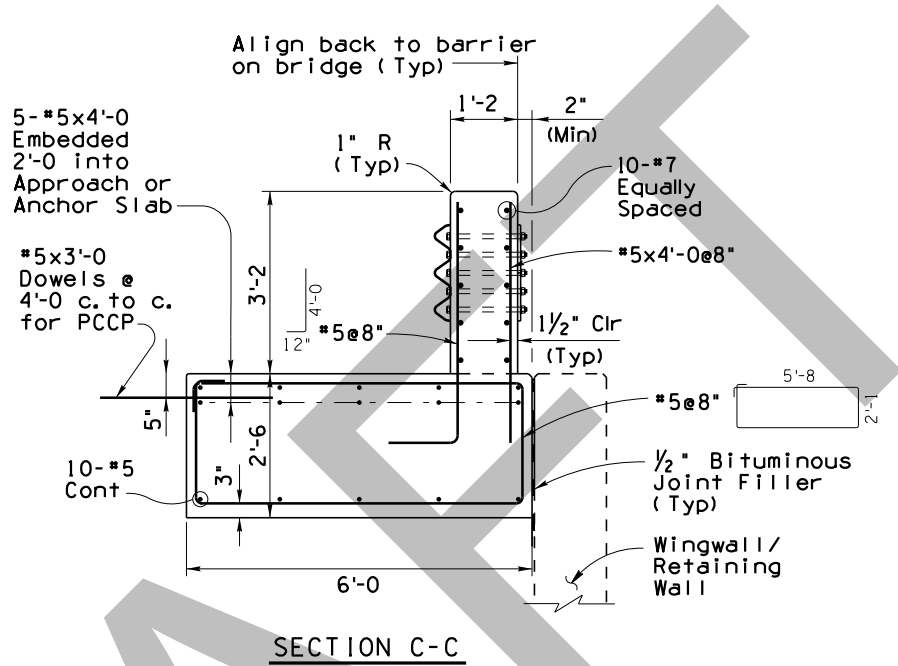
12/17
 PRIOR DISTRIBUTION DATE

STANDARDS ENGINEER	ARIZONA DEPARTMENT OF TRANSPORTATION INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION BRIDGE GROUP STANDARD DRAWING	DRAWING NO.
RECOMMENDED FOR APPROVAL GROUP MANAGER		
APPROVED	38" SINGLE SLOPE BRIDGE CONCRETE BARRIER AND TRANSITION	DATE
STANDARDS COMMITTEE APPROVED FOR DISTRIBUTION		

Note to Designer: The information presented in this Standard Drawing has been prepared in accordance with recognized engineering principles and is for general use. It should not be used for specific application without competent professional examination and verification of its suitability and applicability by a licensed professional engineer. Contents within the inner border line shall not be altered.



- * When using barrier on footing beyond the approach slab, the minimum length of the barrier footing shall be 5'-0.
- * When concrete barrier on footing is being used for other applications, the minimum length of barrier on footing shall be 20'-0.



** A 1" bituminous joint filler thickness is assumed at the cheek wall. Verify the thickness from the bridge plans.

GENERAL NOTES:

Construction Specification - Arizona Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition.
 Design Specifications - AASHTO LRFD Bridge Design Specifications, 8th Edition 2017.

This barrier has been evaluated and approved to be of equal strength to barriers with like geometry, which were successfully crash tested to meet MASH 16 requirements for Test Level 5.

Design Loads:
 Dynamic Load (For barrier Design) = 160^k
 Dynamic load is based on NCHRP 20-07(395) MASH Equivalency of NCHRP Report 350 - Approved Bridge Railings.
 Equivalent Static Load (For footing design) = 28^k
 Footing design is based on NCHRP Report 663.

All Concrete shall be Class "S" (f'c = 4000 psi).

Reinforcing steel shall conform to ASTM Specification A615. All reinforcing shall be furnished as Grade 60. All reinforcing shall be epoxy coated at locations above 4000 foot elevations.

All bends and hooks shall meet the requirements of AASHTO LRFD Article 5.10. All bend dimensions for reinforcing steel shall be out-to-out of bars. All placement dimensions for reinforcing steel shall be to center of bars unless noted otherwise.

All reinforcing steel shall have 2 inch clear unless noted otherwise.

Concrete barriers on continuous superstructures shall have 1/2" bituminous joint filler in open joints over piers.

Embed 1/2" w x 2" h number impressions in concrete, located as shown at the approach end of the outside lane.

Anchorage bars are included in the pay item for the barrier (Item No. 6011151).

Omit bridge barrier transition when concrete barrier is continuous beyond the bridge.

Dimensions shall not be scaled from drawings.

AC OVERLAY NOTE:

No AC overlay will be allowed on the bridge deck when the 42" single slope concrete barrier is used.

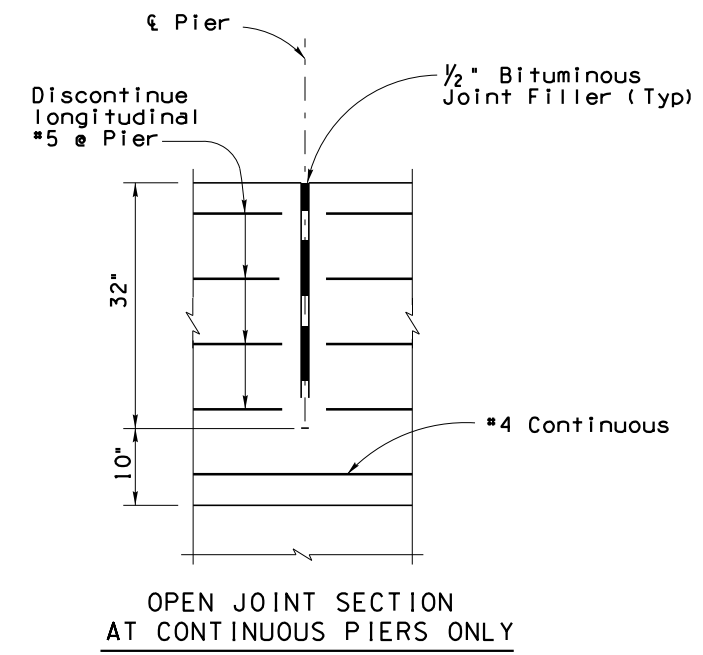
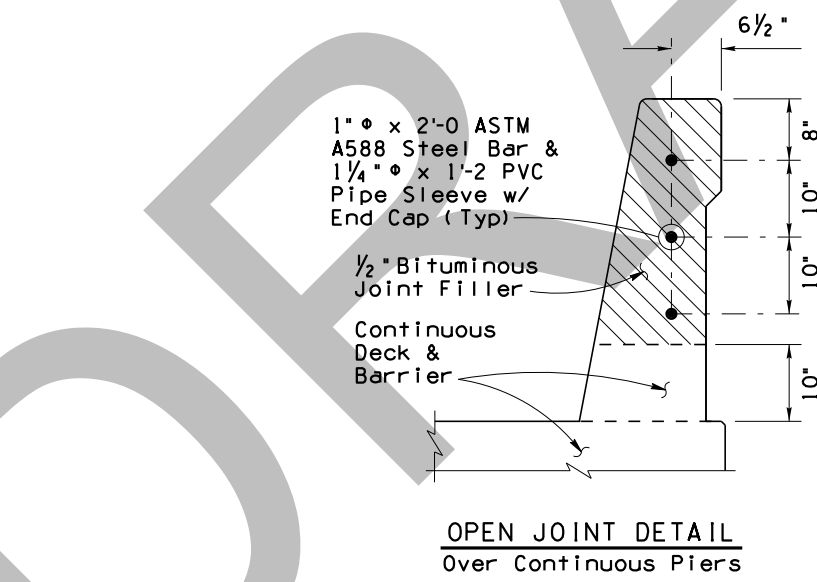
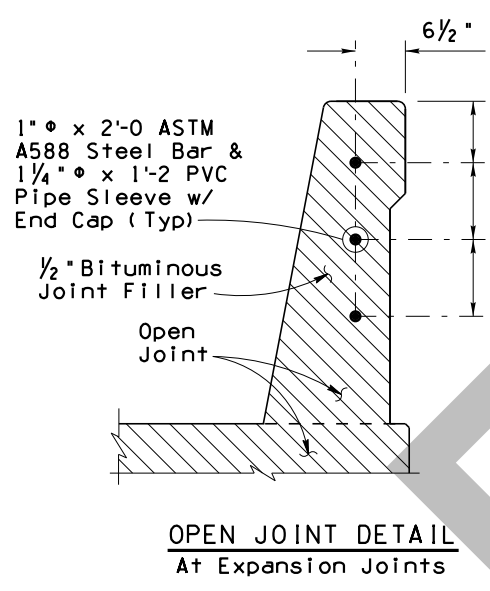
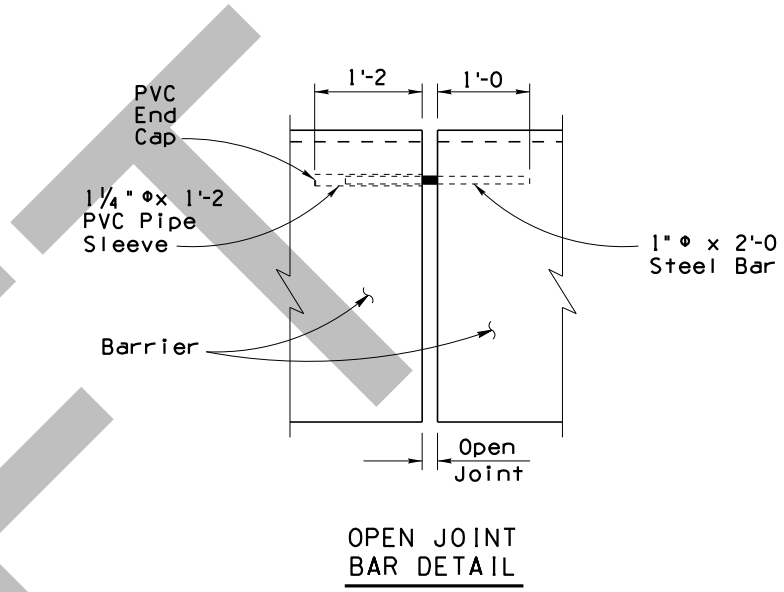
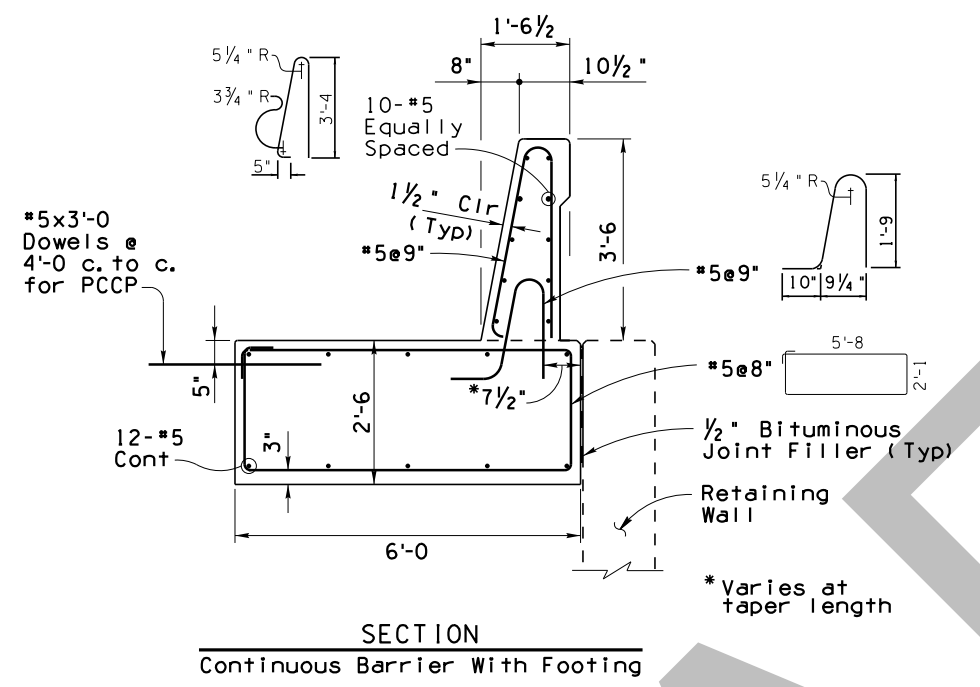
12/17
 PRIOR DISTRIBUTION DATE

Item	42" Single Slope Bridge Concrete Barrier and Transition
Item No.	6011151
Measurement	Linear Foot

STANDARDS ENGINEER	
RECOMMENDED FOR APPROVAL GROUP MANAGER	
APPROVED	
STANDARDS COMMITTEE APPROVED FOR DISTRIBUTION	DATE

ARIZONA DEPARTMENT OF TRANSPORTATION INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION BRIDGE GROUP STANDARD DRAWING	
42" SINGLE SLOPE BRIDGE CONCRETE BARRIER AND TRANSITION	DRAWING NO.

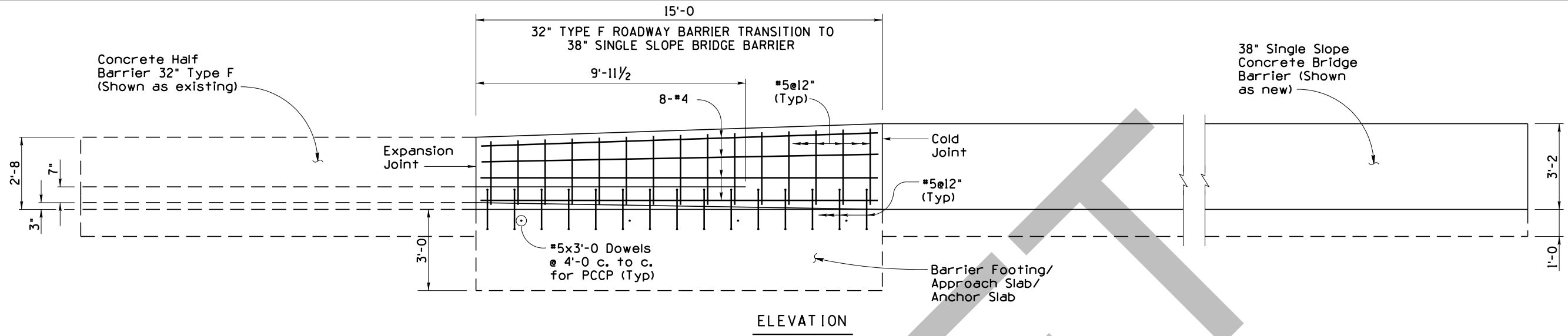
Note to Designer: The information presented in this Standard Drawing has been prepared in accordance with recognized engineering principles and is for general use. It should not be used for specific application without competent professional examination and verification of its suitability and applicability by a licensed professional engineer. Contents within the inner border line shall not be altered.



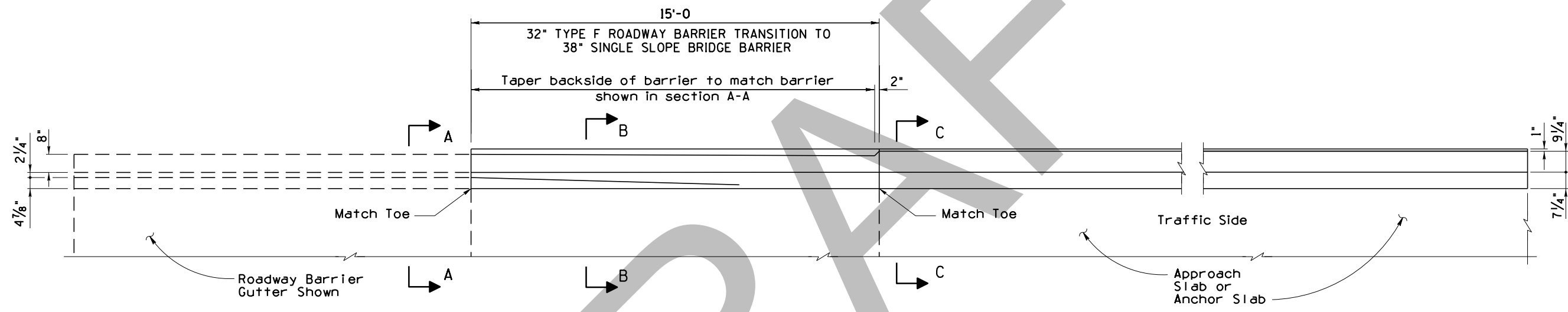
PRIOR DISTRIBUTION DATE 12/17

STANDARDS ENGINEER	ARIZONA DEPARTMENT OF TRANSPORTATION INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION BRIDGE GROUP STANDARD DRAWING	
RECOMMENDED FOR APPROVAL GROUP MANAGER	42" SINGLE SLOPE BRIDGE CONCRETE BARRIER AND TRANSITION	DRAWING NO.
APPROVED		
STANDARDS COMMITTEE APPROVED FOR DISTRIBUTION	DATE	

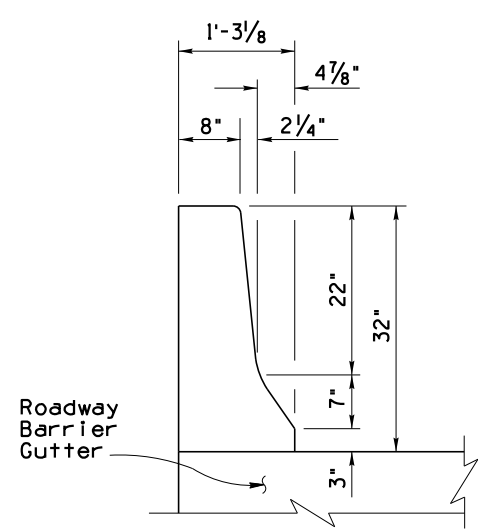
Note to Designer:
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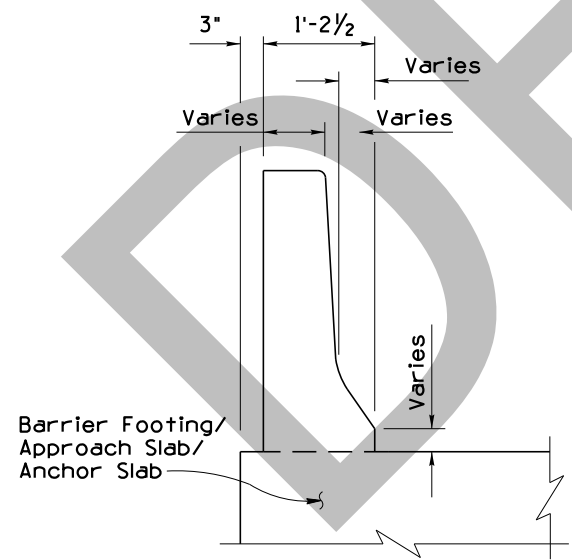
ELEVATION



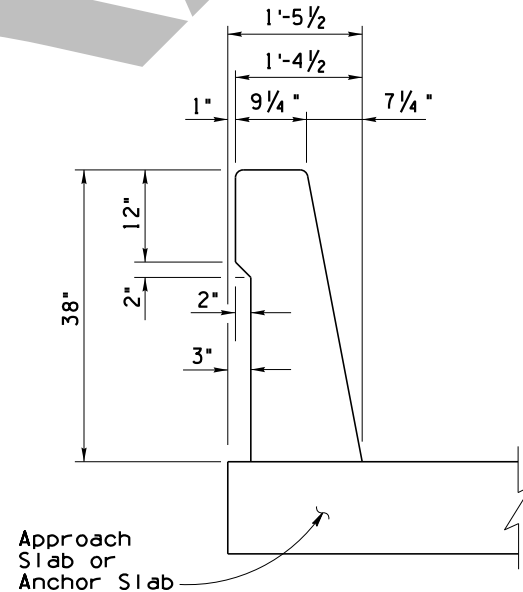
PLAN



SECTION A-A



SECTION B-B



SECTION C-C

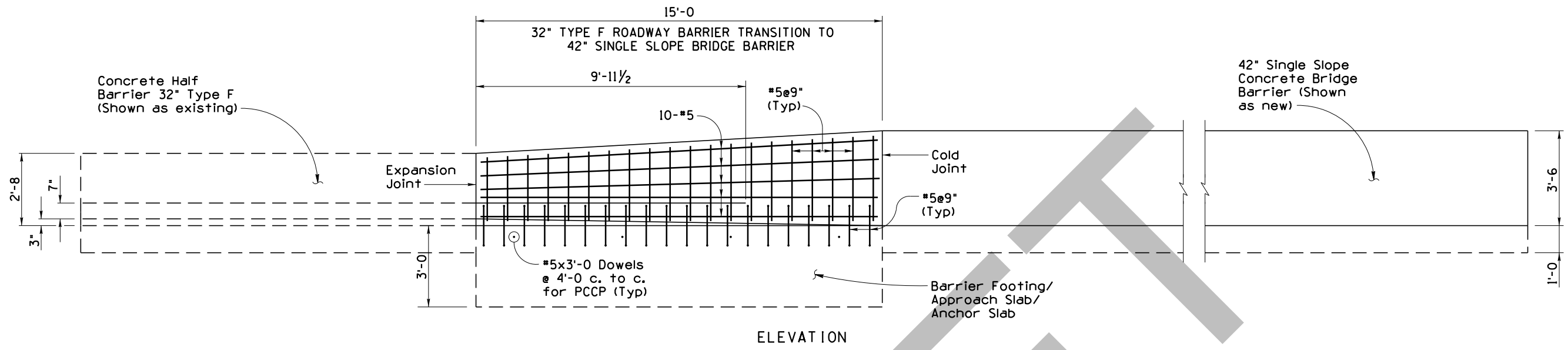
PRIOR DISTRIBUTION DATE

STANDARDS ENGINEER
 RECOMMENDED FOR APPROVAL
 GROUP MANAGER
 APPROVED
 STANDARDS COMMITTEE APPROVED FOR DISTRIBUTION DATE

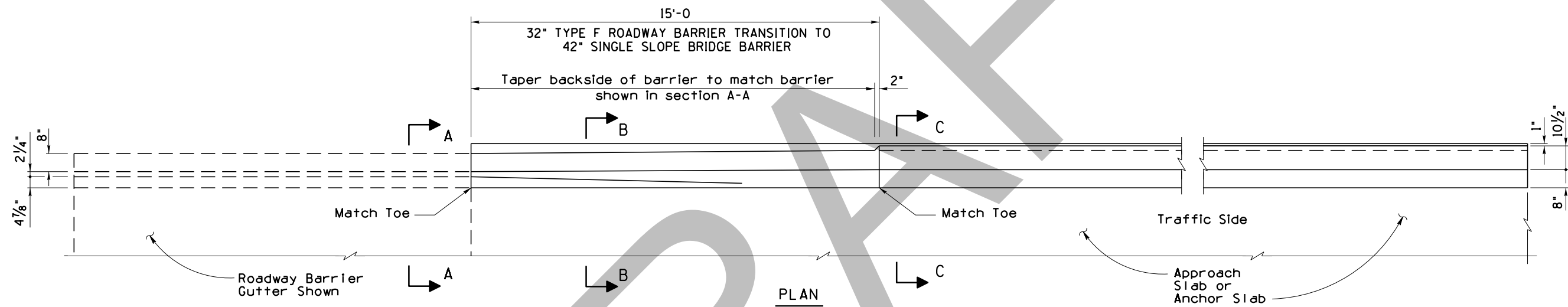
ARIZONA DEPARTMENT OF TRANSPORTATION
 INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
 BRIDGE GROUP STANDARD DRAWING
 32" TYPE F ROADWAY BARRIER
 TRANSITION TO 38" SINGLE
 SLOPE BRIDGE BARRIER
 DRAWING NO.

Note to Designer:
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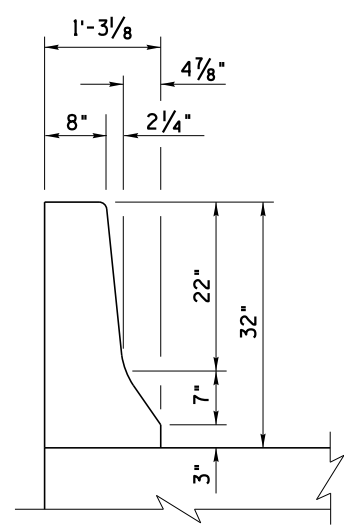
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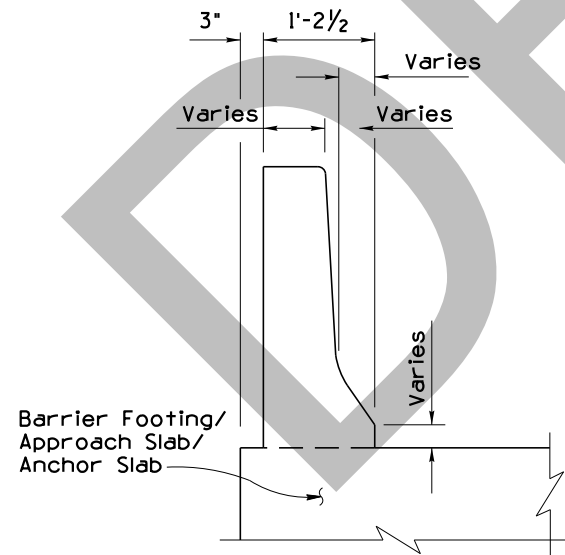
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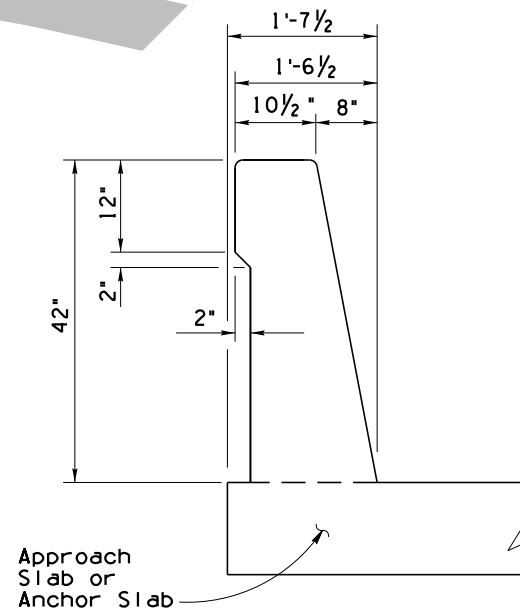
PLAN



SECTION A-A



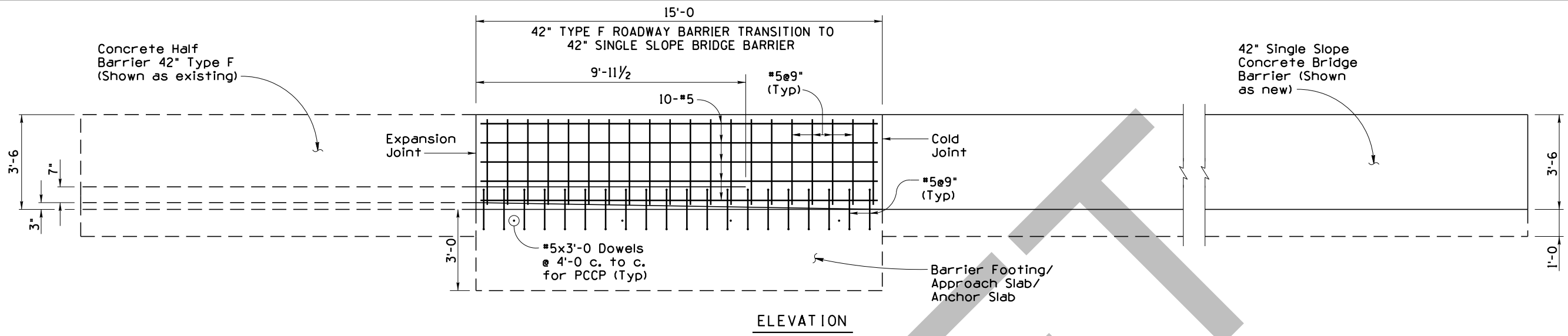
SECTION B-B



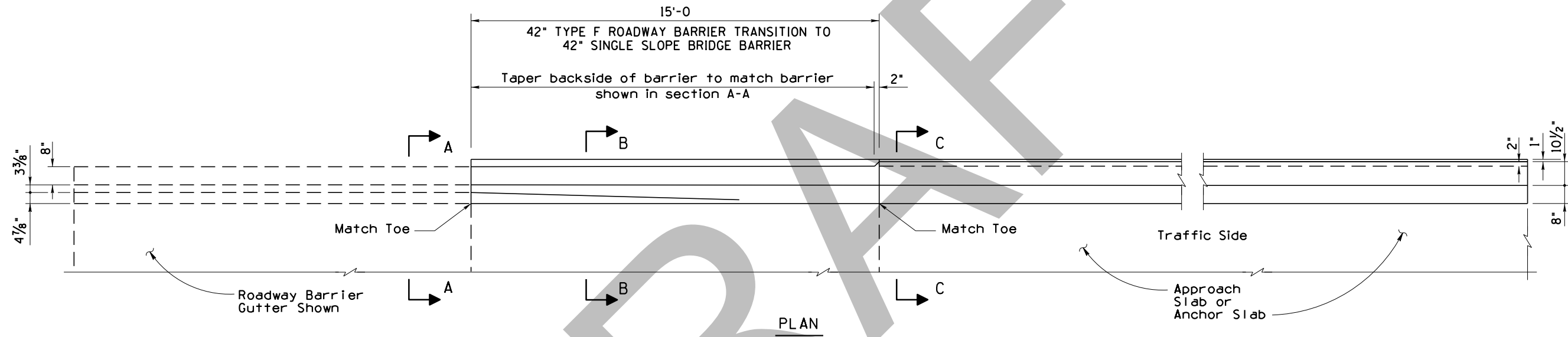
SECTION C-C

STANDARDS ENGINEER	ARIZONA DEPARTMENT OF TRANSPORTATION INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION BRIDGE GROUP STANDARD DRAWING	DRAWING NO.
RECOMMENDED FOR APPROVAL GROUP MANAGER		
APPROVED	32" TYPE F ROADWAY BARRIER TRANSITION TO 42" SINGLE SLOPE BRIDGE BARRIER	
STANDARDS COMMITTEE APPROVED FOR DISTRIBUTION	DATE	

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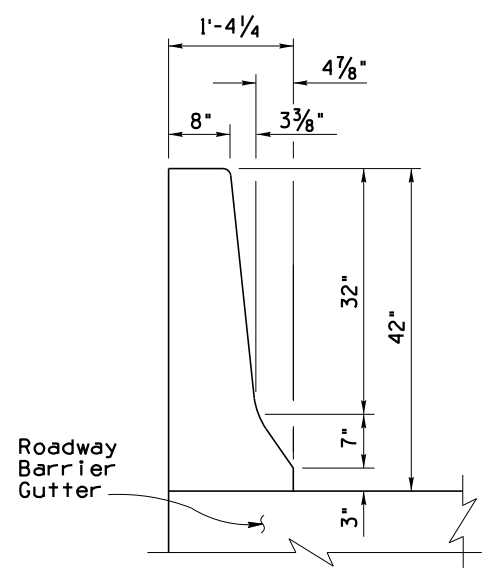


ELEVATION

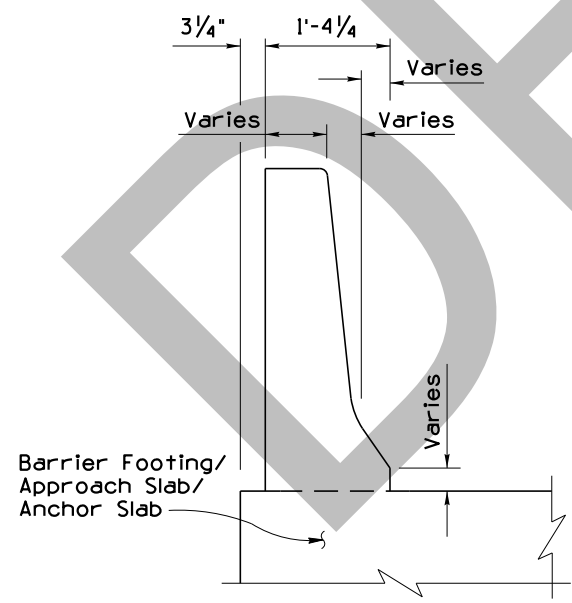


PLAN

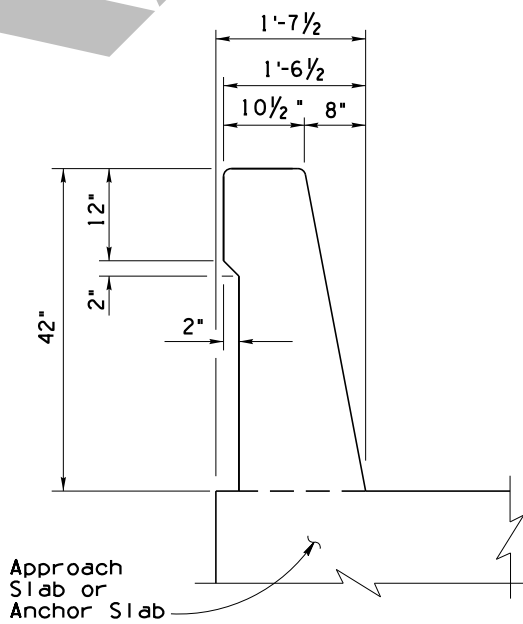
GENERAL NOTES:



SECTION A-A



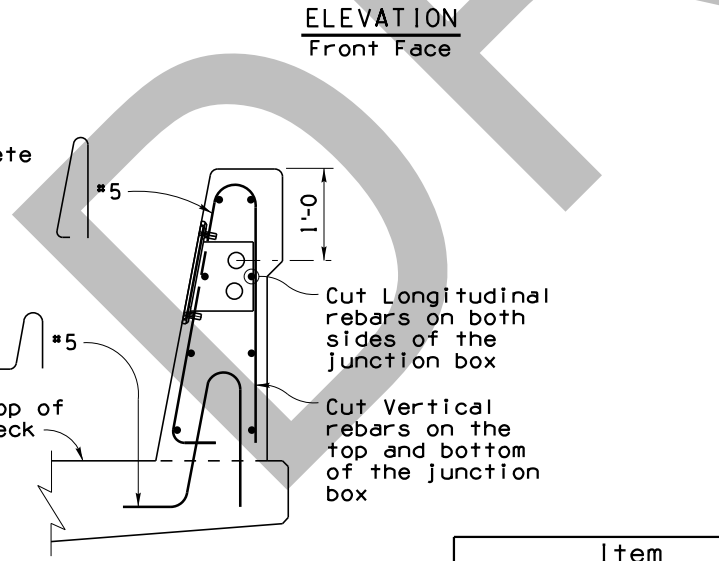
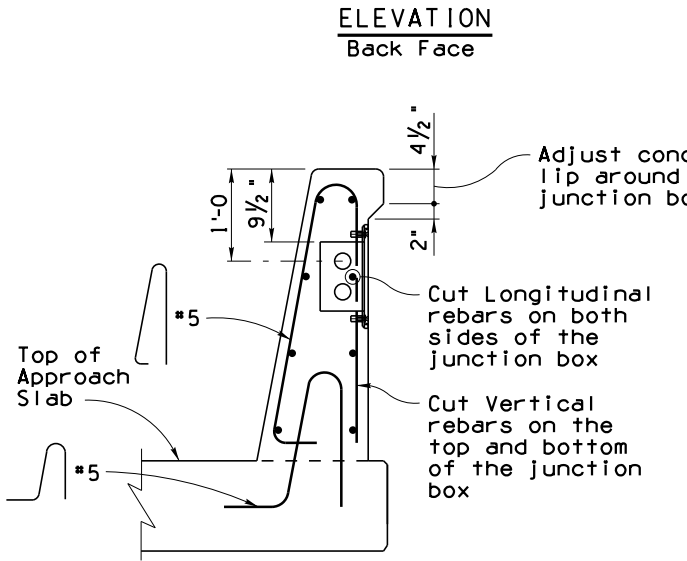
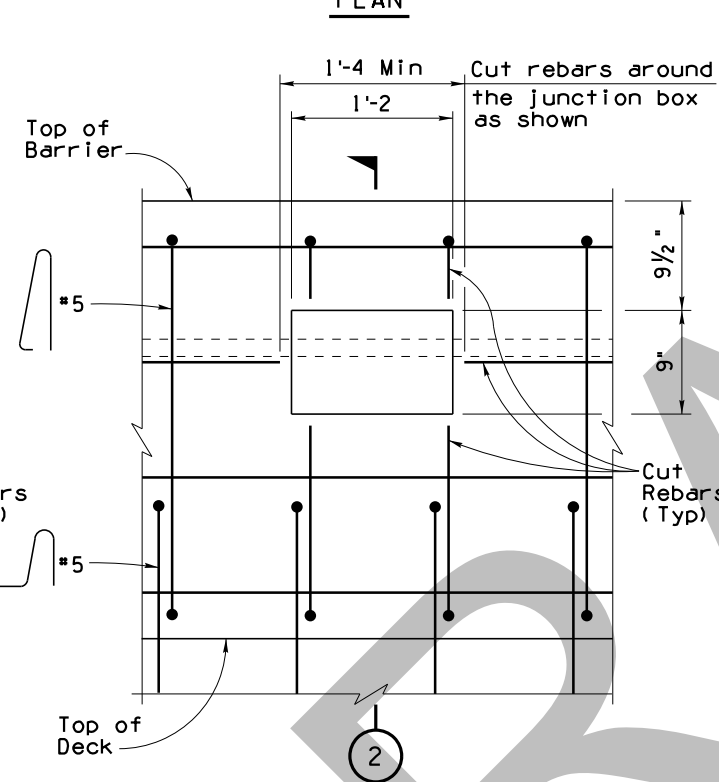
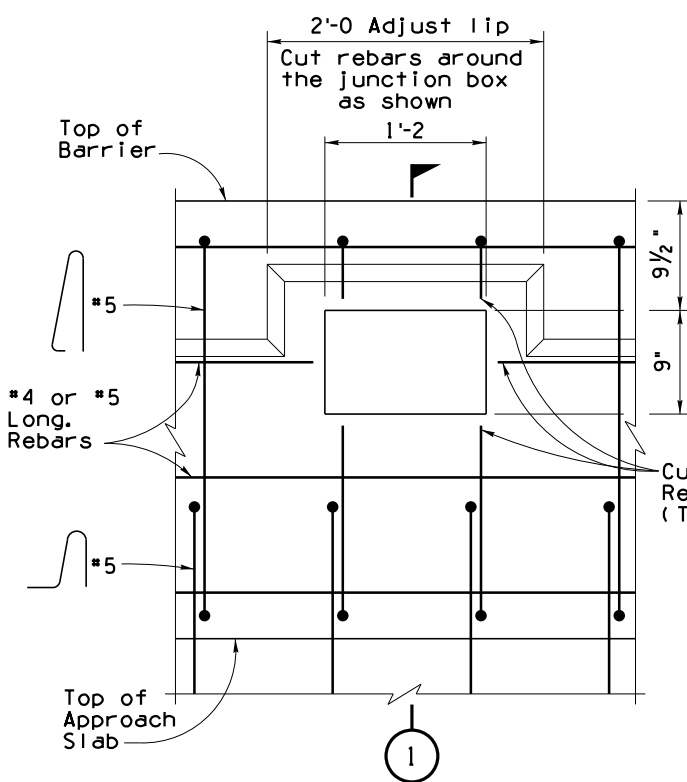
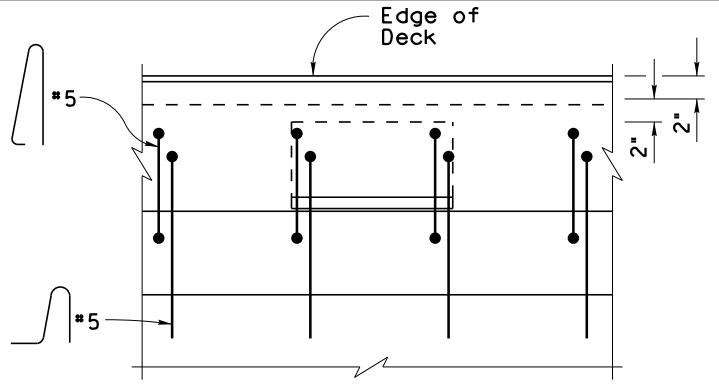
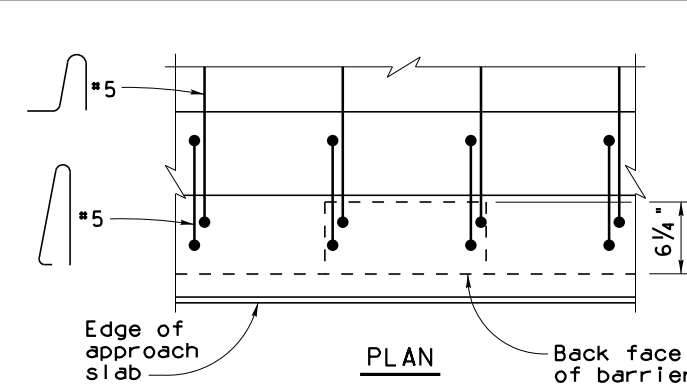
SECTION B-B



SECTION C-C

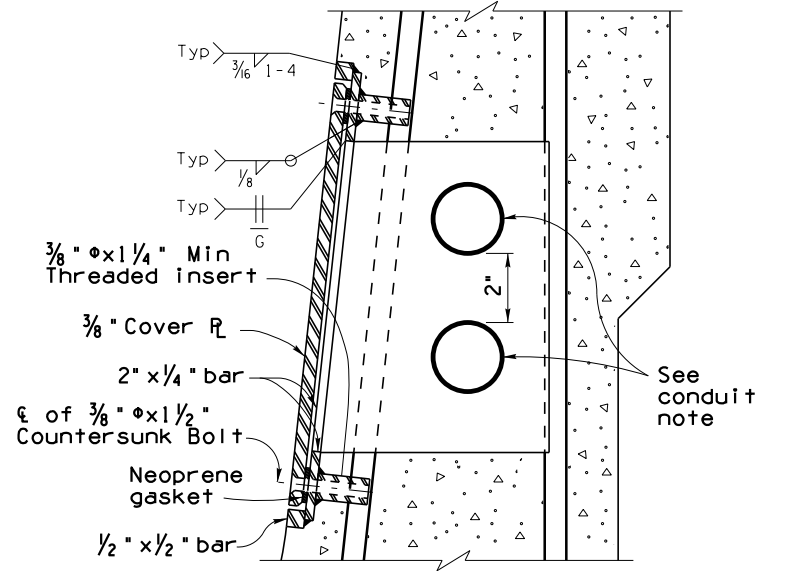
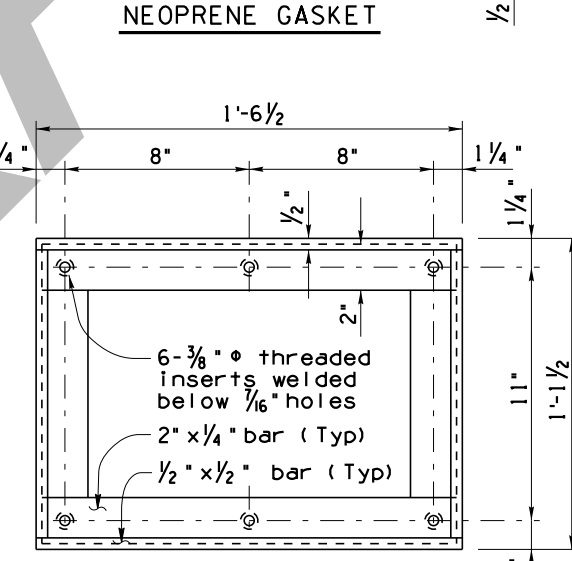
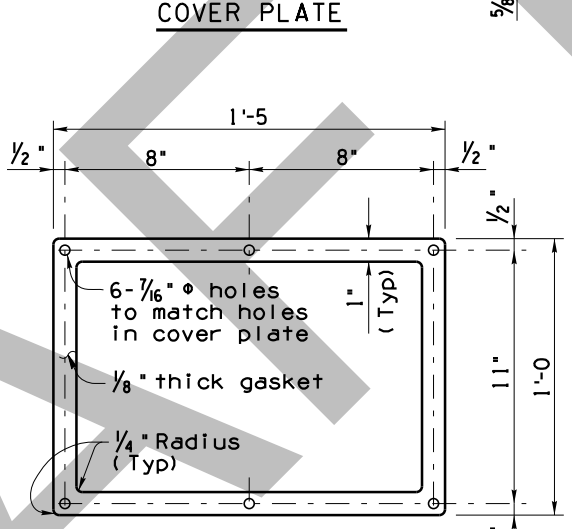
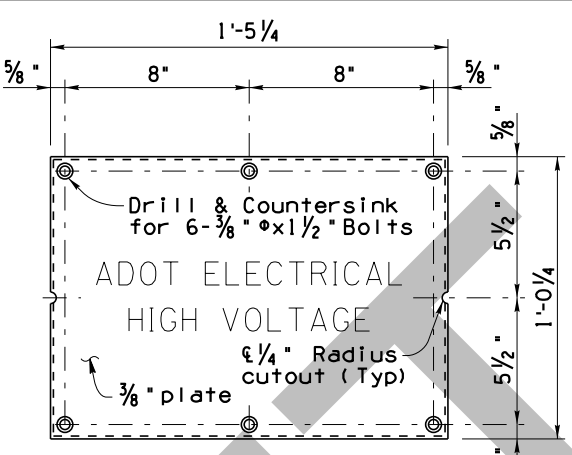
STANDARDS ENGINEER	ARIZONA DEPARTMENT OF TRANSPORTATION INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION BRIDGE GROUP STANDARD DRAWING	DRAWING NO.
RECOMMENDED FOR APPROVAL GROUP MANAGER		
APPROVED	42" TYPE F ROADWAY BARRIER TRANSITION TO 42" SINGLE SLOPE BRIDGE BARRIER	
STANDARDS COMMITTEE APPROVED FOR DISTRIBUTION	DATE	

Note to Designer: The information presented in this Standard Drawing has been prepared in accordance with recognized engineering principles and is for general use. It should not be used for specific application without competent professional examination and verification of its suitability and applicability by a licensed professional engineer. Contents within the inner border line shall not be altered.



TYPE I JUNCTION BOX
At Approach Transition ①

TYPE II JUNCTION BOX
On Bridge ②



GENERAL NOTES:
 Construction Specification - Arizona Department of Transportation Standard Specifications for Road and Bridge Construction, latest Edition.

Design Specifications - AASHTO LRFD Bridge Design Specifications, 8th Edition 2017.

Conduits shall not be placed in exterior barriers of Interstate Highway System bridges.

Structural steel shall conform to ASTM A36.

All bolts shall conform to ASTM A307. Threaded inserts shall be loop type (U.N.C. thread).

All bolts, nuts and washers shall be galvanized in accordance with ASTM A153. All other steel shall be galvanized after fabrication in accordance with ASTM A123.

Chamfer all bottom edges of cover plate 1/8" x 45°.

Cover plate shall have 1" letters embedded 1/8" to say: "ADOT ELECTRICAL HIGH VOLTAGE".

All welding shall conform to the requirements of the American Welding Society, ANSI/AASHTO/AWS D1.5 Bridge Welding Code, latest Edition.

Dimensions shall not be scaled from drawings.

Conduit placement in bridge barrier requires pre-approval by Bridge Group.

JUNCTION BOX NOTE:

Junction Box is shown for 38" Single Slope Bridge Concrete Barrier. Details are similar for the 42" Single Slope Barrier.

CONDUIT NOTE:

A maximum of three 2-inch or two 3-inch diameter conduits will be allowed. No other configurations will be allowed.

Item	Item No.	Measurement
TYPE I JUNCTION BOX	7320475	Each
TYPE II JUNCTION BOX	7320476	Each

STANDARDS ENGINEER
RECOMMENDED FOR APPROVAL GROUP MANAGER
APPROVED
STANDARDS COMMITTEE APPROVED FOR DISTRIBUTION
DATE

ARIZONA DEPARTMENT OF TRANSPORTATION INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION BRIDGE GROUP STANDARD DRAWING	
BARRIER JUNCTION BOX	DRAWING NO.