



Arizona Department of Transportation

Intermodal Transportation Division Roadway Engineering Group

MEMORANDUM

To: All Users of the Roadway Construction Standard Drawings

Date: 29 July 05

From: Mary Viparina *MV*
Assistant State Engineer
Roadway Engineering Group

Subject: C-Standards Update

The October 2004 Roadway Construction Standard Drawings have been revised and updated, and are available for download on the Roadway Design web site at the following address:

http://www.azdot.gov/highways/rdwyeng/roadwaydesign/viewable_drawings.asp

The attached spreadsheet summarizes the changes made to the previous drawings. The changes of note are more fully described below:

- C-04.10, Sht 2 of 2: A new drawing with a double-inlet embankment spillway;
- C-04.20, Sht 2 of 2: A new drawing with a double-inlet embankment downdrain;
- C-07.06: Reissued the drawing for trench backfill requirements. This drawing was inadvertently left out of the October 2004 Edition, but is used by the district permit offices;
- C-10.00: The C-10.00 drawing now shows the C-10.30 transition at both ends of roadway barriers. There will no longer be a distinction made between "approach" or "departure" type when referencing Thrie-Beam to Concrete Half-Barrier Transitions (C10.7x series). The C-10.30 transition will only be connected to roadway half-barrier installations. Thrie-beam guardrail transitions attaching to Bridge Group structures are details included in the bridge sheets of the project plans;
- C-10.30, Shts 1 & 2 of 2: Revised sheets showing the Thrie-Beam to Concrete Half Barrier Transition, attachment hardware, and optional Lip Curb Details;
- C-10.31 & C-10.32: These drawings have been deleted. Designers shall specify the C-10.30 transition for both the approach and departure ends of roadway half-barrier installations; and
- C-18.10: Revised General Note 8 pertaining to backfill compaction.

Design personnel should implement the updated drawings and incorporate the updates into their project plans. For projects at or near completion, where the inclusion of all new standard drawings is not practical, the 1A Sheet must accurately reflect the correct revision dates for the design. Construction personnel should review the drawing revisions for possible implementation on construction projects.

Please distribute this memorandum to all users within your Group, Section, or District, and arrange for printing of the updated Standard Drawings for those without computer access. Copies of the complete set of Roadway Construction Standard Drawings (8-1/2" x 11" or 11" x 17") may be obtained from Engineering Records located at 1655 West Jackson, Room 175, Phoenix, AZ 85007-3217 or by telephoning 602-712-8216.

The updated Construction Standards Index (1A Sheet) and Barrier Summary Sheets are also available on-line at the address shown above.

C-Standards Update
29 July 05
Page 2

Please direct questions regarding this memorandum or the updated standards to Kenneth Cooper, Roadway Standards Engineer at 602-712-8674.

MAV/KRC/krc

c:	Roadway Engineering Group	Regional Traffic Engineers (4)
	Traffic Engineering Group	Materials Group
	Valley Project Management Group	Local Government Section
	Environmental and Enhancement Group	Engineering Consultant Section
	Districts (10)	District Permits Office (9)
	Statewide Project Management Group	Engineering Records
	FHWA	Maintenance Group
	Contracts and Specifications Section	Dan Lance
	Construction Group	Sam Maroufkhani
	Bridge Group	Doug Forstie

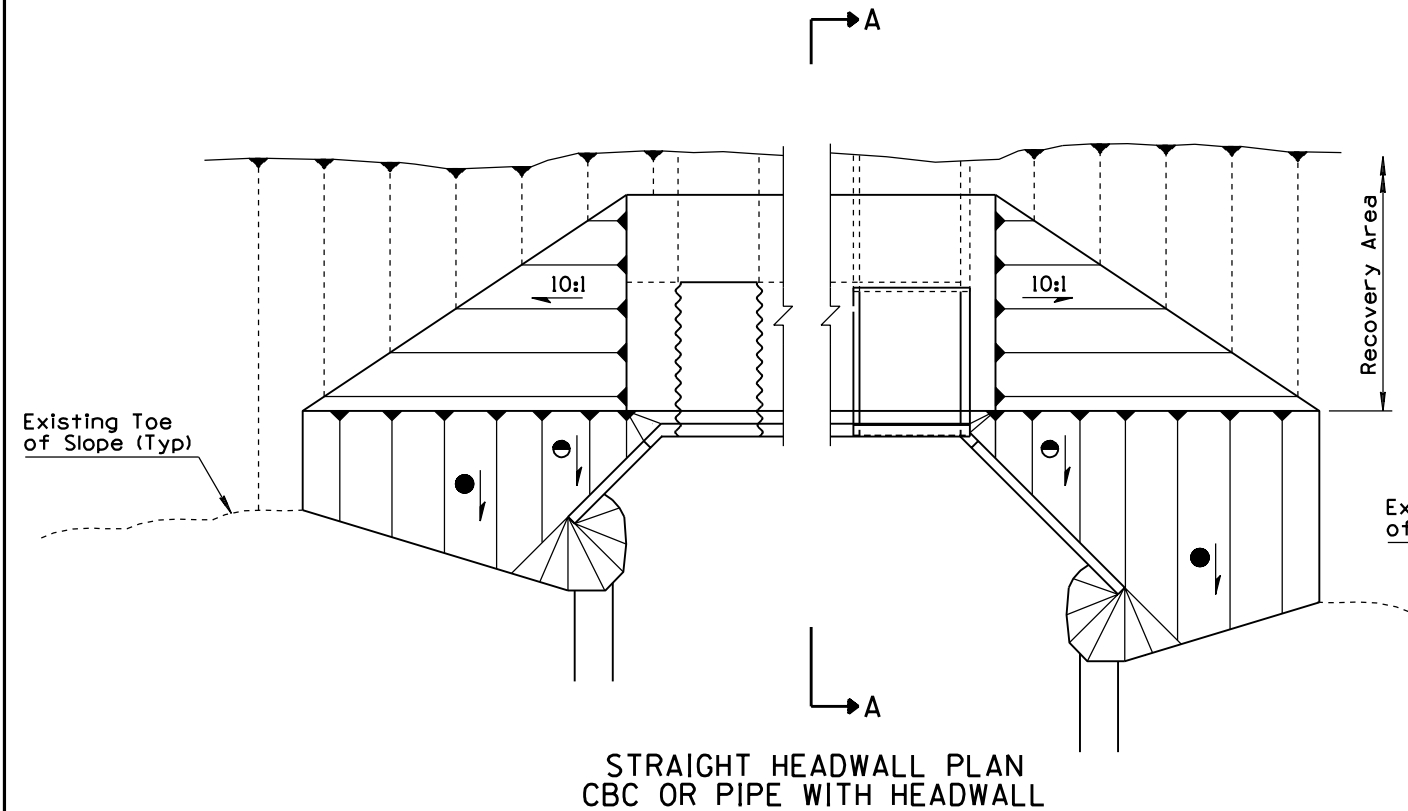
Summary of Revisions, July 29, 2005

- General: modified lines outside of area of interest to appear as subdued
- New Index of Sheets dated 7/29/05
- C-03.10, Sheet 4 of 5: deleted projecting pipe detail; added end section to berm detail; deleted General Notes 1 & 2
- C-04.10, Sheet 1 of 2: reissued std dwg
- C-04.10, Sheet 2 of 2: new std dwg for embankment spillway with double inlet
- C-04.20, Sheet 1 of 2: new General Note 1; graphical changes to inlet plan and section; revised General Note 9
- C-04.20, Sheet 2 of 2: new std dwg for embankment downdrain with double inlet
- C-04.30: minor revision to spillway graphics
- C-04.40: minor revision to downdrain graphics
- C-05.12, Sheet 1 of 3: added parallel type entrance and exit ramp transitions; modified Section A-A for both Concrete Barrier and Curb & Gutter applications
- C-05.12, Sheet 2 of 3: re-arranged sheet graphics; added and revised perspective views; modified proportions of pavement thicknesses in transition and gore
- C-05.12, Sheet 3 of 3: re-arranged sheet graphics; revised length designation for Type 9 Curb & Gutter Transition
- C-05.20, Sheet 1 of 2: deleted reference to "Control Point" from station location callout in both plan views
- C-05.20, Sheet 2 of 2: revised slope designation in section views and beneath general notes; minor graphical changes
- C-05.30, Sheet 1 of 6: revised dimension callout in Section A-A
- C-05.30, Sheets 1 through 6: added a general note regarding damaged truncated domes; modified control point notation to read "Location – See Plans"
- C-05.30, Sheet 7 of 7: modified dimensions from numbers to symbols
- C-07.01, Sheet 1 of 2: minor graphical changes
- C-07.01, Sheet 2 of 2: minor graphical changes
- C-07.06: reissued std dwg
- C-08.20: minor graphical changes
- C-10.00: deleted references to C-10.31 and C-10.32; modified graphics for "CONCRETE HALF BARRIER TRANSITION OFF STRUCTURE" so approach- and departure-end Thrie-Beam Guardrail Transitions are identical
- C-10.01: revised title on section view; minor graphical changes
- C-10.02: revised title on section view; minor graphical changes
- C-10.03: removed 29" dimension in Section G4 (1W) and Section G4 (2W)
- C-10.04: removed 29" dimension in Section G4 (1S) and Section G4 (2S)
- C-10.07, Sheet 2 of 2: revised bolt length callout for timber post installation
- C-10.30, Sheet 1 of 2: reissued std dwg; removed reference to pavement type from title
- C-10.30, Sheet 2 of 2: new std dwg showing guardrail attachment hardware formerly shown on C-10.32 and pavement options for lip curb detail
- C-10.31: deleted
- C-10.32: deleted
- C-10.51: revised 8" dimension to 7" in elevation view
- C-10.52: removed gutter pan thickness notation from Section A-A
- C-10.53: removed gutter pan thickness notation from Section A-A
- C-10.70, Sheet 1 of 3: revised transition system and terminal connector note to reference C-10.30
- C-10.70, Sheet 2 of 3: revised callouts on Section D-D to reference C-10.30, Sheet 2 of 2
- C-10.71, Sheet 1 of 2: revised callouts on plan and elevation to reference C-10.30
- C-10.71, Sheet 2 of 2: revised callout on Section C-C to reference C-10.30
- C-10.72, Sheets 1 of 3: revised callouts on plan and elevation to reference C-10.30
- C-10.72, Sheet 2 of 3: revised callout on Section D-D to reference C-10.30, Sheet 2 of 2
- C-10.73, Sheets 1 of 2: revised callouts on plan and elevation to reference C-10.30
- C-10.73, Sheets 2 of 2: revised callout on Section C-C to reference C-10.30, Sheet 2 of 2
- C-10.74: removed gutter pan thickness notation from Section A-A
- C-12.10, Sheet 2 of 5: revised length specified in General Note 1
- C-13.10, Sheet 1 of 2: reissued std dwg
- C-18.10, Sheet 1 of 3: revised General Notes 4 and 8

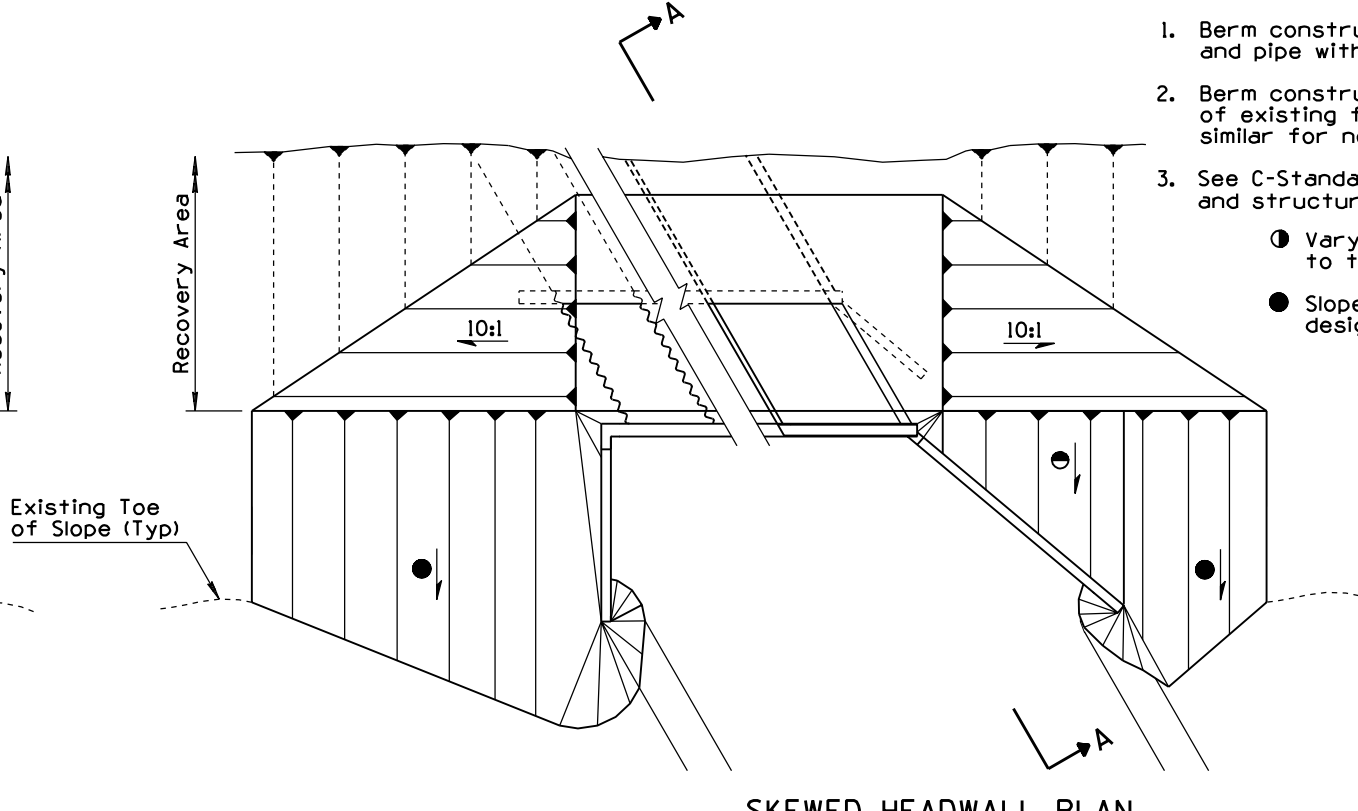
NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	REISSUED STANDARD DRAWING	RLF	9/04
2			
3			
4			

GENERAL NOTES

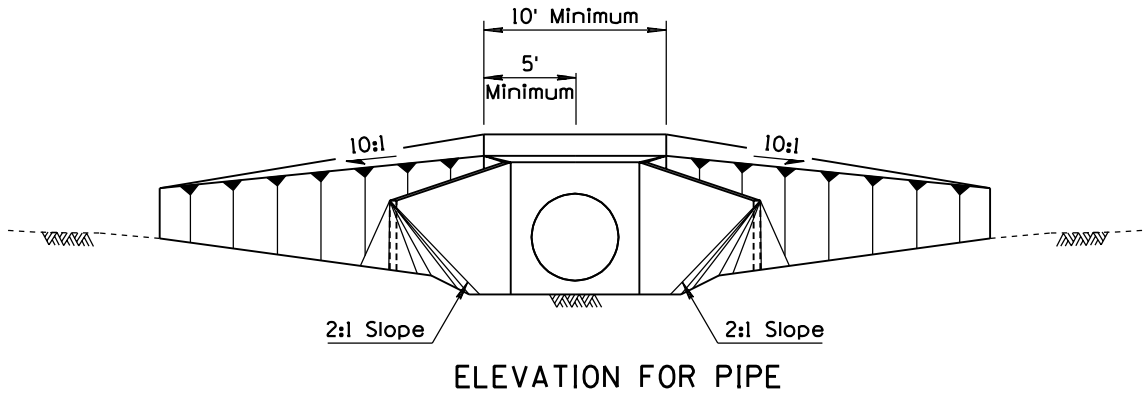
- Berm construction similar for box culvert and pipe with headwall.
- Berm construction shown is for extension of existing facilities. Berm construction similar for new facilities.
- See C-Standards and B-Standards for pipe and structure backfill limits.
 - Vary slope. Slope shall match to top of wing walls.
 - Slope shall match wing walls design slope (2:1, 4:1, or 6:1)



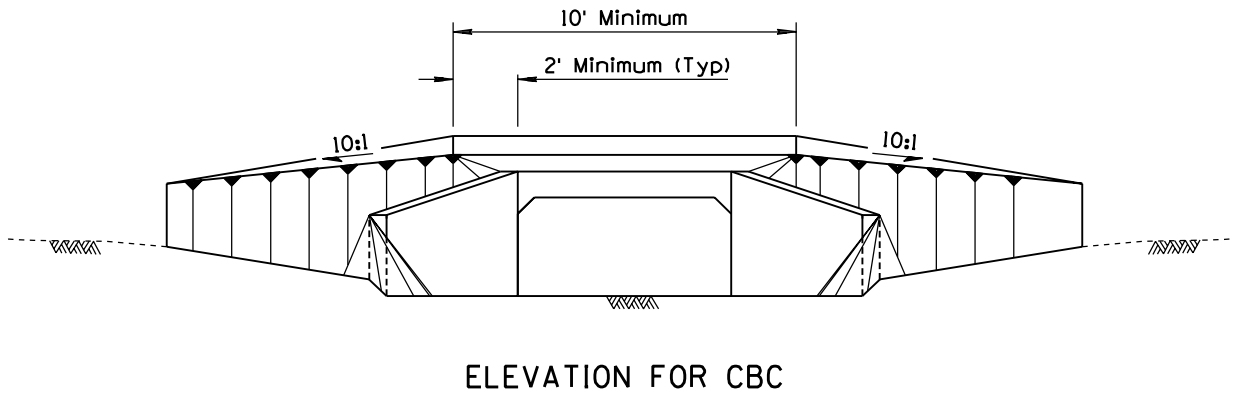
STRAIGHT HEADWALL PLAN
CBC OR PIPE WITH HEADWALL



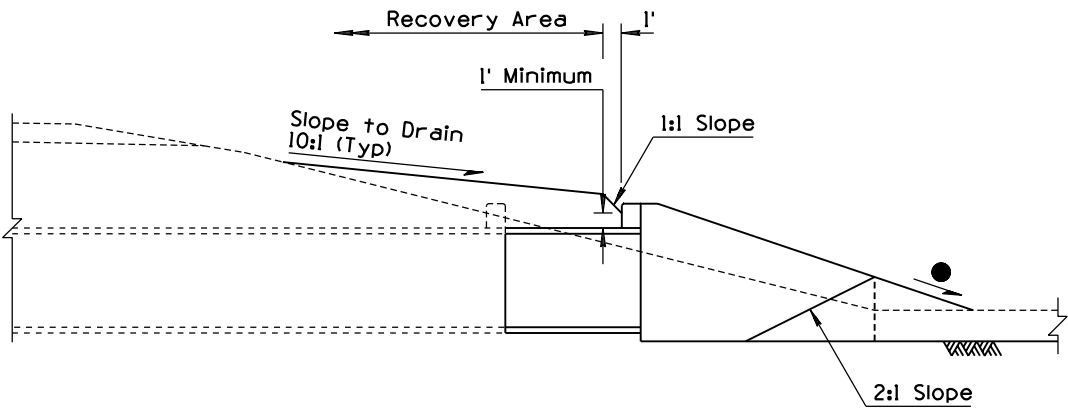
SKEWED HEADWALL PLAN



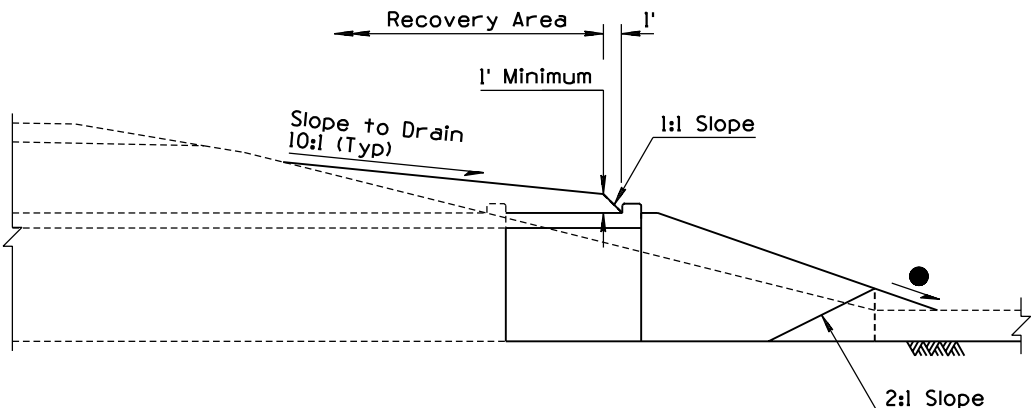
ELEVATION FOR PIPE



ELEVATION FOR CBC



SECTION A-A (FOR PIPE WITH HEADWALL)



SECTION A-A (FOR CBC)

APPROVED FOR DESIGN <i>Mary Viparina</i>	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION ROADWAY STANDARD DRAWINGS	REV. 9/04
APPROVED FOR DISTRIBUTION <i>Julio [Signature]</i>	DITCHES, CHANNELS, DIKES AND BERMS HEADWALL BERMS	DRAWING NO. C-03.10 Sheet 5 of 5

NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	MODIFIED TABLE MEASUREMENT FORMAT	RLF	9/04
2	MODIFIED INLET GRAPHICS	RLF	7/05
3			
4			

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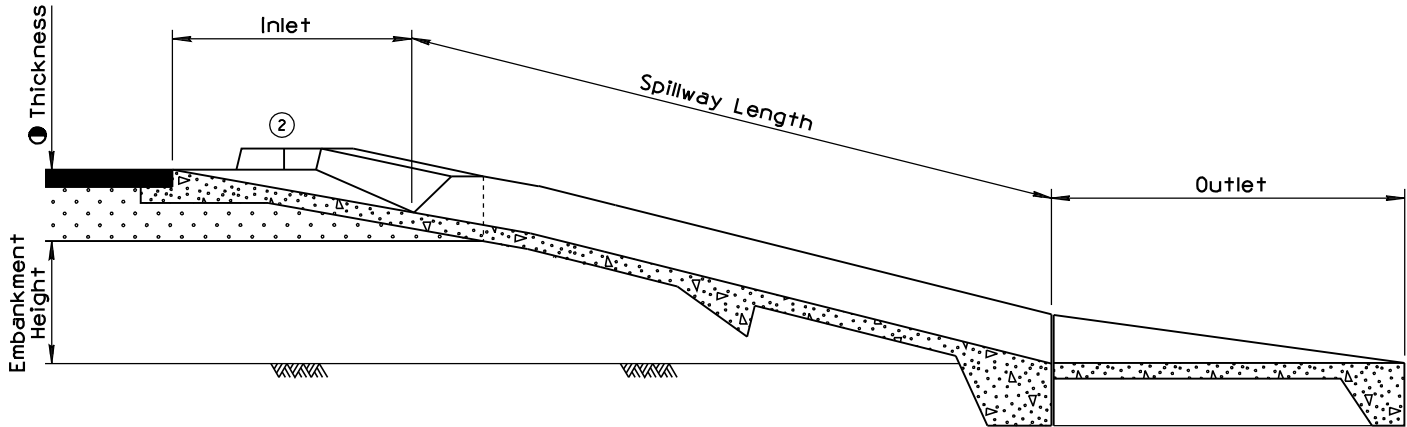
LENGTH OF SPILLWAY (F+)																																	
Thickness (In) ●	Embankment Height (F+)																																
	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32					
12	32	37	43	49	50	50	51	52	52	52	52	53	53	54	54	54	55	55	56	56	57	57	58	58	59	59	60	60					
13	33	38	44	50	50	51	51	52	52	52	53	53	53	54	54	55	55	56	56	57	57	58	58	59	59	60	60	61					
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15	34	39	45	51	51	52	52	53	53	54	54	54	55	55	55	56	56	57	57	58	58	59	59	60	60	61	61	62					
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17	35	40	46	52	52	53	53	54	54	55	55	55	56	56	57	57	57	58	58	59	59	60	60	61	61	62	62	63					
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36	44	49	55	61	62	62	63	63	64	64	64	65	65	66	66	66	67	67	68	68	69	69	70	70	71	71	72	72					

C-02.10 AND C-02.20 SLOPES

①

LENGTH OF SPILLWAY (F+)																
Thickness (In) ●	Embankment Height (F+)															
	5	6	7	8	9	10	11	12	13							
12	22	22	22	23	23	24	24	24	25							
13	22	22	23	23	23	24	24	24	25							
14	22	23	23	23	24	24	25	25	26							
15	23	23	23	24	24	25	25	25	26							
16	23	23	24	24	24	25	25	26	26							
17	23	24	24	24	25	25	26	26	27							
18	24	24	25	25	25	26	26	27	27							
19	24	24	25	25	25	26	26	27	27							
20	25	25	25	25	26	26	27	27	28							
21	25	25	25	26	26	27	27	28	28							
22	25	25	26	26	27	27	27	28	28							
23	26	26	26	26	27	27	28	28	29							
24	26	26	26	27	27	28	28	29	29							
25	26	27	27	27	28	28	28	29	29							
26	27	27	27	28	28	28	29	29	30							
27	27	27	28	28	28	29	29	30	30							
28	27	28	28	28	29	29	29	30	30							
29	28	28	28	29	29	29	30	30	31							
30	28	28	29	29	29	30	30	31	31							
31	28	29	29	29	30	30	31	31	32							
32	29	29	29	30	30	30	31	31	32							
33	29	29	30	30	30	31	31	32	32							
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C-02.30 SLOPES



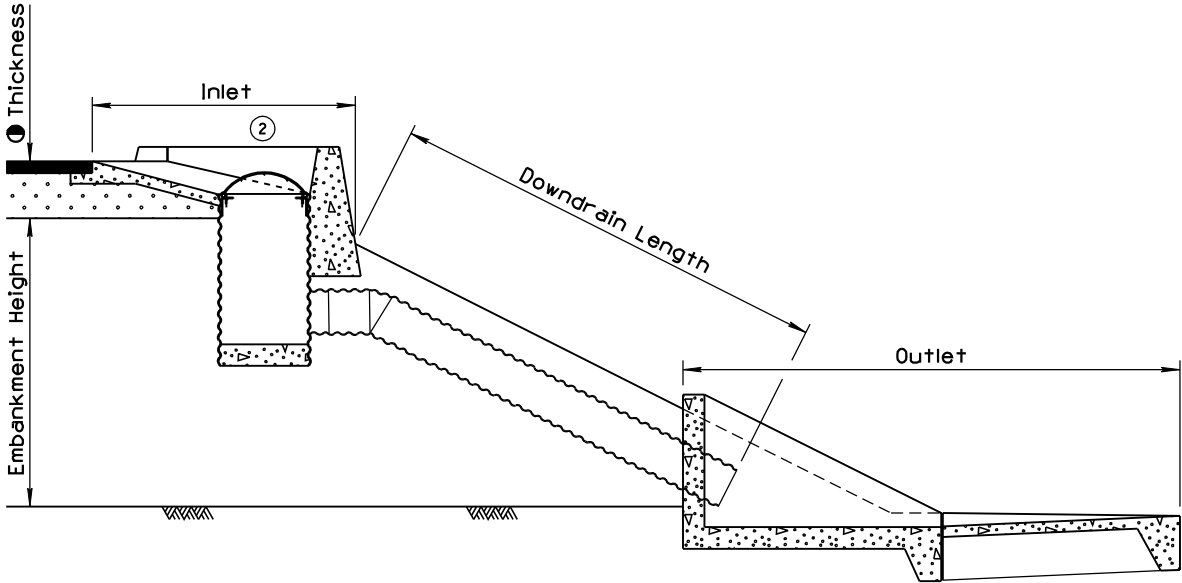
GENERAL NOTES

1. For C-02.10 slopes with embankment height over 24', use length for 24' embankment height from table + 2'.
2. For C-02.20 slopes with embankment height over 32', use length for 32' embankment height from table + 2'.
3. For C-02.30 slopes with embankment height over 13', use length for 13' embankment height from table + 2'.
4. For spillway details, see Std Dwg C-04.10.

NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	MODIFIED TABLE MEASUREMENT FORMAT	RLF	9/04
2	MODIFIED INLET GRAPHICS	RLF	7/05
3			
4			

LENGTH OF DOWNDRAIN (Ft)																																
Thickness (In) ●	Embankment Height (Ft)																															
	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32						
12	32	38	46	46	46	46	48	48	48	50	50	50	50	52	52	52	52	54	54	54	54	56	56	56	56	58	58	58	58	58		
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36	44	50	58	58	60	60	60	60	62	62	62	62	64	64	64	64	66	66	66	66	68	68	68	70	70	70	70	70				

C-02.10 AND C-02.20 SLOPES



LENGTH OF DOWNDRAIN (Ft)														
Thickness (In) ●	Embankment Height (Ft)													
	5	6	7	8	9	10	11	12	13					
12	14	16	16	16	20	20	20	20	20					
13	14	16	16	18	20	20	20	20	22					
14	14	16	18	18	20	20	20	20	22					
15	14	18	18	18	20	20	20	22	22					
16	16	18	18	18	20	20	22	22	22					
17	16	18	18	18	20	22	22	22	22					
18	16	18	18	18	22	22	22	22	22					
19	16	18	18	20	22	22	22	22	24					
20	16	18	20	20	22	22	22	24	24					
21	16	20	20	20	22	22	24	24	24					
22	18	20	20	20	22	22	24	24	24					
23	18	20	20	20	22	24	24	24	24					
24	18	20	20	20	24	24	24	24	26					
25	18	20	20	22	24	24	24	24	26					
26	18	20	22	22	24	24	24	26	26					
27	18	22	22	22	24	24	26	26	26					
28	20	22	22	22	24	26	26	26	26					
29	20	22	22	22	26	26	26	26	26					
30	20	22	22	24	26	26	26	26	28					
31	20	22	24	24	26	26	26	28	28					
32	20	24	24	24	26	26	26	28	28					
33	22	24	24	24	26	26	28	28	28					
34	22	24	24	24	26	28	28	28	28					
35	22	24	24	24	28	28	28	28	28					
36	22	24	24	26	28	28	28	28	30					

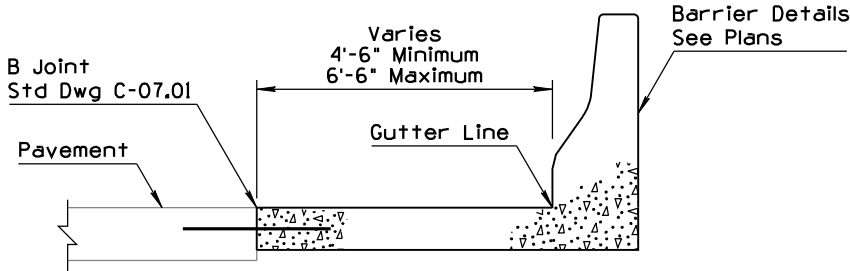
C-02.30 SLOPES

GENERAL NOTES

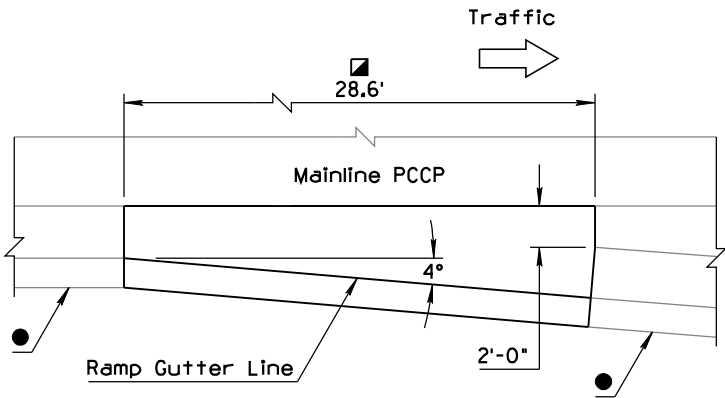
1. For C-02.10 slopes with embankment height over 24', use length for 24' embankment height from table + 2'.
2. For C-02.20 slopes with embankment height over 32', use length for 32' embankment height from table + 2'.
3. For C-02.30 slopes with embankment height over 13', use length for 13' embankment height from table + 2'.
4. For downdrain details, see Std Dwg C-04.20.

APPROVED FOR DESIGN <i>May Viparina</i>	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION ROADWAY STANDARD DRAWINGS	REV. 7/05
APPROVED FOR DISTRIBUTION <i>John Smith</i>	DOWNDRAIN LENGTH TABLE	DRAWING NO. C-04.40

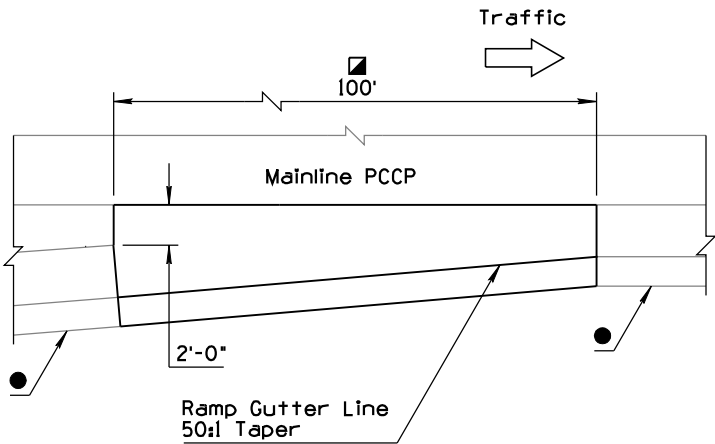
NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	REISSUED STANDARD DRAWING	RLF	7/05
2			
3			
4			



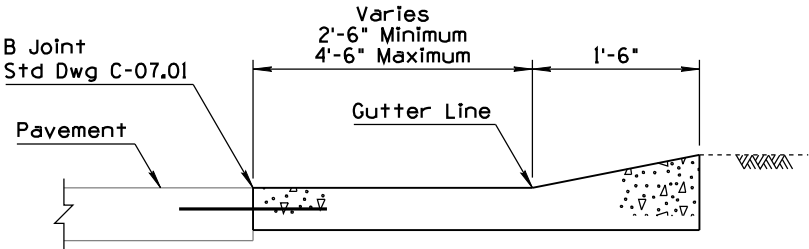
SECTION
CONCRETE BARRIER APPLICATION



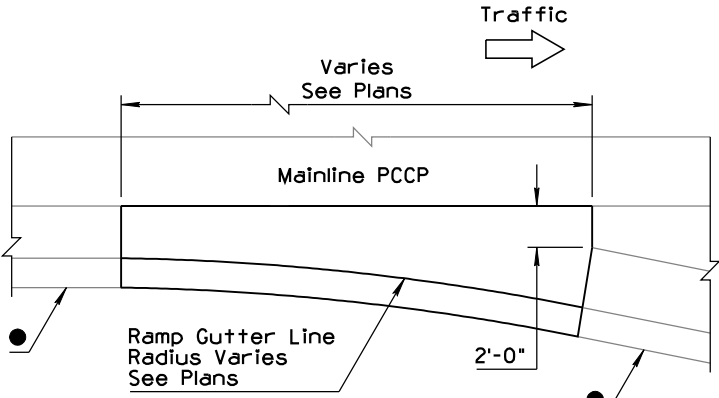
EXIT



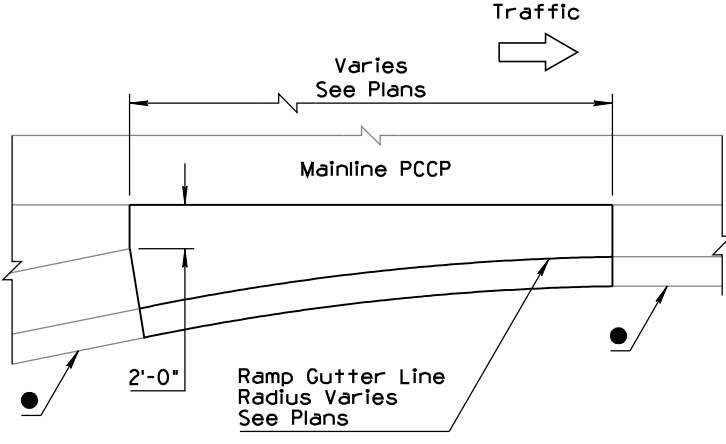
ENTRANCE
TYPE 1 - TAPER TYPE GUTTER TRANSITIONS AT RAMPS
PLAN VIEW



SECTION
CURB & GUTTER APPLICATION



EXIT



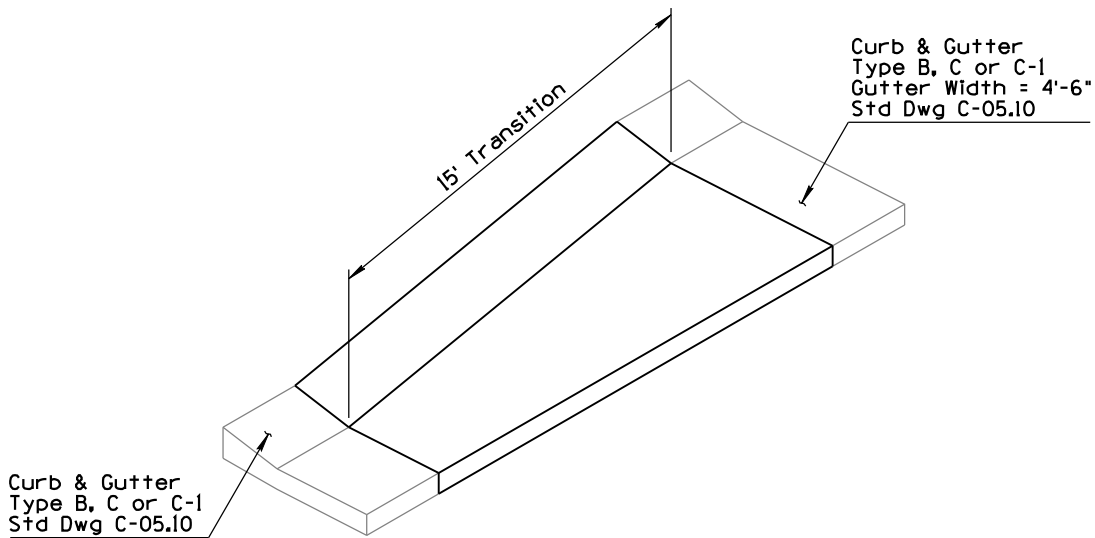
ENTRANCE
TYPE 1 - PARALLEL TYPE GUTTER TRANSITIONS AT RAMPS
PLAN VIEW

GENERAL NOTES

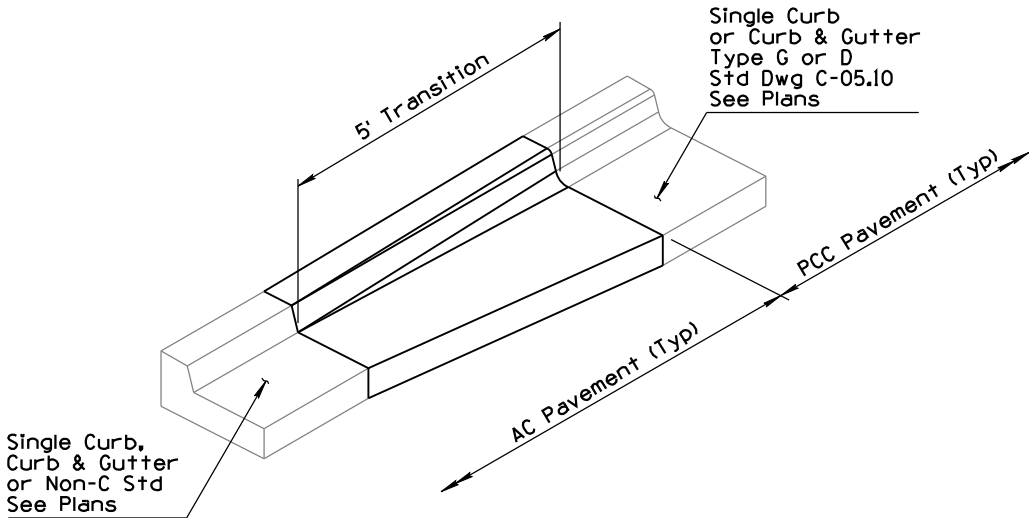
1. All gutter flow lines shall be constructed to an accurate grade.
 2. See Slotted Drain Std Dwgs C-13.60 and C-15.91 for curb & gutter with slotted drain.
 3. See Std Dwg C-05.10 for additional general notes and dimensions.
 4. See Std Dwg C-07.04 for typical curb and gutter transition locations.
- ☒ Dimension May Vary Where Transition Occurs on Curves, See Plans
- Type I - Gutter Transition at Roadway Edge With Angle Point is Applicable With Concrete Half Barrier and Curb & Gutter Applications. Curb & Gutter Alternative is Shown.
- Curb & Gutter - Type B, C or C-1, Std Dwg C-05.10

APPROVED FOR DESIGN <i>May Viparina</i>	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION ROADWAY STANDARD DRAWINGS	REV. 7/05
APPROVED FOR DISTRIBUTION <i>John [Signature]</i>	CURB & GUTTER TRANSITIONS	DRAWING NO. ① C-05.12 Sheet 1 of 3

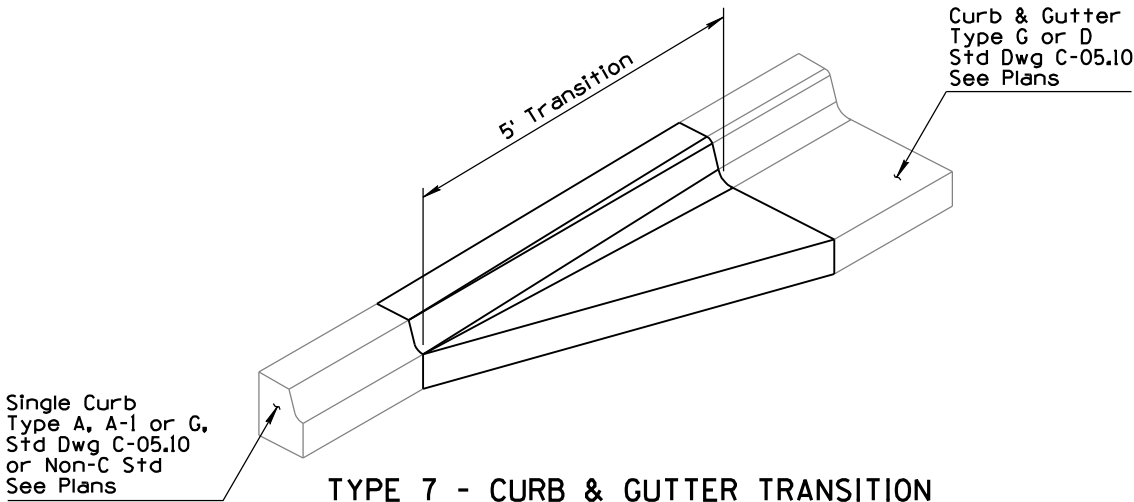
NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	REISSUED STANDARD	RLF	9/04
2	REVISED DIMENSION	RLF	7/05
3			
4			



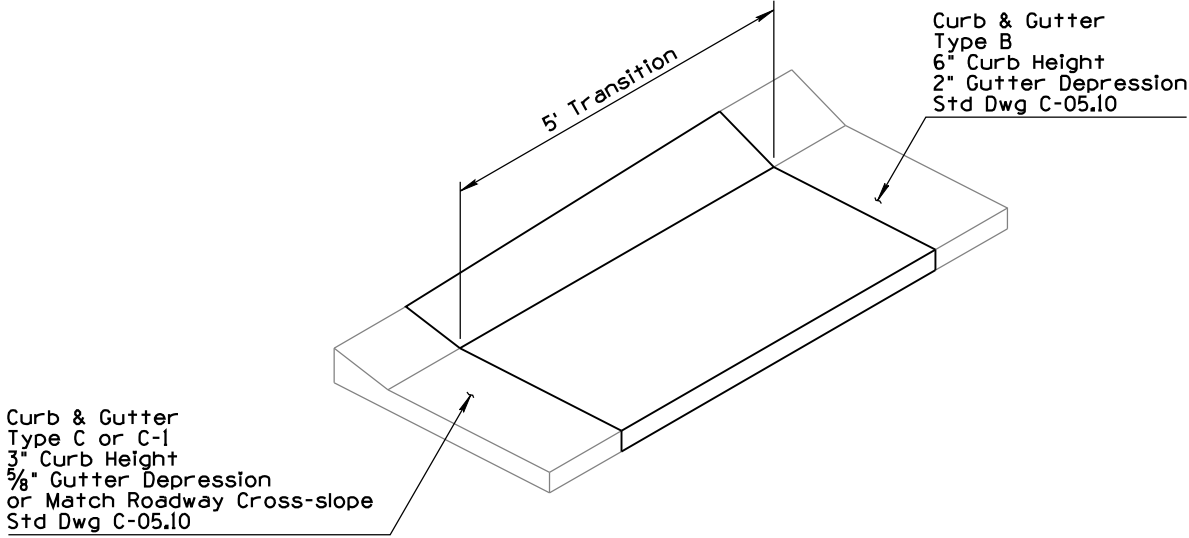
TYPE 5 - CURB & GUTTER TRANSITION



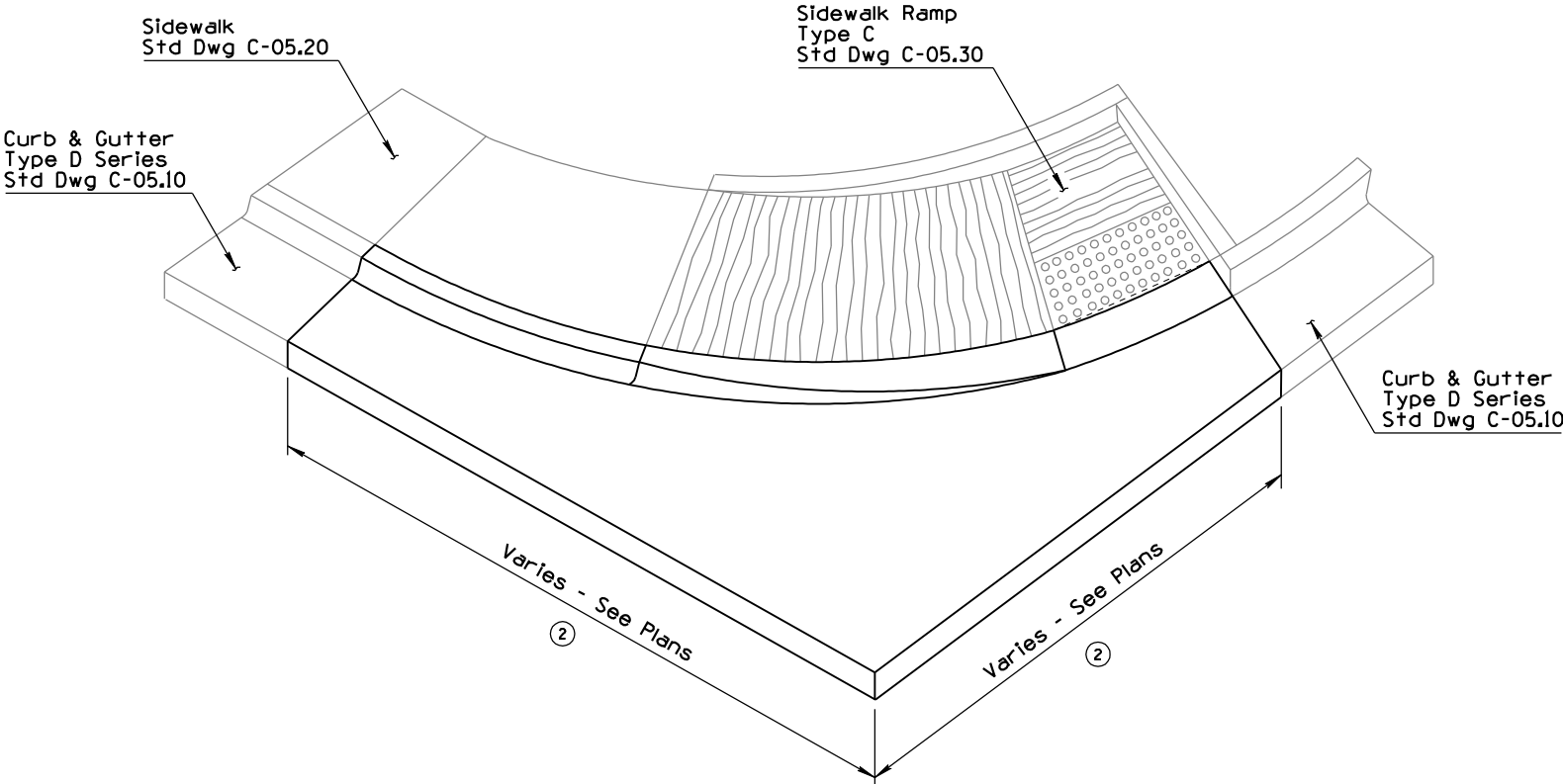
TYPE 6 - SINGLE CURB OR CURB & GUTTER TRANSITION
(Curb & Gutter Shown)



TYPE 7 - CURB & GUTTER TRANSITION



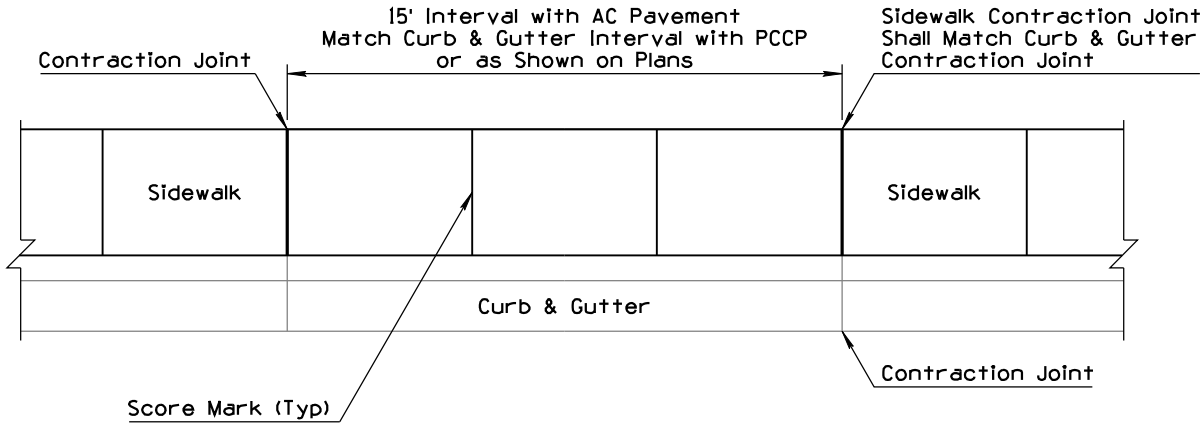
TYPE 8 - CURB & GUTTER TRANSITION



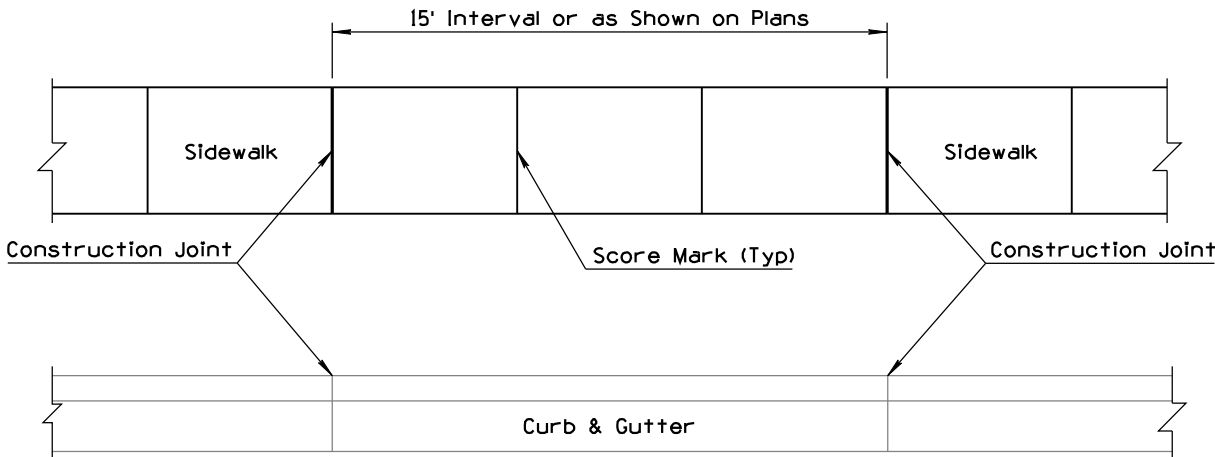
TYPE 9 - CURB & GUTTER TRANSITION

APPROVED FOR DESIGN <i>Mary Viparina</i>	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION ROADWAY STANDARD DRAWINGS	REV. 7/05
APPROVED FOR DISTRIBUTION <i>John Smith</i>	CURB AND GUTTER TRANSITIONS	DRAWING NO. ① C-05.12 Sheet 3 of 3

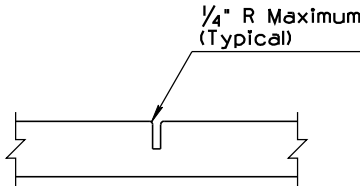
NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	NEW GENERAL NOTE 5, REARRANGED 3, 4 & 5	RLF	9/04
2	ADDED SLOPE SPECIFICATIONS & REVISED SECTION VIEWS	RLF	7/05
3			
4			



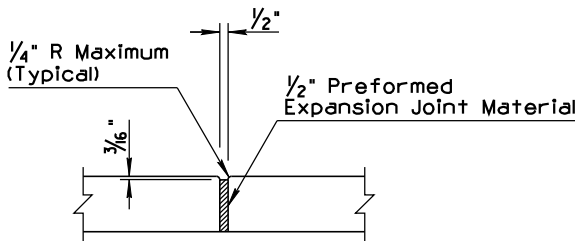
SIDEWALK ADJACENT TO CURB



SIDEWALK SETBACK FROM CURB



CONTRACTION JOINT DETAIL



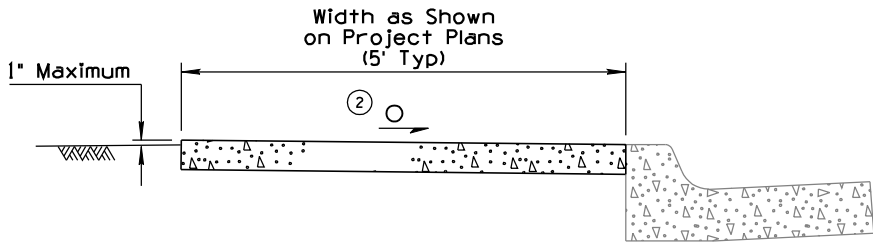
EXPANSION JOINT DETAIL

① GENERAL NOTES

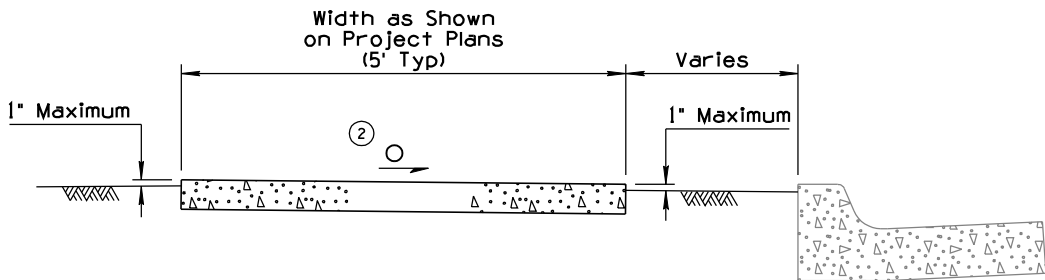
1. Unless otherwise specified, sidewalks shall be 4" thick.
2. One-inch deep transverse contraction joints shall be placed in sidewalks at intervals of approximately 15' or at a spacing that matches adjacent curb and gutter. If the sidewalk is over 7' in width, a 2" deep longitudinal contraction joint shall be placed in the center of the sidewalk. The maximum area of sidewalk without contraction joints or scoring lines shall be approximately 36 square feet. Joints shall be either formed or sawn. Formed joints shall be finished with a tool having a 1/4" radius.
3. Score marks shall be 1/4" in depth. They shall be placed at 5' spacing when the contraction joint interval is 15' and at 6' spacing when the contraction joint interval is 12'.
4. Expansion joints shall be located between sidewalks and driveways and all abutting structures. Expansion joints shall match the joints in the adjacent concrete pavement or existing concrete curb and sidewalk. Maximum length of sidewalk without an expansion joint shall be 60 transverse feet. The 1/2" joint filler shall extend the full depth of the concrete.
5. Concrete shall be finished by means of a float, then steel trowelled and then broomed with a fine brush in a transverse direction.

② LEGEND

- Minimum slope = 0.01' Per Ft
➔ Maximum slope = 0.02' Per Ft



CONCRETE SIDEWALK ADJACENT TO CURB

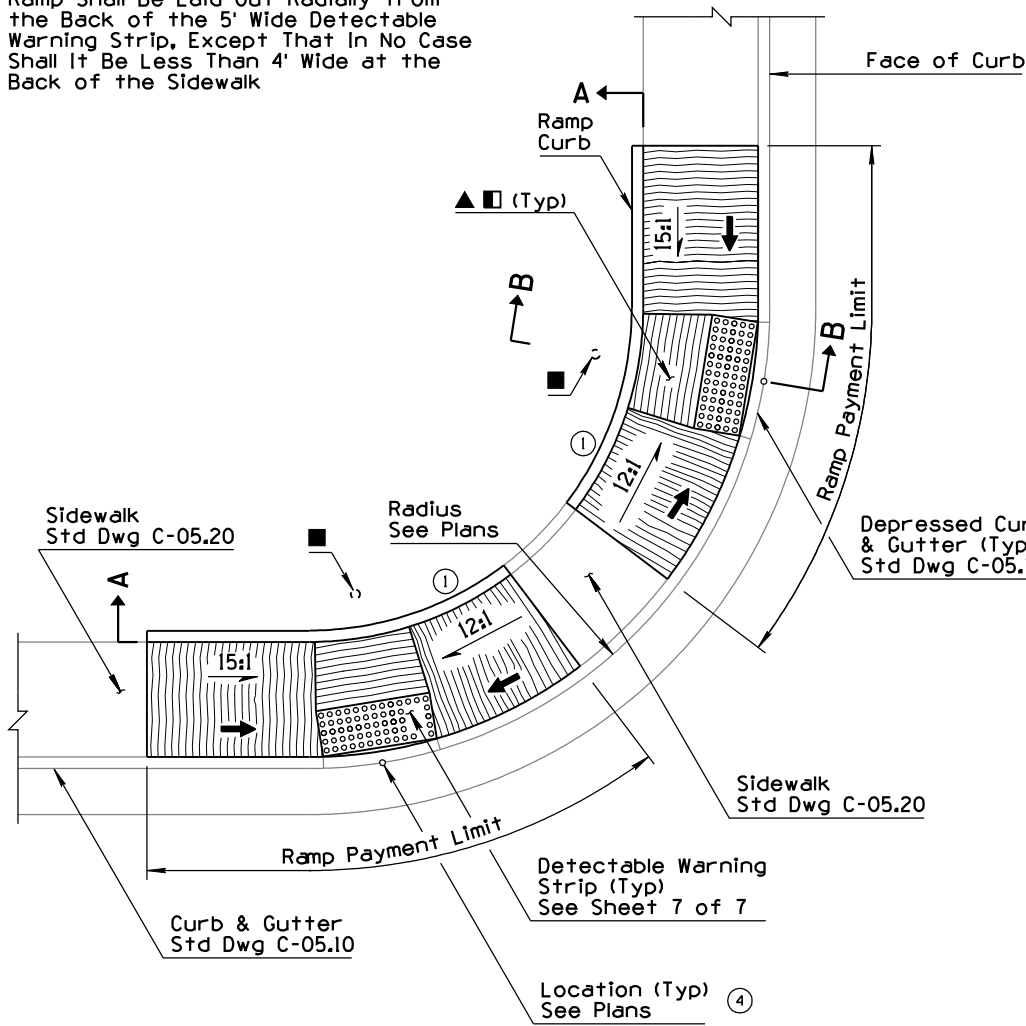


CONCRETE SIDEWALK SETBACK FROM CURB

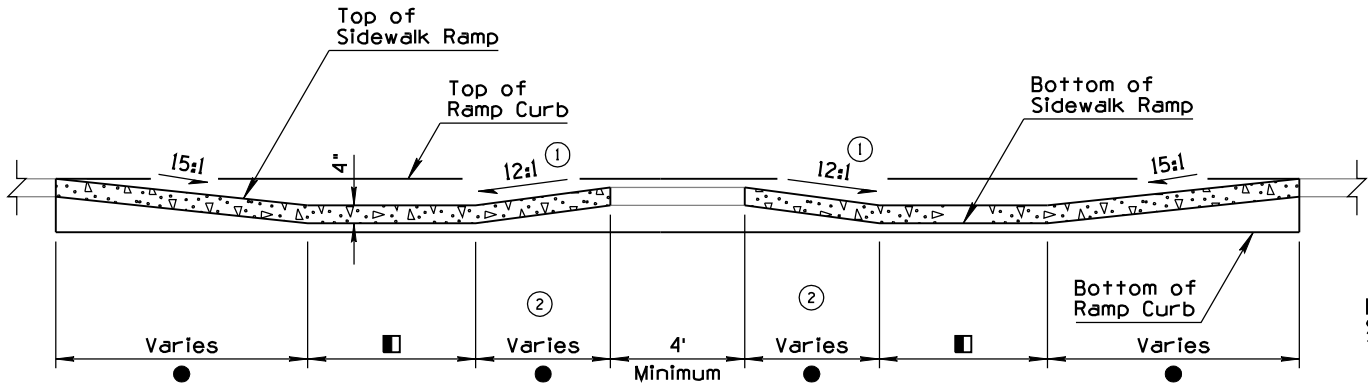
APPROVED FOR DESIGN <i>May Viparina</i>	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION ROADWAY STANDARD DRAWINGS	REV. 7/05
APPROVED FOR DISTRIBUTION <i>John [Signature]</i>	CONCRETE DRIVEWAYS & SIDEWALKS SIDEWALKS	DRAWING NO. C-05.20 Sheet 2 of 2

NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	REVISED SLOPE CALLOUT	RLF	1/05
2	REVISED SLOPE LENGTH	RLF	7/05
3	ADDED GENERAL NOTE	RLF	7/05
4	REVISED NOTE	RLF	7/05

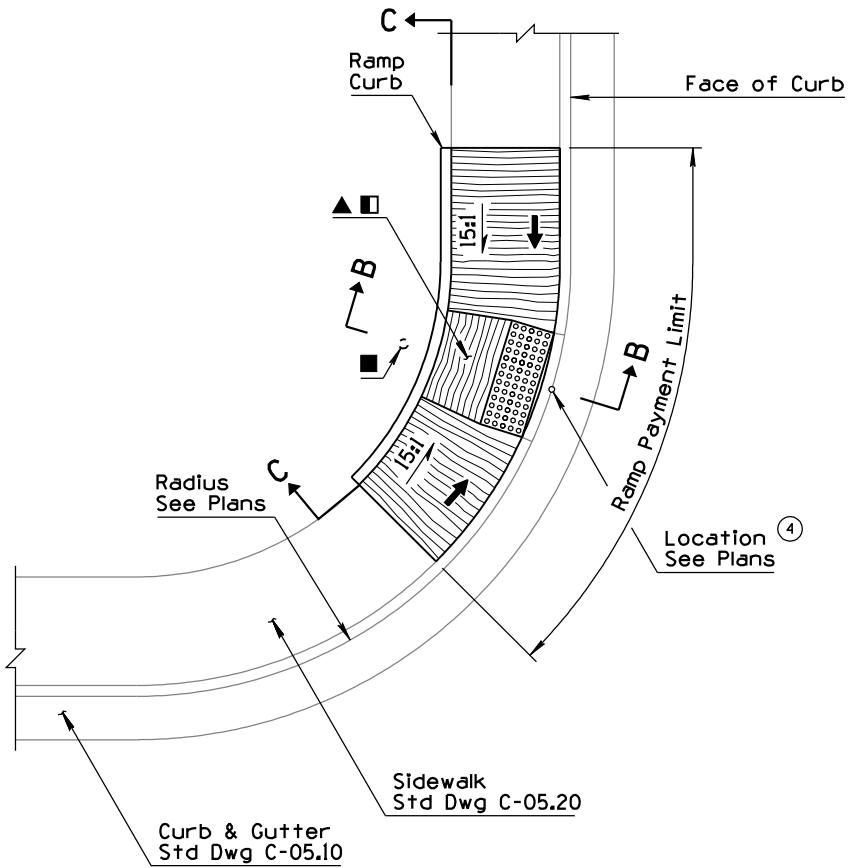
- Ramp Shall Be Laid Out Radially from the Back of the 5' Wide Detectable Warning Strip, Except That In No Case Shall It Be Less Than 4' Wide at the Back of the Sidewalk



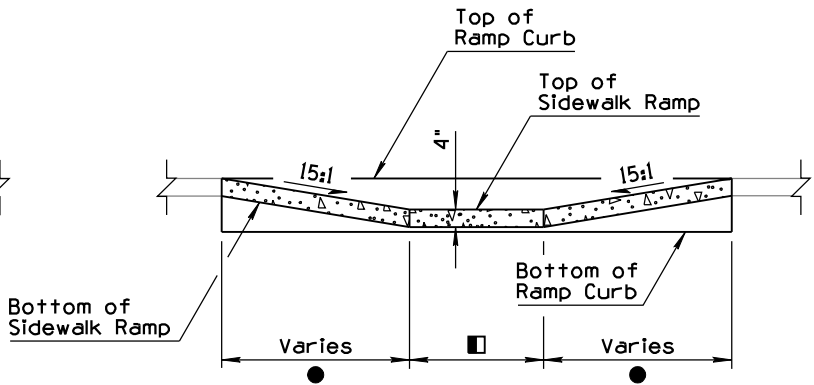
TWO CROSSING DIRECTIONS AT CORNER



SECTION A-A



ONE CROSSING DIRECTION AT CORNER



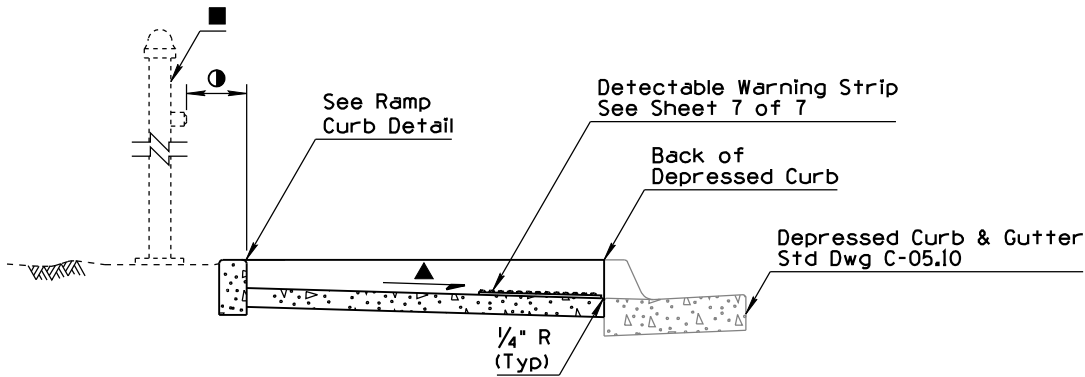
SECTION C-C

GENERAL NOTES

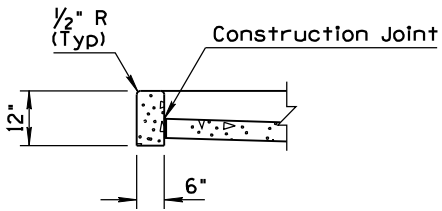
1. Ramp centerline shall be radial from the face of the curb at the Sidewalk Ramp Control Point.
 2. The ramp slopes as shown are the steepest allowed, except as provided for under Note 3.
 3. Ramp lengths shall not exceed 10' for any installation. Ten-foot long ramps may be steeper than the slopes shown in Note 2.
 4. Drainage inlets should not be located within the marked crosswalks, or if crosswalks aren't marked, within the area a standard marked crosswalk would enclose.
 5. Concrete shall receive a rough broom finish as shown.
 6. See Std Dwg C-05.10 and C-05.20 for joint details.
 7. When installing brick detectable warning strips, the contractor shall take measures to avoid damaging the truncated domes. Bricks with damaged domes shall be replaced by the contractor at no additional cost.
- See Note 3
- ① 10" Maximum to Face of Pedestrian Push Button
- Pedestrian Push Button Pole When Shown on Traffic Plans. See Traffic Signal Plans for Additional Information

LEGEND

- ▲ Minimum Slope = 100:1 (0.01 '/ft)
- ➔ Maximum Slope = 50:1 (0.02 '/ft)



SECTION B-B

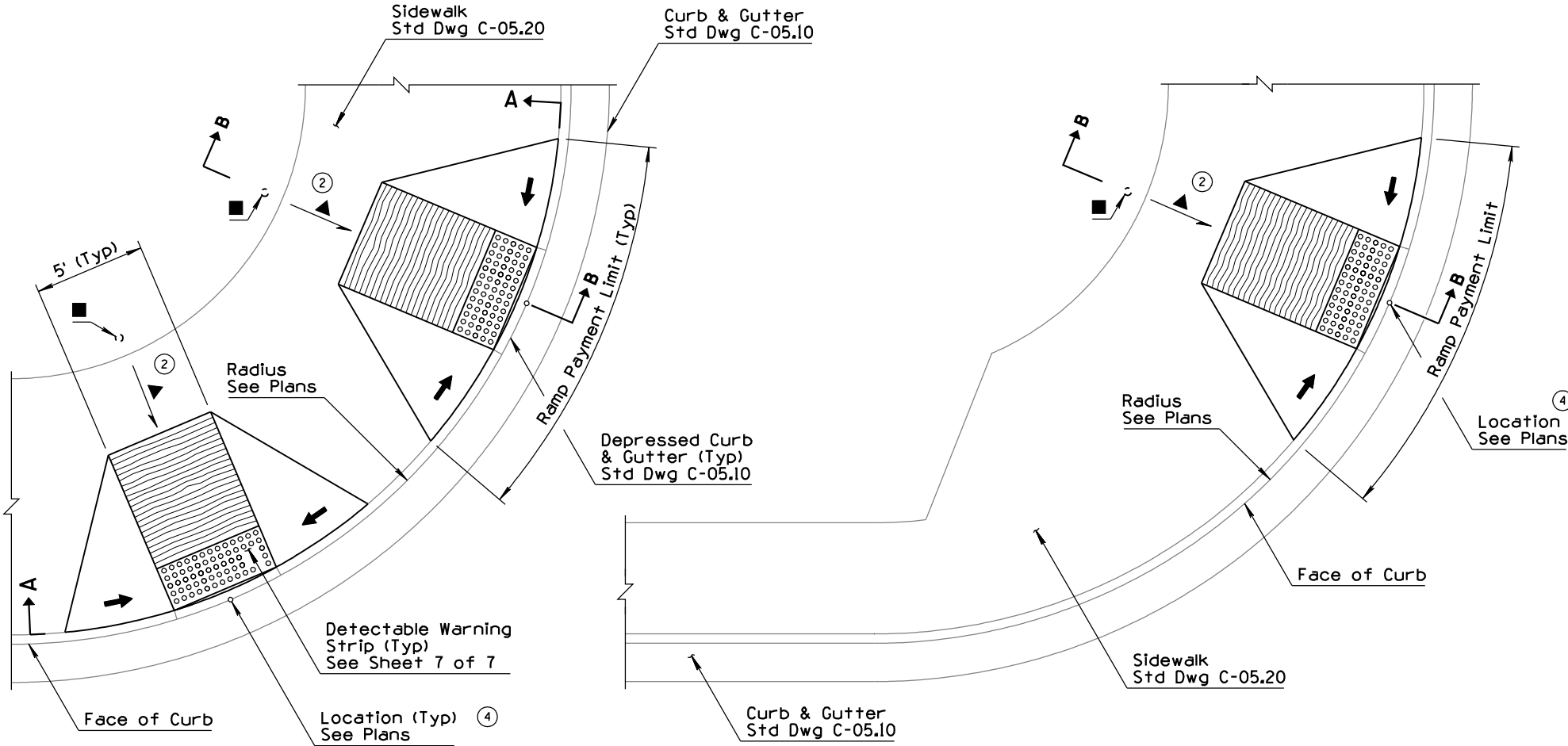


RAMP CURB DETAIL

PARALLEL SIDEWALK RAMP

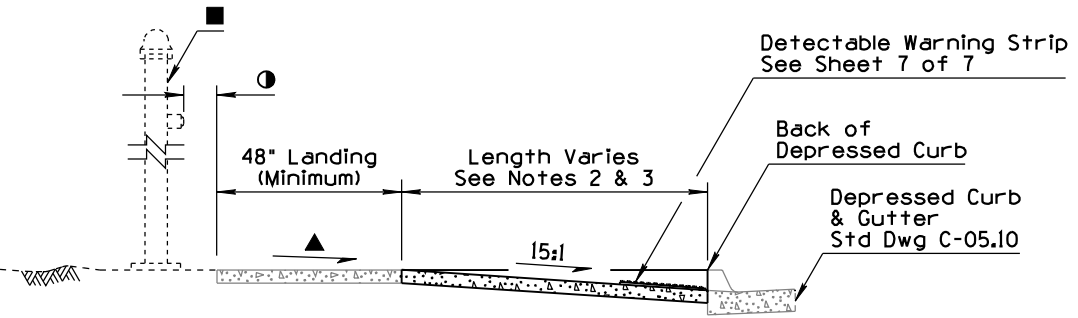
APPROVED FOR DESIGN <i>Mary Viparina</i>	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION ROADWAY STANDARD DRAWINGS	REV. 7/05
APPROVED FOR DISTRIBUTION <i>John Smith</i>	SIDEWALK RAMP TYPE A	DRAWING NO. C-05.30 Sheet 1 of 7

NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	NEW STANDARD DRAWING	RLF	9/04
2	MODIFIED SLOPE CALLOUT	RLF	1/05
3	ADDED GENERAL NOTE	RLF	7/05
4	REVISED NOTE	RLF	7/05

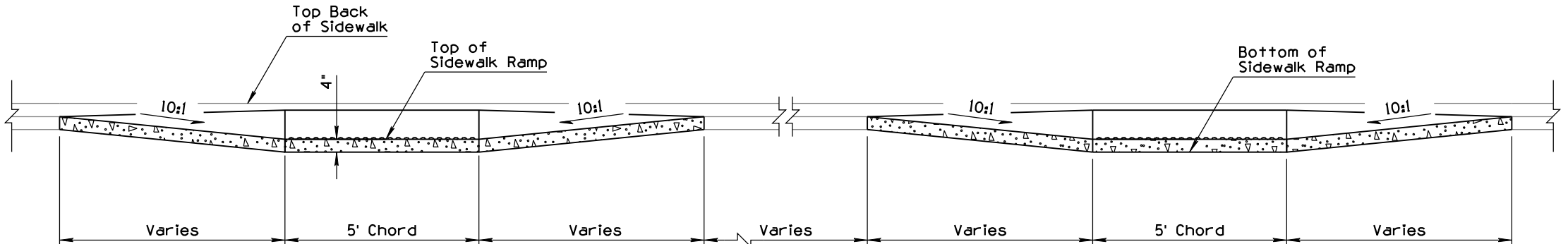


TWO CROSSING DIRECTIONS
AT CORNER

ONE CROSSING DIRECTION
AT CORNER



SECTION
B-B



SECTION
A-A

GENERAL NOTES

1. Ramp centerline shall be radial from the face of the curb at the sidewalk ramp control point.
 2. The 10:1 wing and 15:1 ramp slopes are the steepest allowed, except as provided for under Note 3.
 3. Ramp lengths shall not exceed 10' for any installation. Ten-foot long ramps may be steeper than the slope shown in Note 2.
 4. Drainage inlets should not be located within the marked crosswalks, or if crosswalks aren't marked, within the area a standard marked crosswalk would enclose.
 5. Concrete shall receive a rough broom finish as shown. The side slope wings do not receive a broom finish.
 6. The Engineer may approve replacing the side slope wing with a curb at a location where access to the side of a ramp run is blocked by a pole, utility box, other obstruction, or by a non-accessible surface such as a dirt planter strip.
 7. See Std Dwgs C-05.10 and C-05.20 for joint details.
 8. When installing brick detectable warning strips, the contractor shall take measures to avoid damaging the truncated domes. Bricks with damaged domes shall be replaced by the contractor at no additional cost.
- Pedestrian Push Button Pole When Shown on Traffic Plans. See Traffic Signal Plans for Additional Information
- ① 10" Maximum to Face of Pedestrian Push Button

LEGEND

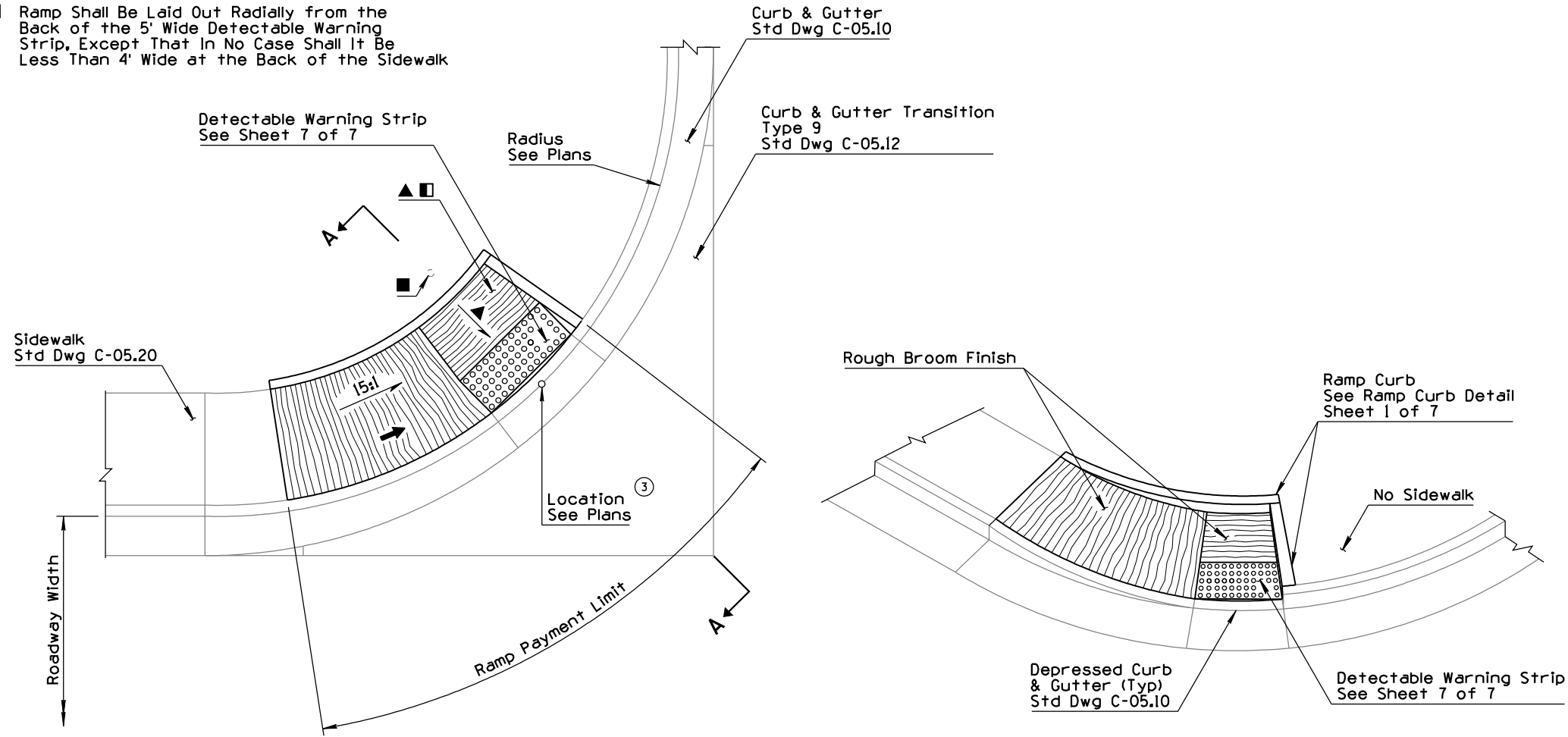
- ▲ Minimum Slope = 100:1 (0.01 '/ft)
- ▲ Maximum Slope = 50:1 (0.02 '/ft)

PERPENDICULAR CURB RAMP

APPROVED FOR DESIGN <i>Mary Viparina</i>	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION ROADWAY STANDARD DRAWINGS	REV. 7/05
APPROVED FOR DISTRIBUTION <i>John [Signature]</i>	SIDEWALK RAMP TYPE B	DRAWING NO. C-05.30 Sheet 2 of 7

NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	REISSUED STANDARD DRAWING AS SHEET 3 OF 7	RLF	9/04
2	ADDED GENERAL NOTE	RLF	7/05
3	REVISED NOTE	RLF	7/05
4			

- Ramp Shall Be Laid Out Radially from the Back of the 5' Wide Detectable Warning Strip, Except That In No Case Shall It Be Less Than 4' Wide at the Back of the Sidewalk



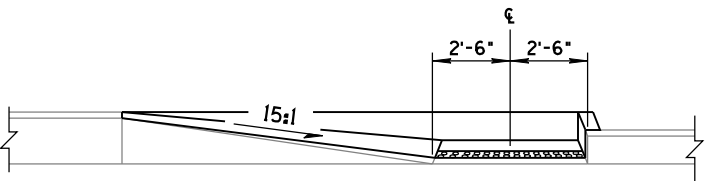
PERSPECTIVE

GENERAL NOTES

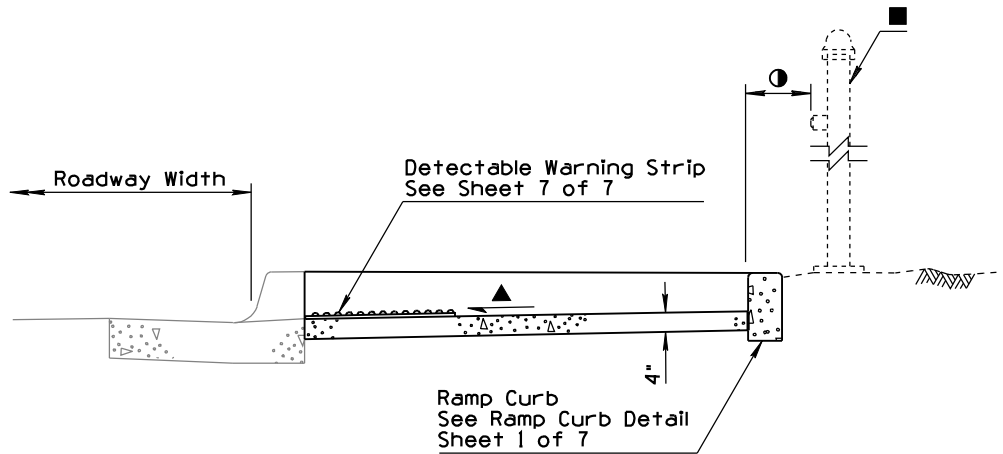
1. For use where sidewalk is not continuous.
2. Ramp centerline shall be radial from the face of the curb at the Sidewalk Ramp Control Point.
3. The 15:1 ramp slope measured at the back of sidewalk is the steepest allowed, except as provided for under Note 4.
4. Ramp lengths shall not exceed 10' for any installation. Ten-foot long ramps may be steeper than the slope shown in Note 3.
5. The top of the Ramp Curb along the back of the Sidewalk Ramp shall match the elevation of the adjacent back of sidewalk and run parallel to the Sidewalk Ramp. The Ramp Curb along the side of the Sidewalk Ramp shall match the elevation at the back of the Curb & Gutter and the back of Ramp Curb.
6. Drainage inlets should not be located within the marked crosswalks, or if crosswalks aren't marked, within the area a standard marked crosswalk would enclose.
7. Concrete shall receive a rough broom finish as shown.
8. See Std Dwgs C-05.10 and C-05.20 for joint details.
- ② 9. When installing brick detectable warning strips, the contractor shall take measures to avoid damaging the truncated domes. Bricks with damaged domes shall be replaced by the contractor at no additional cost.
- Pedestrian Push Button Pole When Shown on Traffic Plans. See Traffic Signal Plans for Additional Information
- ① 10" Maximum to Face of Pedestrian Push Button

LEGEND

- ▲ Minimum Slope = 100:1 (0.01 '/ft)
- ➔ Maximum Slope = 50:1 (0.02 '/ft)



ELEVATION
DEPRESSED CURB AT SIDEWALK RAMP



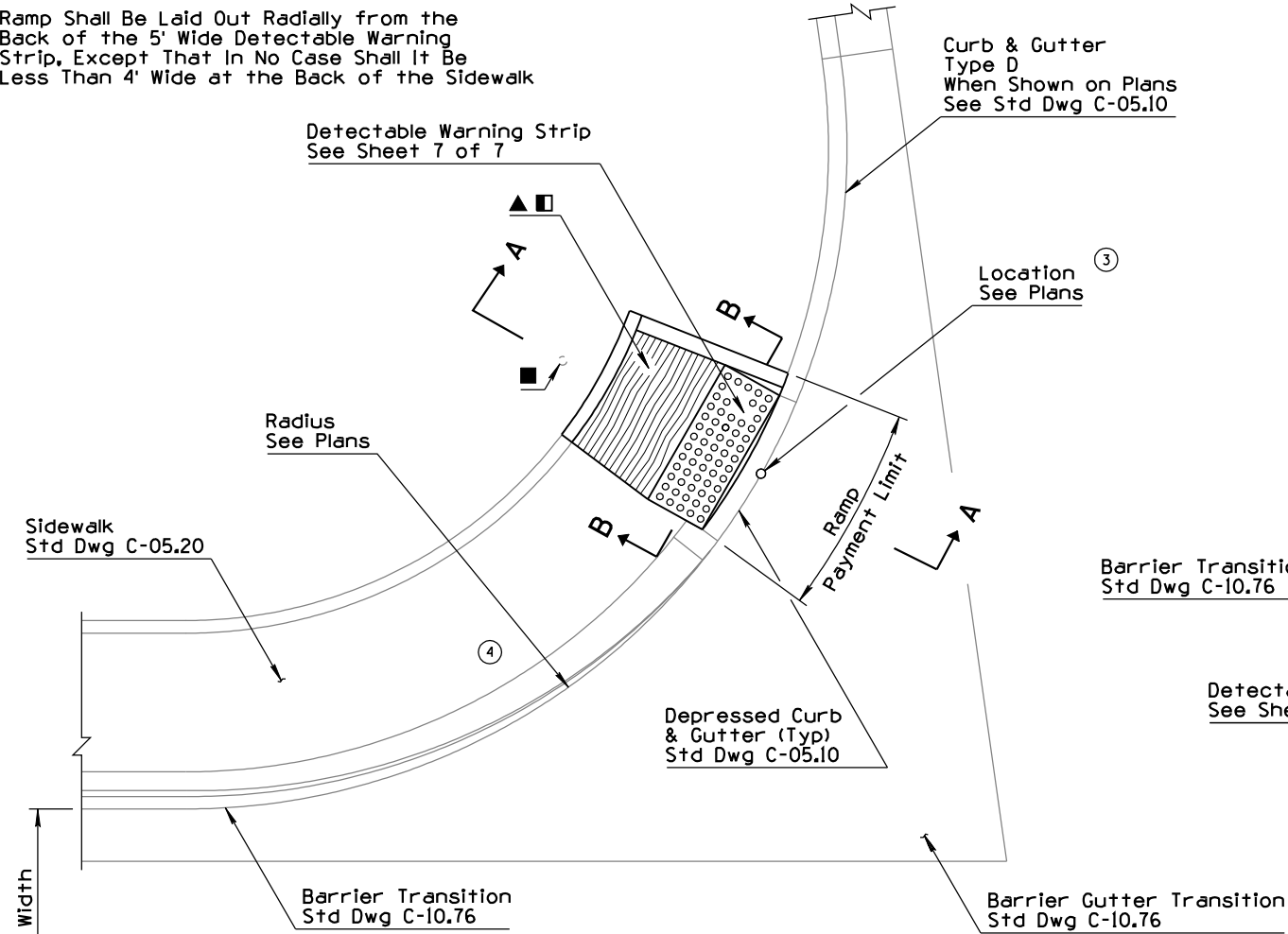
SECTION A-A

SIDEWALK RAMP AT SIDEWALK TERMINUS

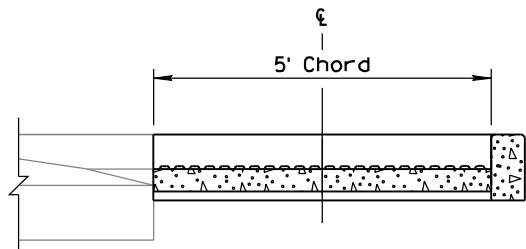
APPROVED FOR DESIGN <i>Mary Viparina</i>	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION ROADWAY STANDARD DRAWINGS	REV. 7/05
APPROVED FOR DISTRIBUTION <i>John Smith</i>	SIDEWALK RAMP TYPE C	DRAWING NO. ① C-05.30 Sheet 3 of 7

NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	REISSUED STANDARD DRAWING AS SHEET 4 OF 7	RLF	9/04
2	ADDED GENERAL NOTE	RLF	7/05
3	REVISED NOTE	RLF	7/05
4	REVISED RADIUS LOCATION	RLF	4/06

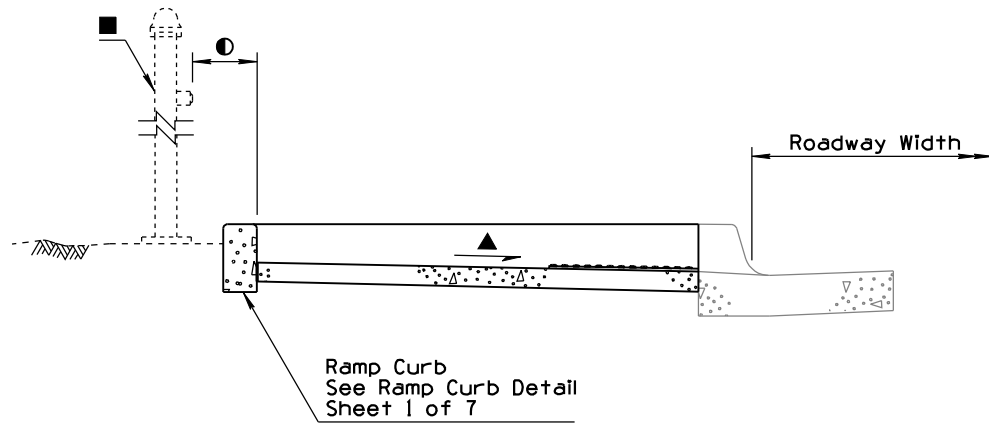
- Ramp Shall Be Laid Out Radially from the Back of the 5' Wide Detectable Warning Strip, Except That In No Case Shall It Be Less Than 4' Wide at the Back of the Sidewalk



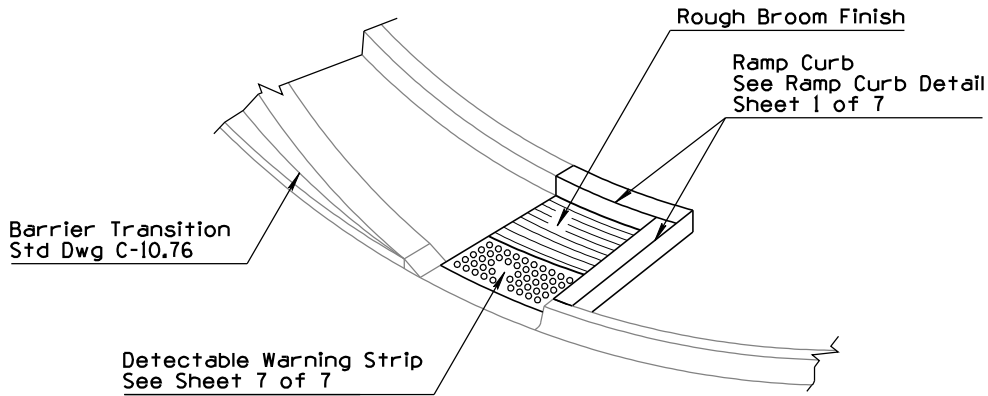
PLAN



SECTION B-B



SECTION A-A



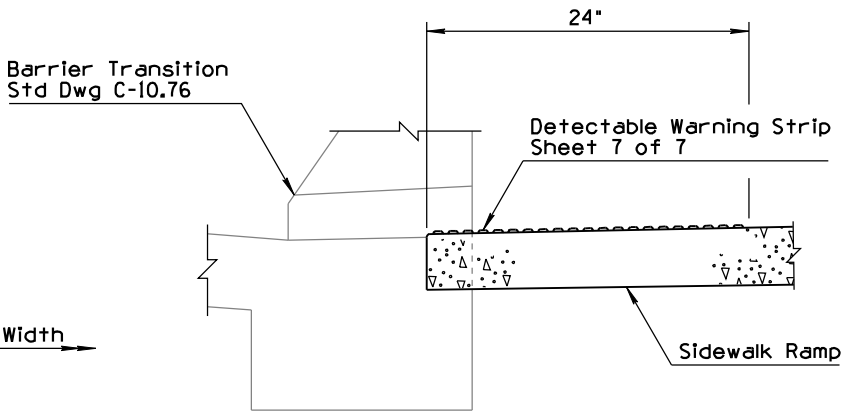
PERSPECTIVE

GENERAL NOTES

1. For use where sidewalk is not continuous.
 2. Ramp centerline shall be radial from the face of the curb at the Sidewalk Ramp Control Point.
 3. The top of the Ramp Curb along the back of the Sidewalk Ramp shall match the elevation of the adjacent back of sidewalk and run parallel to the Sidewalk Ramp. The Ramp Curb along the side of the Sidewalk Ramp shall match the elevation at the back of the Curb & Gutter and the back of Ramp Curb.
 4. Drainage inlets should not be located within marked crosswalks, or if crosswalks aren't marked, within the area a standard marked crosswalk would enclose.
 5. Concrete shall receive a rough broom finish as shown.
 6. See Std Dwgs C-05.10 and C-05.20 for joint details.
 - ② 7. When installing brick detectable warning strips, the contractor shall take measures to avoid damaging the truncated domes. Bricks with damaged domes shall be replaced by the contractor at no additional cost.
- Pedestrian Push Button Post When Shown on Traffic Plans. See Traffic Signal Plans for Additional Information
- 10" Maximum to Face of Pedestrian Push Button

LEGEND

- ▲ Minimum Slope = 100:1 (0.01 '/ft)
- ➔ Maximum Slope = 50:1 (0.02 '/ft)

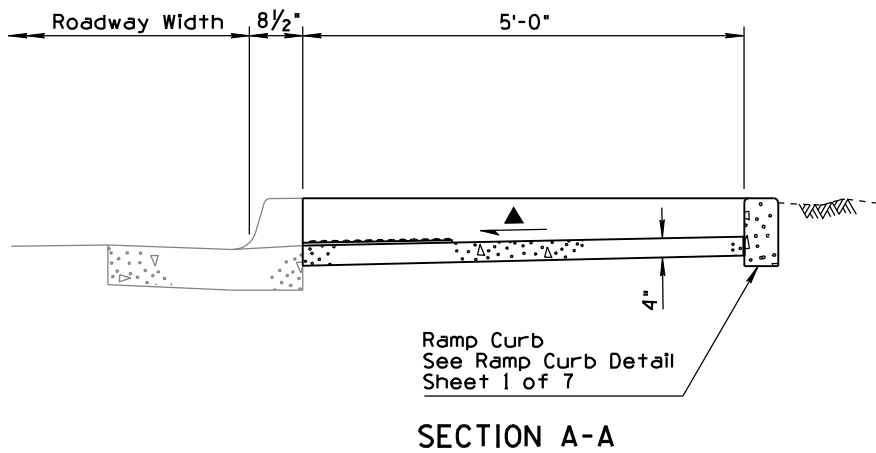
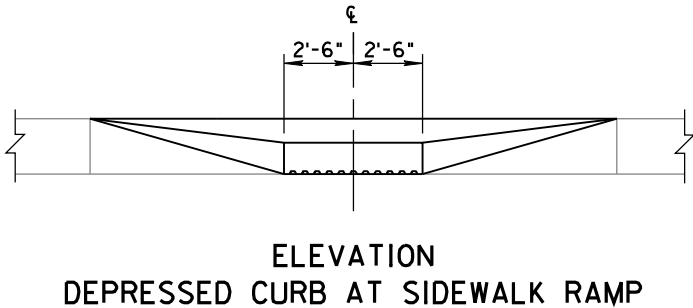
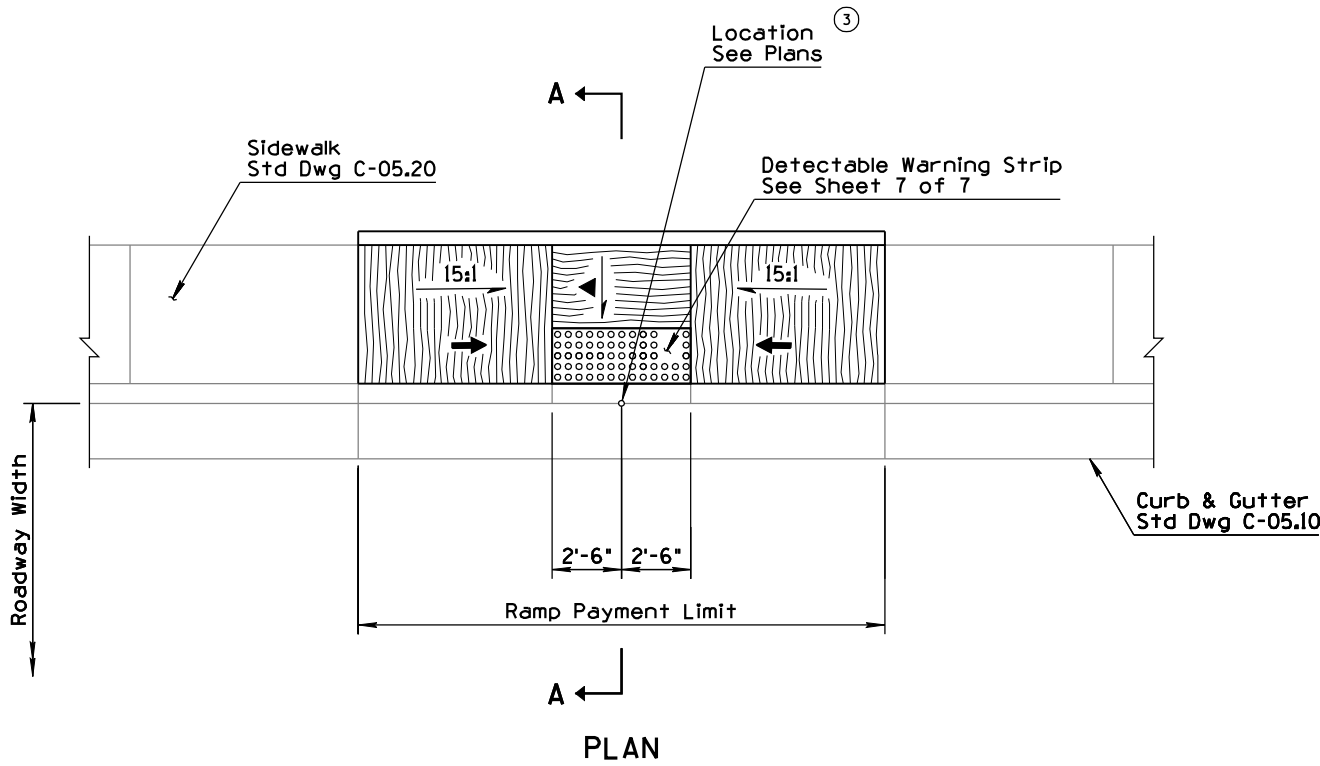


DETAIL

SIDEWALK RAMP AT SIDEWALK TERMINUS
SIDEWALK BEHIND BARRIER

APPROVED FOR DESIGN <i>Mary Viparina</i>	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION ROADWAY STANDARD DRAWINGS	REV. 7/05
APPROVED FOR DISTRIBUTION <i>John Smith</i>	SIDEWALK RAMP TYPE D	DRAWING NO. ① C-05.30 Sheet 4 of 7

NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	REISSUED STANDARD DRAWING AS SHEET 5 OF 7	RLF	9/04
2	ADDED GENERAL NOTE	RLF	7/05
3	REVISED NOTE	RLF	7/05
4			

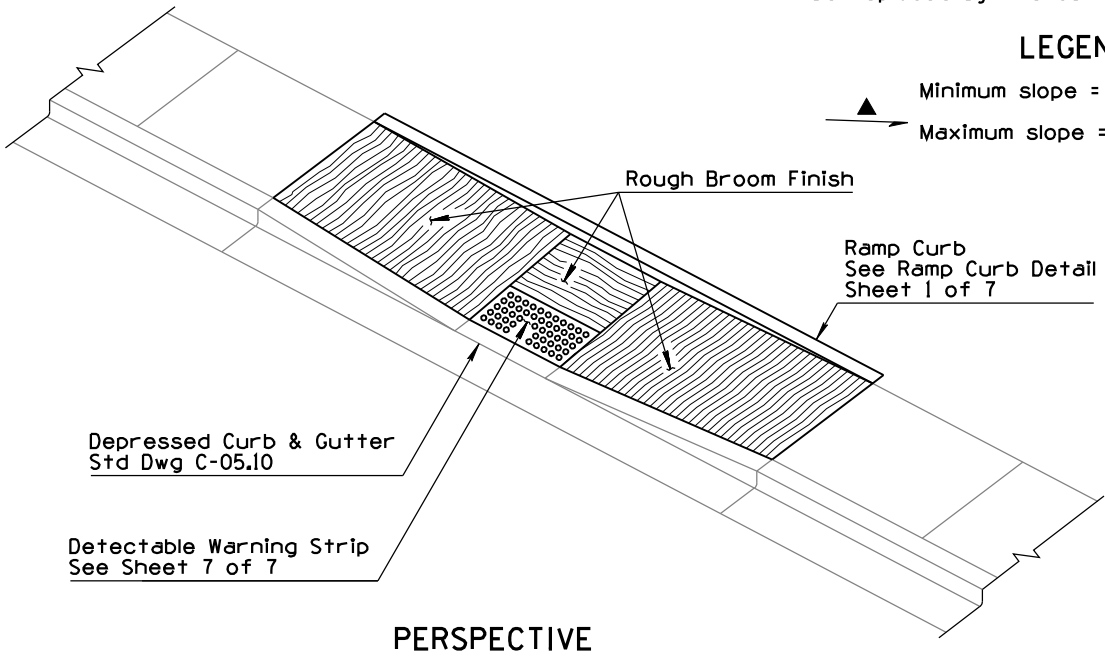


GENERAL NOTES

- For use at mid-block locations.
- Ramp centerline shall be perpendicular to the face of the curb at the Sidewalk Ramp Control Point.
- The 15:1 ramp slope is the steepest allowed, except as provided for under Note 4.
- Ramp lengths shall not exceed 10' for any installation. Ten-foot long ramps may be steeper than the slope shown in Note 3.
- For sidewalk widths greater than shown on C-05.20, the overall Sidewalk Ramp depth shall match the sidewalk width.
- Ramp curb height to match elevation at back of adjacent sidewalk.
- Drainage inlets should not be located within the marked crosswalks, or if crosswalks aren't marked, within the area a standard marked crosswalk would enclose.
- Concrete shall receive a rough broom finish as shown.
- See Std Dwgs C-05.10 and C-05.20 for joint details.
- ② 10. When installing brick detectable warning strips, the contractor shall take measures to avoid damaging the truncated domes. Bricks with damaged domes shall be replaced by the contractor at no additional cost.

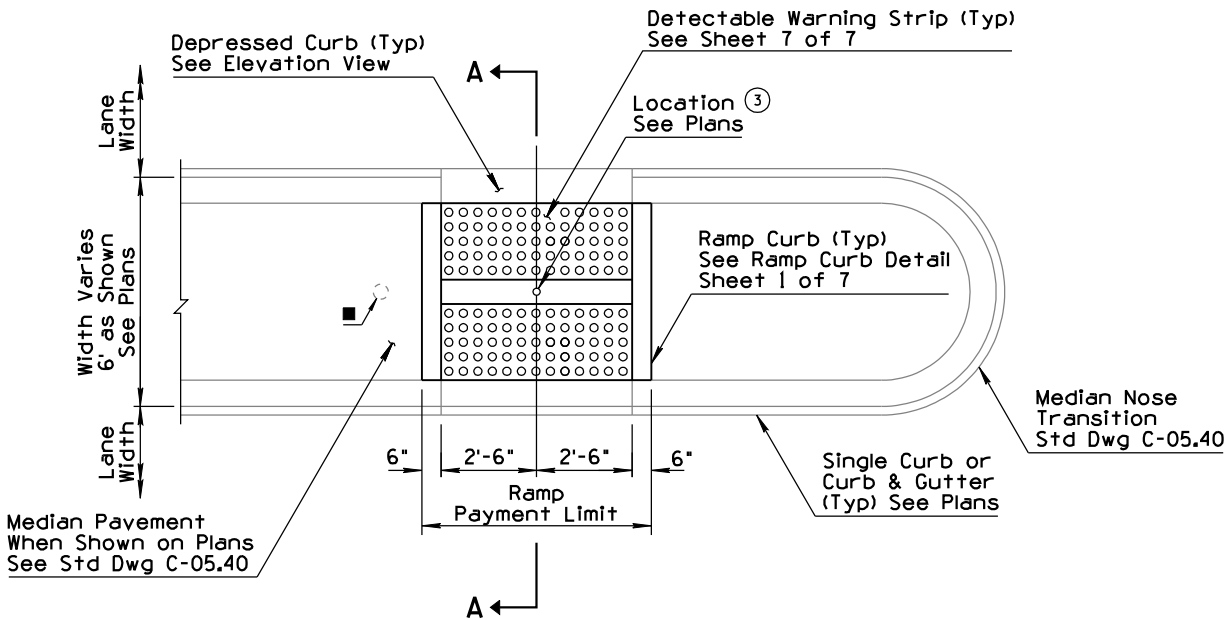
LEGEND

- ▲ Minimum slope = 100:1 (0.01 '/ft)
- ➔ Maximum slope = 50:1 (0.02 '/ft)

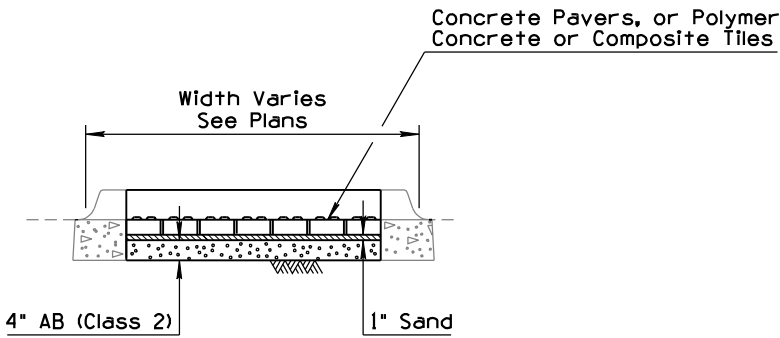


APPROVED FOR DESIGN <i>Mary Viparina</i>	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION ROADWAY STANDARD DRAWINGS	REV. 7/05
APPROVED FOR DISTRIBUTION <i>John Smith</i>	SIDEWALK RAMP TYPE E	DRAWING NO. ① C-05.30 Sheet 5 of 7

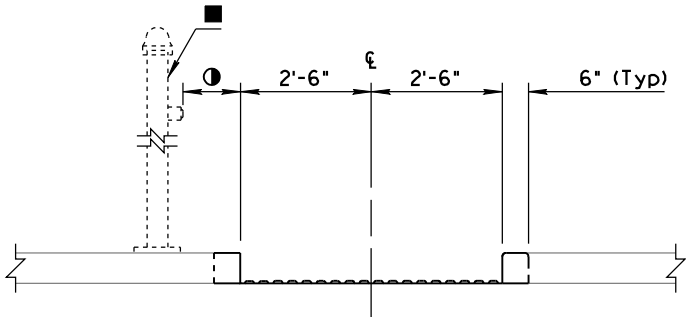
NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	REISSUED STANDARD AS SHEET 6 OF 7	RLF	9/04
2	ADDED GENERAL NOTE	RLF	7/05
3	REVISED NOTE	RLF	7/05
4			



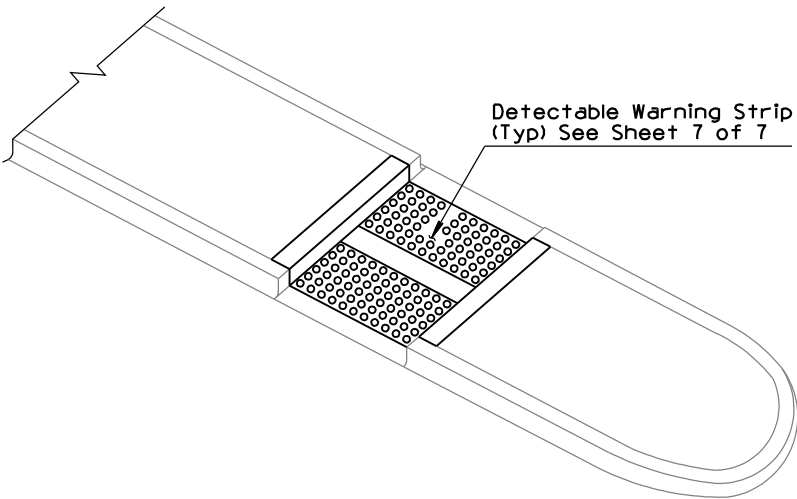
PLAN



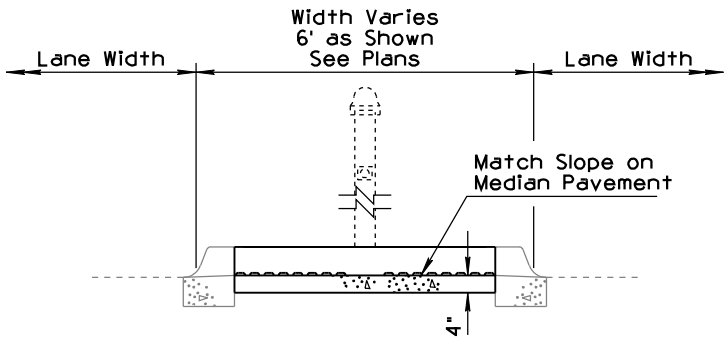
SECTION A-A
(For Median Widths Less Than 5'-5")



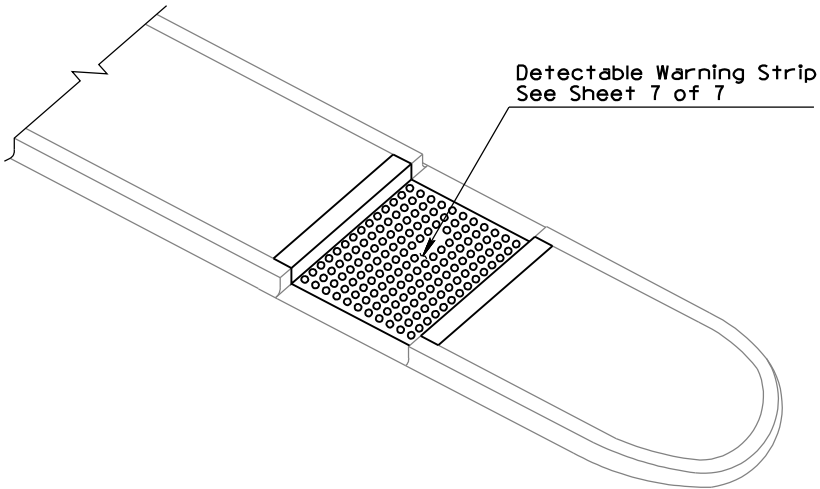
ELEVATION
DEPRESSED CURB AT SIDEWALK RAMP



PERSPECTIVE
(For Median Widths Greater Than 5'-5")



SECTION A-A
(For Median Widths Greater Than 5'-5")



PERSPECTIVE
(For Median Widths 5'-5" And Less)
See Note 1

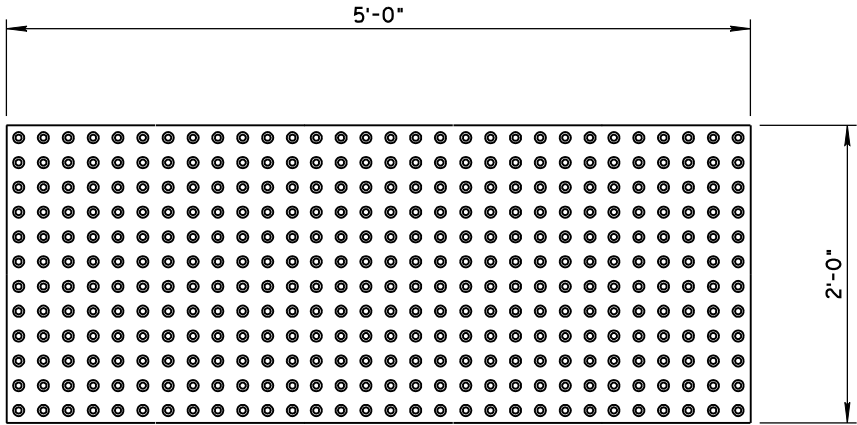
GENERAL NOTES

1. For median widths 5'-5" and less, the Detectable Warning Strip shall be continuous from back-of-curb to back-of-curb. The Detectable Warning Strip shall not extend beyond the back of curb. Modular units such as bricks or tiles shall be used to construct the Detectable Warning Strip. Partial domes at the edge of the Strip shall be ground flush with the brick or tile surface.
 2. Use Type A1 curb if median is to be landscaped.
 3. Single curb shown; see plans for Curb & Gutter application.
 - ② 4. When installing brick detectable warning strips, the contractor shall take measures to avoid damaging the truncated domes. Bricks with damaged domes shall be replaced by the contractor at no additional cost.
- Pedestrian Push Button Pole When Shown on Plans. See Traffic Signal Plans for Additional Information
- 10" Maximum to Face of Pedestrian Push Button

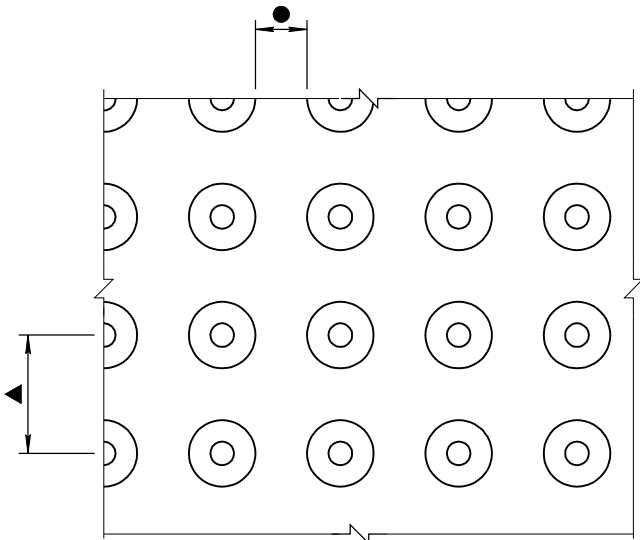
SIDEWALK RAMP AT MEDIAN ISLAND CROSSING

APPROVED FOR DESIGN <i>Mary Viparina</i>	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION ROADWAY STANDARD DRAWINGS	REV. 7/05
APPROVED FOR DISTRIBUTION <i>John Smith</i>	SIDEWALK RAMP TYPE F	DRAWING NO. ① C-05.30 Sheet 6 of 7

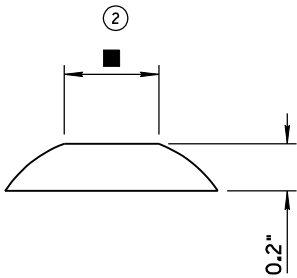
NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	NEW STANDARD DRAWING	RLF	9/04
2	REVISED DIMENSION CALLOUT	RLF	7/05
3			
4			



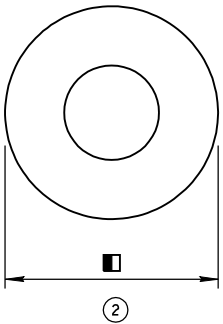
DETECTABLE WARNING STRIP
PLAN



TEXTURE PATTERN
DETAIL



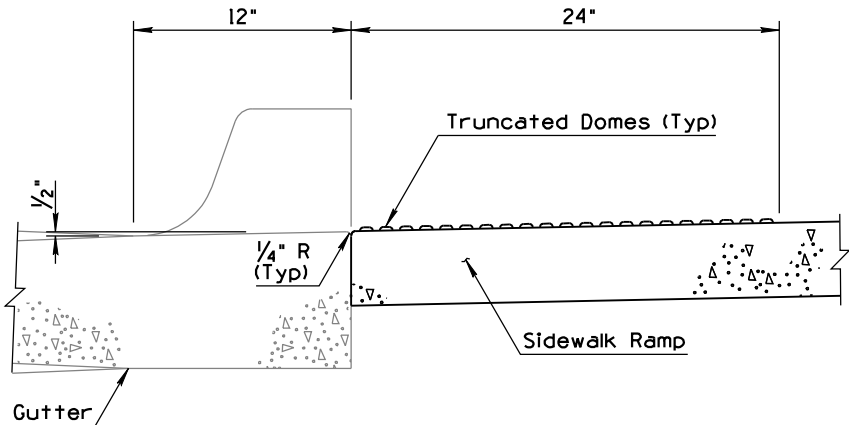
TRUNCATED DOME
ELEVATION



TRUNCATED DOME
DETAIL

LEGEND

- 1/16" Minimum (Typ) (0.65" Minimum ADA Actual)
- ▲ 1 5/8" to 2 3/8" (Typ) (1.6" to 2.4" ADA Actual)
- 7/8" to 1 3/8" (Typ) (0.9" to 1.4" ADA Actual)
- 50% to 65% of ■

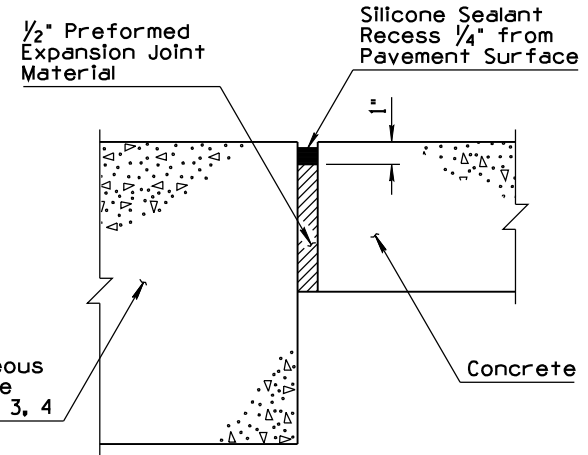
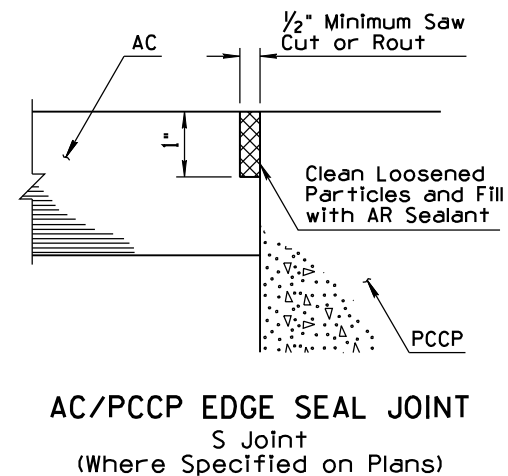
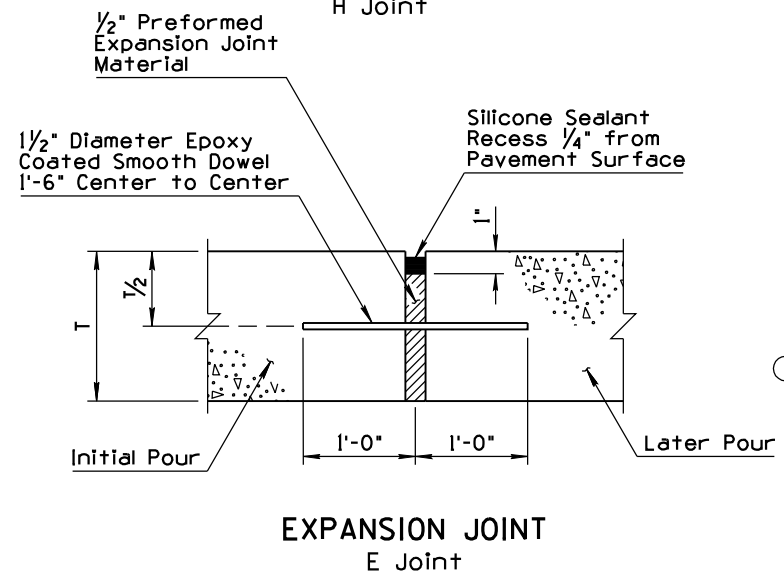
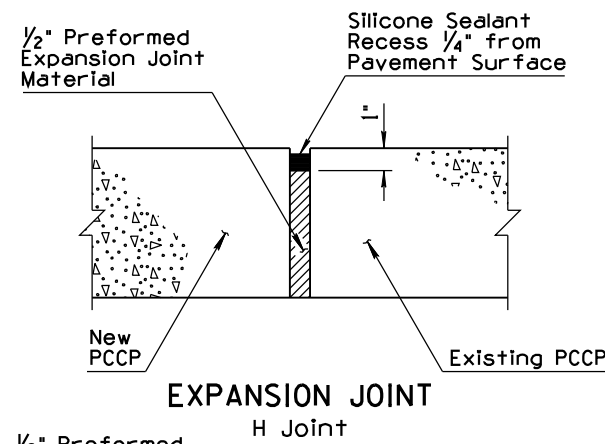
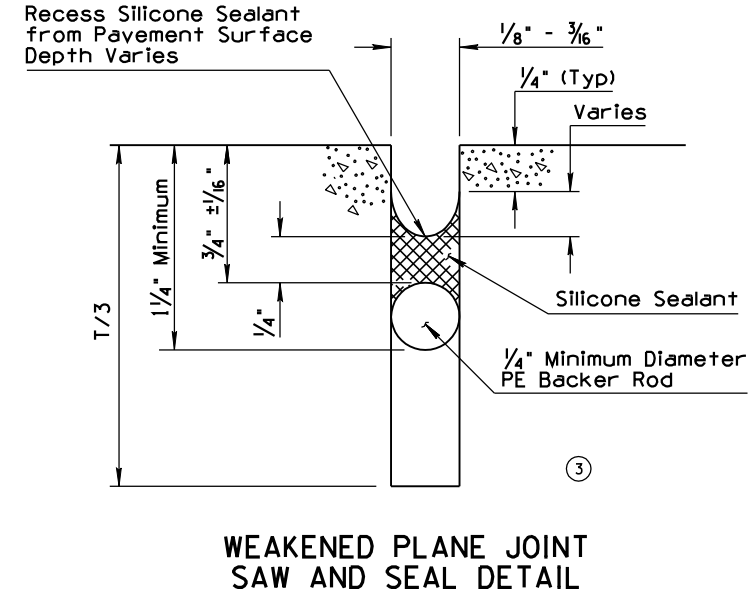
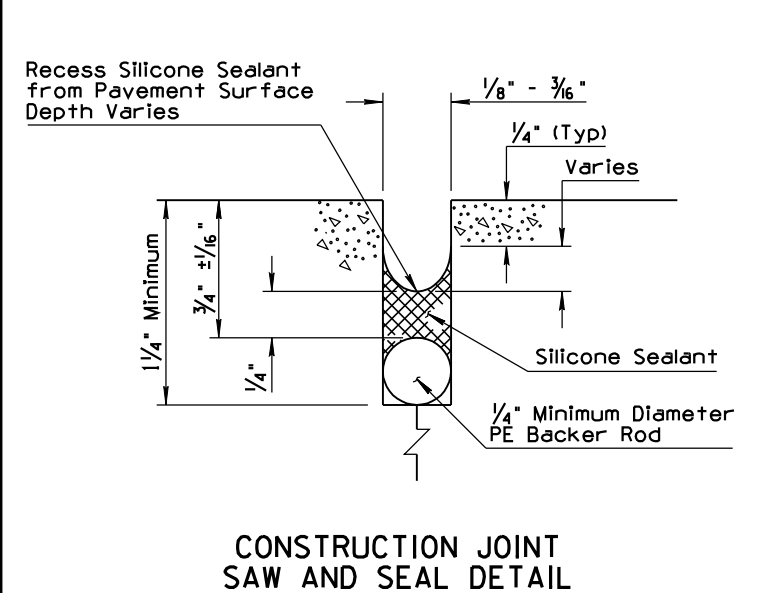
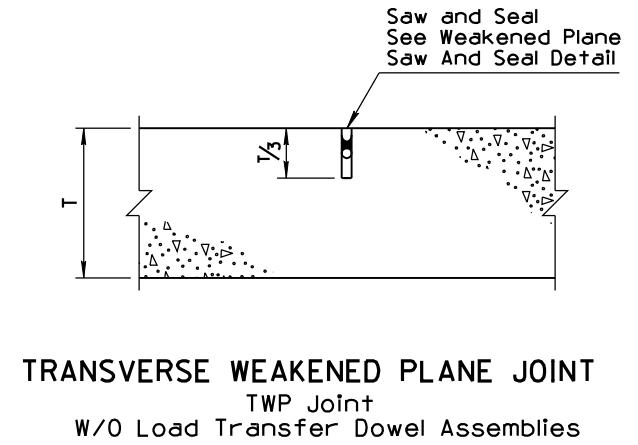
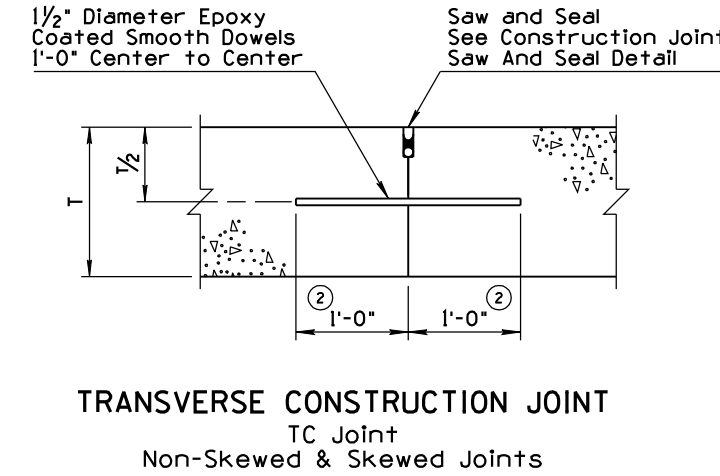
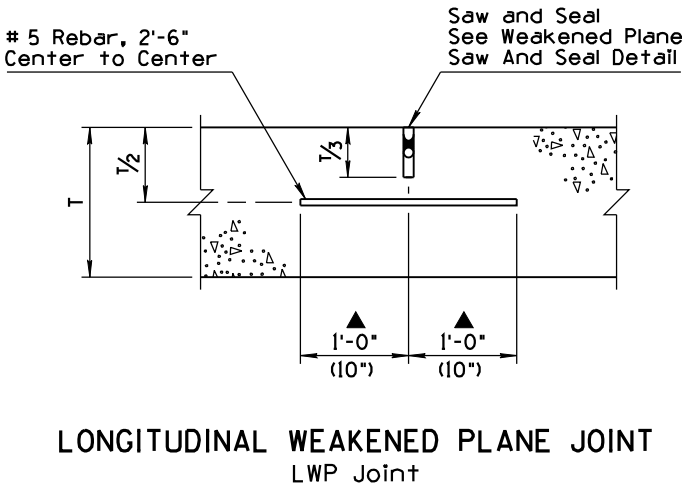
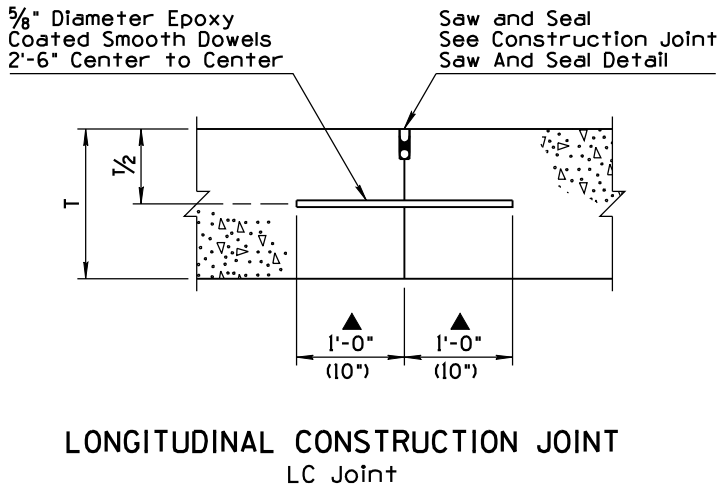


TRUNCATED DOME
DETAIL

DETECTABLE WARNING STRIP
DETAIL

APPROVED FOR DESIGN <i>Mary Viparina</i>	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION ROADWAY STANDARD DRAWINGS	REV. 7/05
APPROVED FOR DISTRIBUTION <i>John [Signature]</i>	SIDEWALK RAMP DETECTABLE WARNING STRIP	DRAWING NO. ① C-05.30 Sheet 7 of 7

NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	ADDED DEFINITION FOR 'PE'	RLF	9/04
2	REVISED DIMENSION FORMAT	RLF	7/05
3	REMOVED 'INITIAL SAWCUT' NOTATION	RLF	7/05
4			

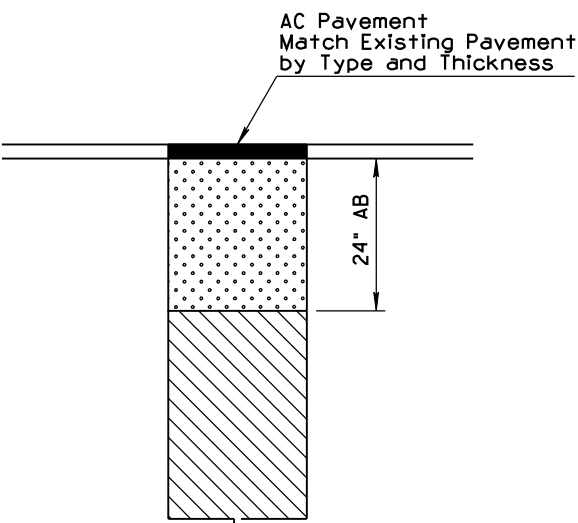


- GENERAL NOTES**
1. When load transfer dowel assemblies are required, use dimensions shown in ()'s. See Assembly Placement And Edge Clearance Detail, Std Dwg C-07.02.
 2. In slip form type pavement construction, LWP joints shall be used. In fixed form construction either LWP or LC joints may be used.
 3. K joints shall be constructed around the complete perimeter of miscellaneous structures, or as directed by the Engineer.
 4. Miscellaneous structures include, but are not limited to, catch basins, sign structure foundations, piers, abutments, barrier transitions, slotted drains and other concrete facilities, constructed within the right-of-way.

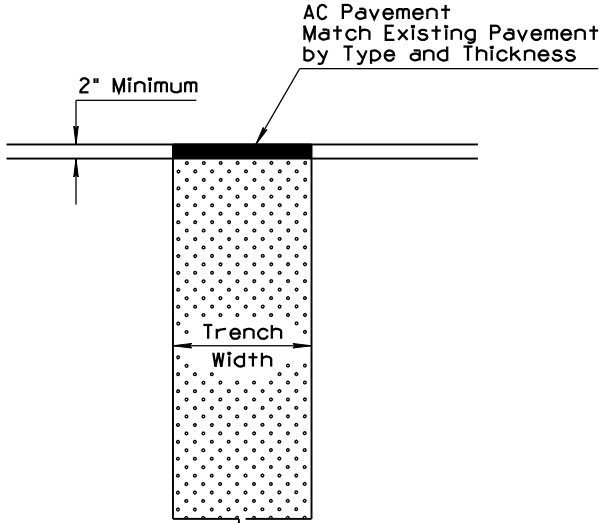
- JOINT ABBREVIATIONS**
- LWP - Longitudinal Weakened Plane Joint
 - TWP - Transverse Weakened Plane Joint
 - LC - Longitudinal Construction Joint
 - TC - Transverse Construction Joint
 - E, H, K - Expansion Joints
 - S - AC/PCCP Edge Seal Joint
 - T - PCCP Thickness
 - ① PE - Polyethylene

APPROVED FOR DESIGN <i>Mary Viparina</i>	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION ROADWAY STANDARD DRAWINGS	REV. 7/05
APPROVED FOR DISTRIBUTION <i>John Smith</i>	PCCP JOINTS	DRAWING NO. C-07.01 Sheet 1 of 2

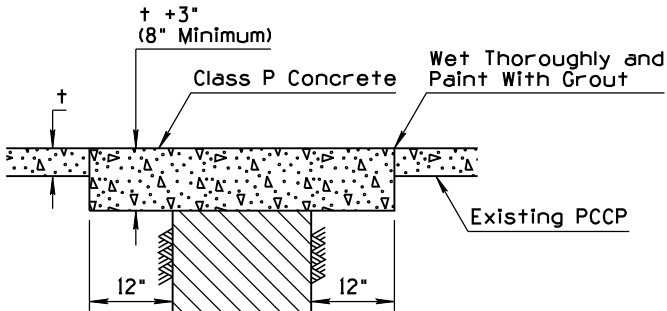
NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	REVISED NOTE	PNB	10/95
2	DELETED TYPE E VIEW	RLF	7/05
3	MODIFIED STANDARD SPECIFICATION REFERENCE	RLF	7/05
4			



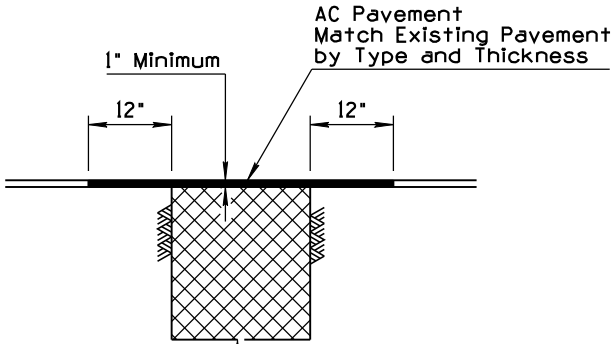
TYPE A



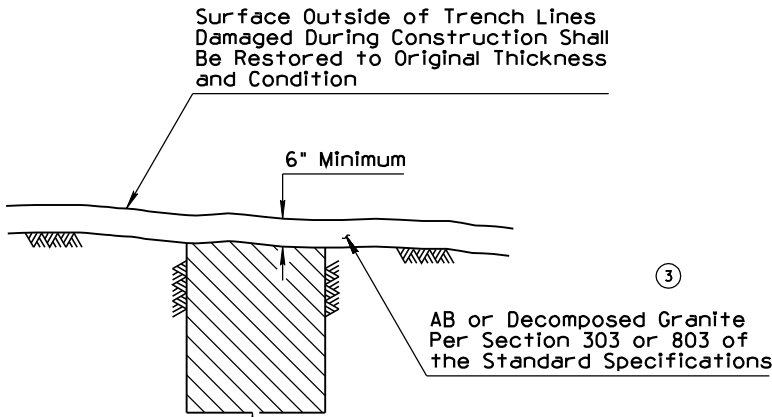
TYPE B



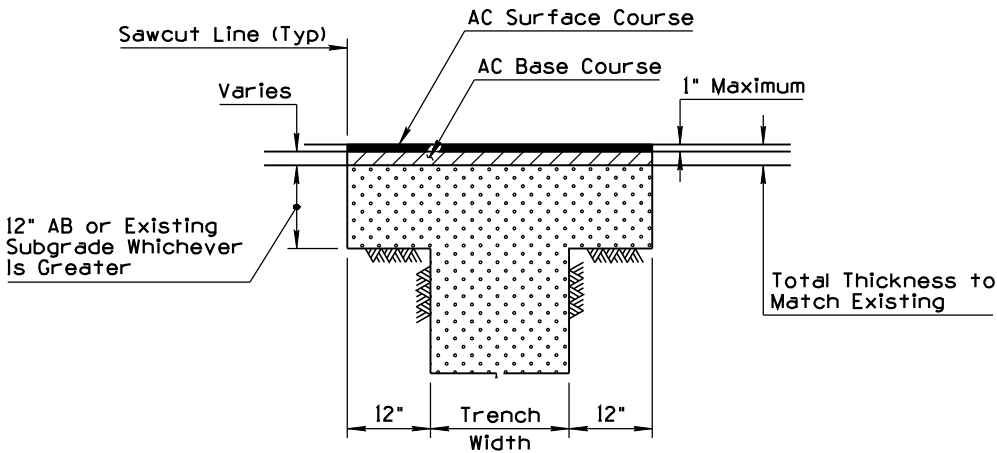
TYPE C



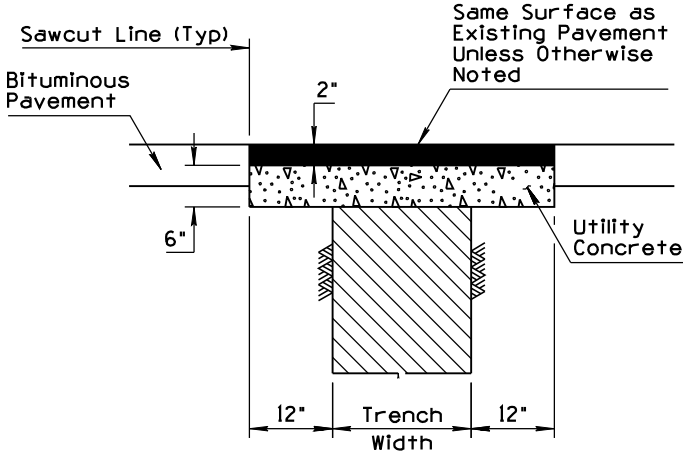
TYPE D



TYPE F



TYPE G



TYPE H

GENERAL NOTES

1. Bedding per Section 501 of the Standard Specifications.
2. Asphalt concrete shall be in accordance with the requirements of the Standard Specifications.
3. 12" lip is required on the sides of trenches that are not parallel at the center line of the street.
4. Type D requires 9" of AB at top of trench when there is an existing base.
5. See Std Dwg C-13.15 for typical pipe installation.

LEGEND

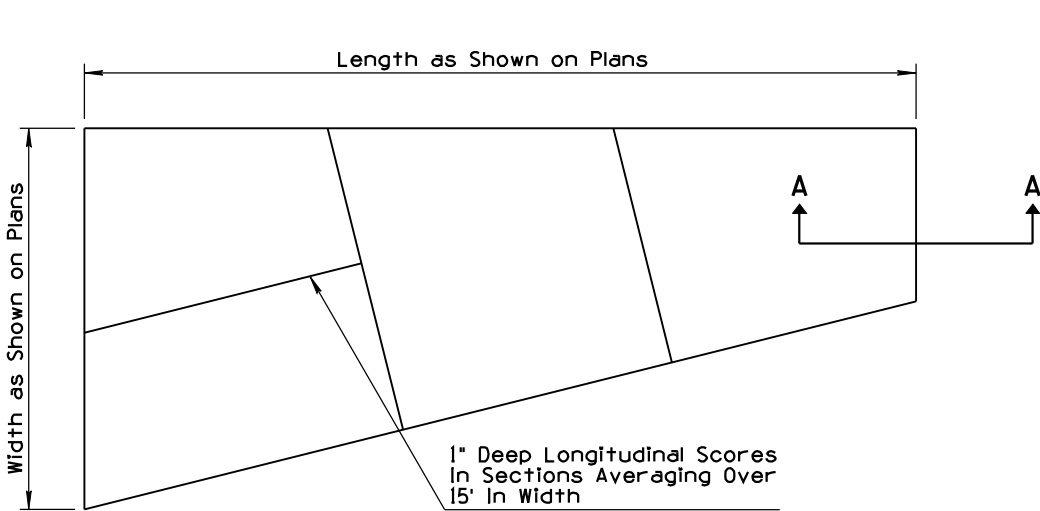
- Compacted Backfill or Slurry Per Section 501 of the Standard Specifications
- AB, Granular Backfill or Native Backfill Per Sections 303 and 501 of the Standard Specifications
- AB Per Sections 303 and 501 of the Standard Specifications

APPROVED FOR DESIGN <i>May Viparina</i>	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION ROADWAY STANDARD DRAWINGS	REV. 7/05
APPROVED FOR DISTRIBUTION <i>John Smith</i>	TRENCH BACKFILL AND PAVEMENT REPLACEMENT	DRAWING NO. C-07.06

NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	DELETED PLAN VIEW AND SECTION	RLF	9/04
2	REVISED & RENAMED SECTION	RLF	9/04
3	REMOVED TITLE	RLF	11/04
4	REVISED SECTION GRAPHICS	RLF	7/05

GENERAL NOTES

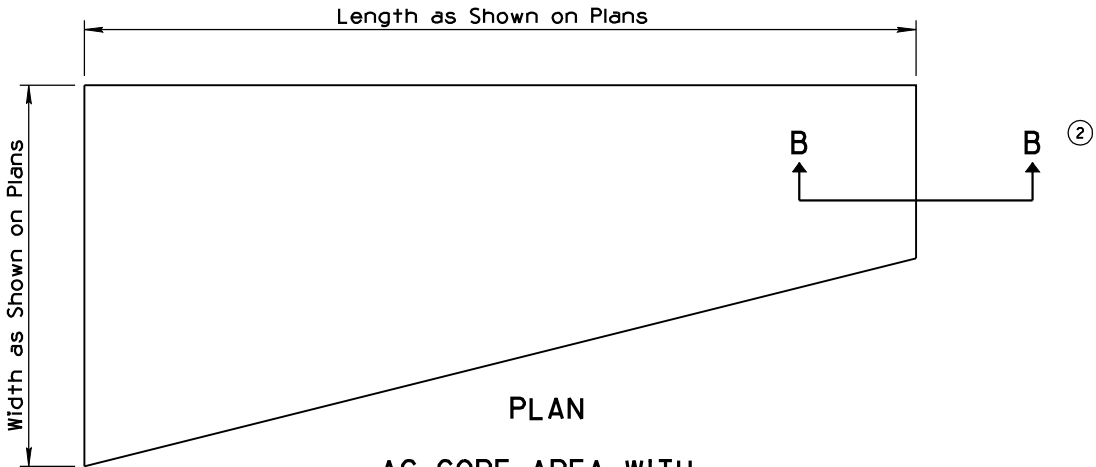
- Paved gore area shall be Class S Concrete, $f'_c=4000$ PSI or AC as shown on plans.
- See Std Dwgs C-07.01 and C-07.04 for joint layout and details.



PLAN
CONCRETE GORE AREA
WITH ABUTTING CONCRETE PAVEMENT

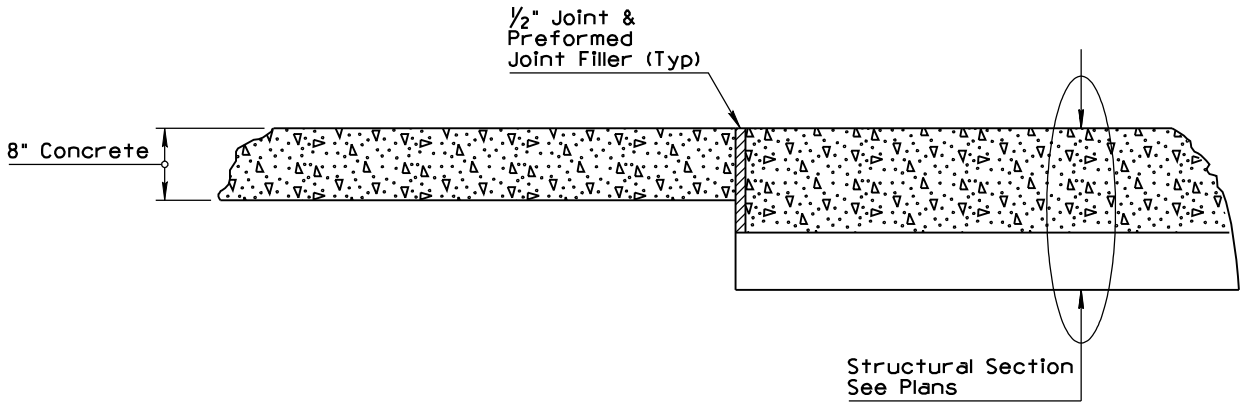
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3



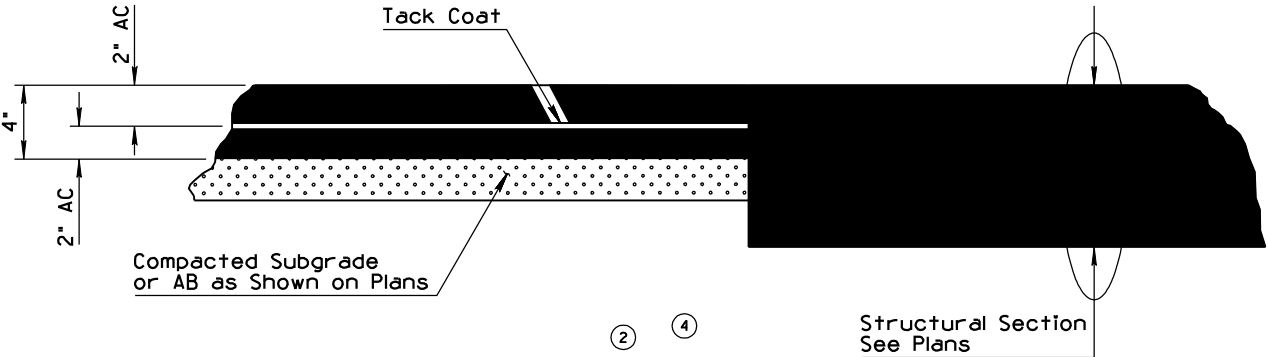
PLAN
AC GORE AREA WITH
ABUTTING AC PAVEMENT

2



SECTION A-A

1



SECTION B-B

2

4

APPROVED FOR DESIGN <i>Mary Viparina</i>	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION ROADWAY STANDARD DRAWINGS	REV. 7/05
APPROVED FOR DISTRIBUTION <i>John [Signature]</i>	PAVED GORE AREA	DRAWING NO. C-08.20

NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	REVISED BARRIER TRANSITION	RLF	7/05
2			
3			
4			

W-Beam Guardrail End Anchor
Std Dwg C-10.08 (When Called for
on Plans) Measurement (Ea)
See Note 3

W-Beam Guardrail
Measurement (Lin Ft)

Guardrail End Terminal
Measurement (Ea)
37'-6" or 50'-0"

12'-6"

Traffic

W-Beam Guardrail
Measurement (Lin Ft)

Std Dwg C-10.06
Nested W-Beam Guardrail
Type 1, 2, or 3
Measurement (Lin Ft)
25'-0" or 37'-6"
See Note 4

Guardrail End Terminal
Measurement (Ea)
37'-6" or 50'-0"

Bolted Anchor
for Guardrail
Std Dwg C-10.07
Measurement (Ea)
Number Per Plans

Shallow
Box
Culvert

Shallow
Pipe or
Spillway/Downdrain Inlet

Traffic

Std Dwg C-10.30
Thrie-Beam Guardrail
Transition to Concrete
Half Barrier
Measurement (Ea)

Std Dwg C-10.70, 10.71,
10.72 or 10.73 Concrete
Half-Barrier Transition
Measurement (Ea)

Std Dwg C-10.70, 10.71,
10.72 or 10.73 Concrete
Half-Barrier Transition
Measurement (Ea)

Std Dwg C-10.30
Thrie-Beam Guardrail
Transition to Concrete
Half Barrier
Measurement (Ea)

W-Beam Guardrail
Measurement (Lin Ft)

W-Beam Guardrail
Measurement (Lin Ft)

Concrete
Barrier

Caissons or Footings

Traffic

Caissons or Footings

CONCRETE HALF-BARRIER TRANSITION
OFF STRUCTURE

W-Beam Guardrail
Measurement (Lin Ft)

Thrie-Beam Guardrail Transition
to Bridge Concrete Barrier
Transition Measurement
See Bridge Sheets

Bridge Concrete Barrier
See Bridge Sheets

Thrie-Beam Guardrail Transition
to Bridge Concrete Barrier
Transition Measurement
See Bridge Sheets

W-Beam Guardrail
Measurement (Lin Ft)

Traffic

Bridge Concrete
Barrier Transition
Measurement
See Bridge Sheets

Bridge Concrete
Barrier Transition
Measurement
See Bridge Sheets

CONCRETE HALF-BARRIER TRANSITION ON STRUCTURE

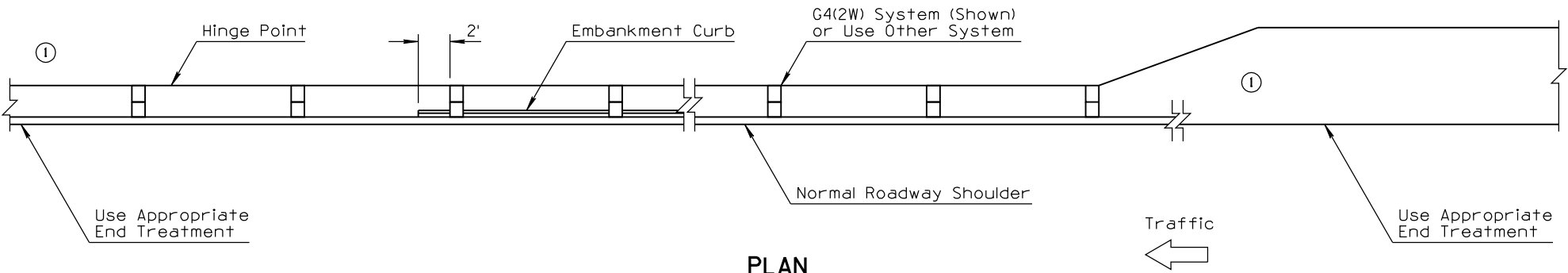
Concrete Barrier Transitions
Constructed on Top of Wingwalls

GENERAL NOTES

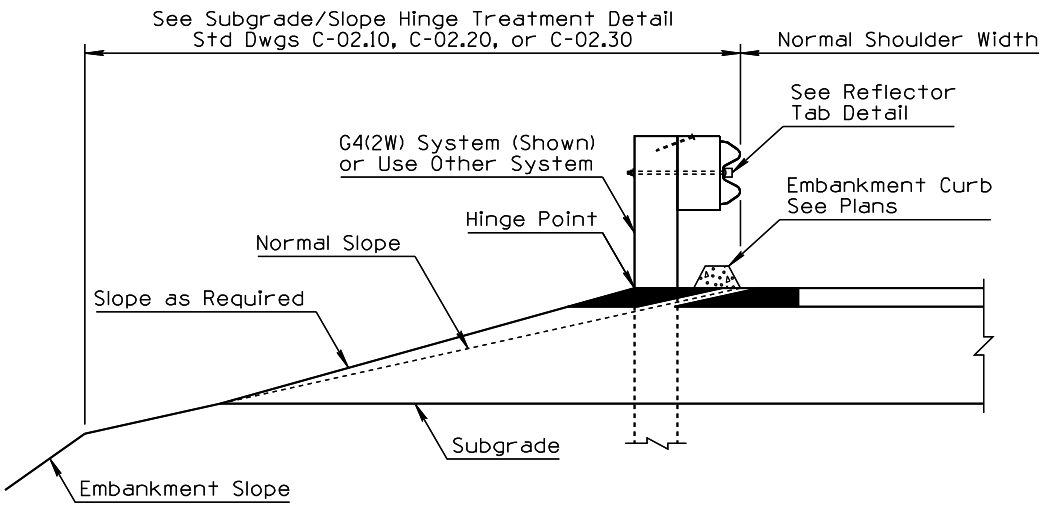
1. Lengths as shown unless otherwise indicated on project plans.
2. Post type (timber or steel) for transitions shall match post type of adjoining guardrail.
3. Shown for one-way traffic. For two-way traffic, departure requires approach end treatment when located within the clear zone of opposing traffic.
4. See Std Specs for nested guardrail pay item.

APPROVED FOR DESIGN <i>May Viparina</i>	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION ROADWAY STANDARD DRAWINGS	REV. 7/05
APPROVED FOR DISTRIBUTION <i>John Smith</i>	GUARDRAIL MEASUREMENT LIMITS	DRAWING NO. C-10.00

NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	MODIFIED PLAN VIEW GRAPHICS/REMOVED WIDTH DIMENSION	RLF	9/04
2	REVISED GENERAL NOTES 3 & 4	RLF	9/04
3	MODIFIED STANDARD DRAWING TITLE	RLF	9/04
4	REVISED SECTION VIEW TITLE	RLF	7/05



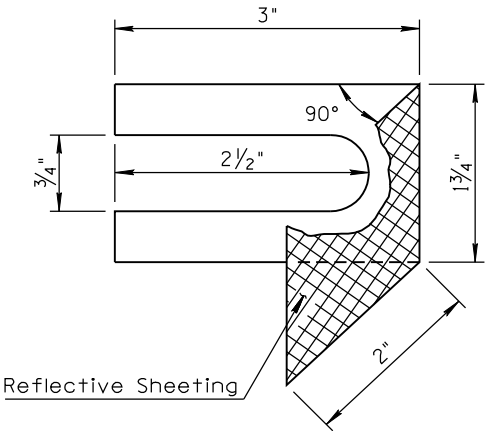
PLAN



④
TYPE A SECTION

GENERAL NOTES

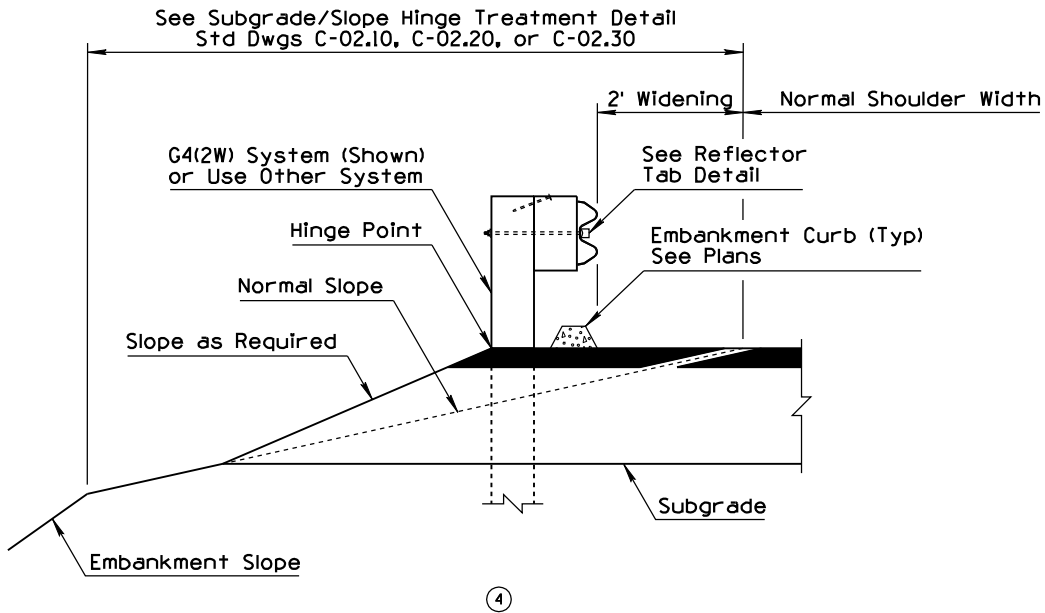
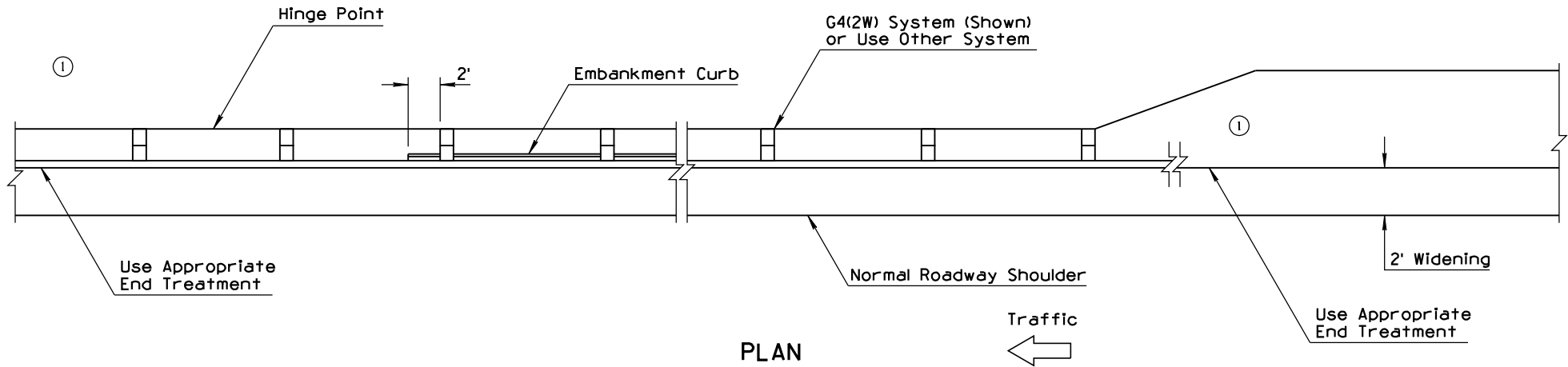
1. All embankment curb shall be protected by guardrail.
 2. Guardrail shall extend beyond the limits of embankment curb.
 - ② 3. See Std Dwg C-10.00 for measurement limits.
 - ② 4. See Std Specs 703, 905 and 1012-3 for reflector tab and snow marker materials, reflective sheeting, and spacing requirements.
- ▲ Top of Rail = 28"
See General Note 1
Std Dwg C-10.03



REFLECTOR TAB DETAIL

APPROVED FOR DESIGN <i>Mary Viparina</i>	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION ROADWAY STANDARD DRAWINGS	REV. 7/05
APPROVED FOR DISTRIBUTION <i>John [Signature]</i>	GUARDRAIL INSTALLATION TYPE A AND REFLECTOR TAB ③	DRAWING NO. C-10.01

NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	REVISED PLAN VIEW GRAPHICS/REMOVED WIDTH DIMENSION	RLF	9/04
2	REVISED GENERAL NOTES 3 & 4	RLF	9/04
3	REVISED STANDARD DRAWING TITLE	RLF	9/04
4	REVISED SECTION VIEW TITLE	RLF	7/05

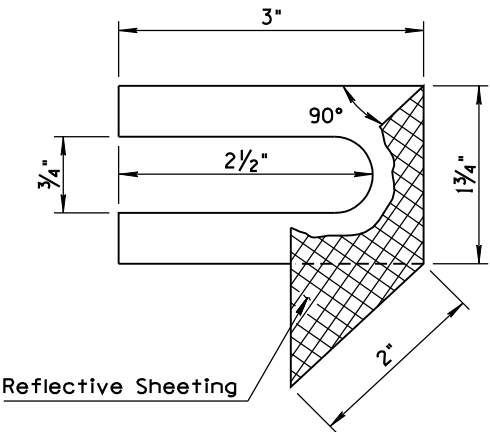


TYPE B SECTION

GENERAL NOTES

1. All embankment curb shall be protected by guardrail.
2. Guardrail shall extend beyond the limits of embankment curb.
- ② 3. See Std Dwg C-10.00 for measurement limits.
- ② 4. See Std Specs 703, 905 and 1012-3 for reflector tab and snow marker materials, reflective sheeting, and spacing requirements.

▲ Top of Rail = 28"
See General Note 1
Std Dwg C-10.03

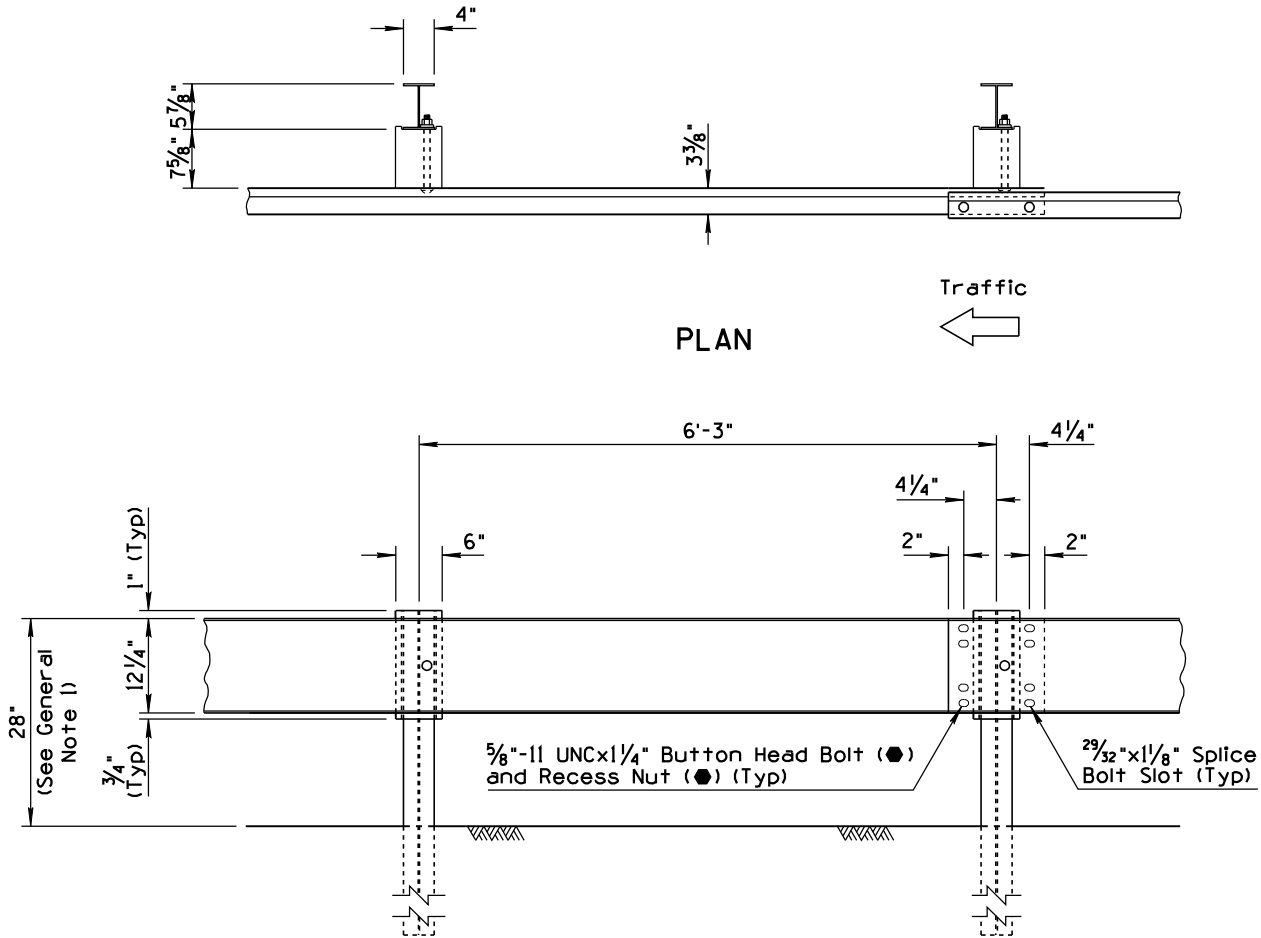


REFLECTOR TAB DETAIL

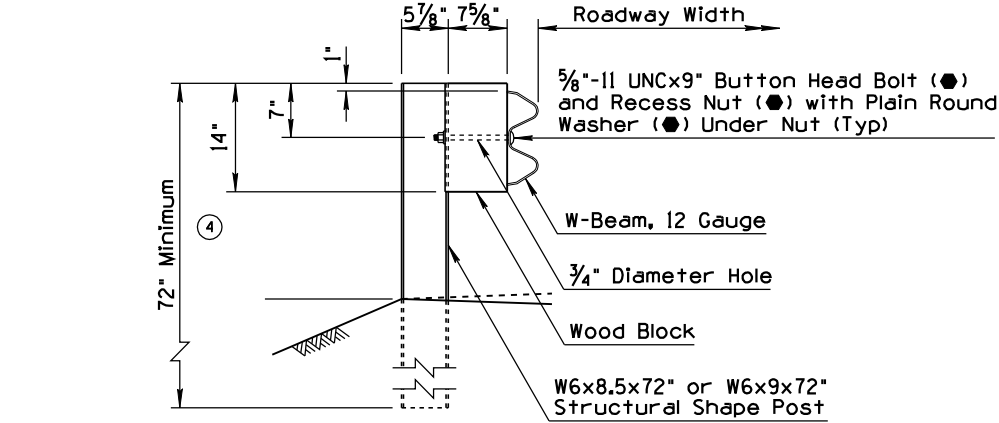
APPROVED FOR DESIGN <i>Mary Viparina</i>	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION ROADWAY STANDARD DRAWINGS	REV. 7/05
APPROVED FOR DISTRIBUTION <i>John [Signature]</i>	GUARDRAIL INSTALLATION TYPE B AND REFLECTOR TAB ③	DRAWING NO. C-10.02

NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	REVISED DESIGNATION	RLF	9/04
2	REVISED GENERAL NOTES 1 & 2	RLF	9/04
3	RENAMED STD DRAWING FROM C-10.21 & REVISED TITLE	RLF	9/04
4	REMOVED 29 INCH DIMENSION	RLF	7/05

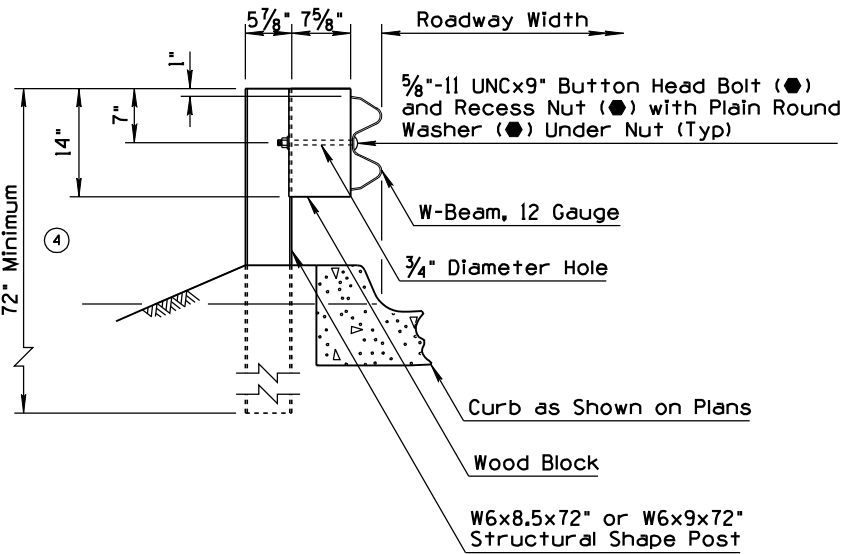
G4(IS) SYSTEM



ELEVATION G4(IS) SYSTEM



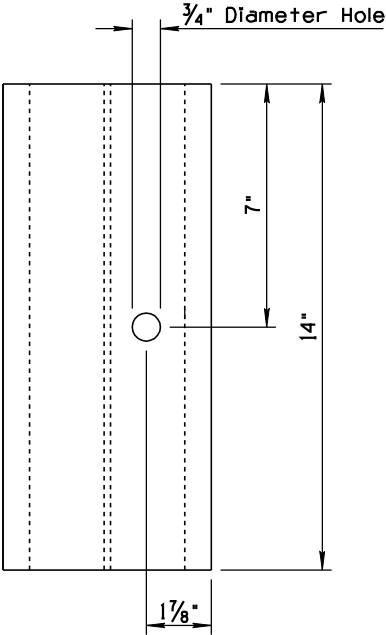
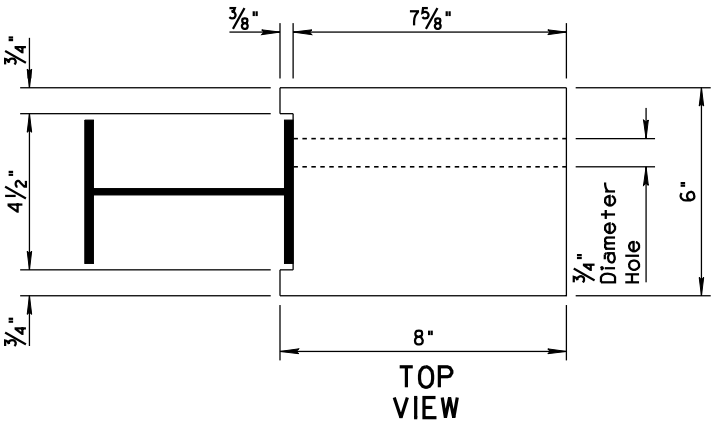
SECTION G4(IS)
SHOWN WITHOUT CURB



SECTION G4(IS)
SHOWN WITH CURB

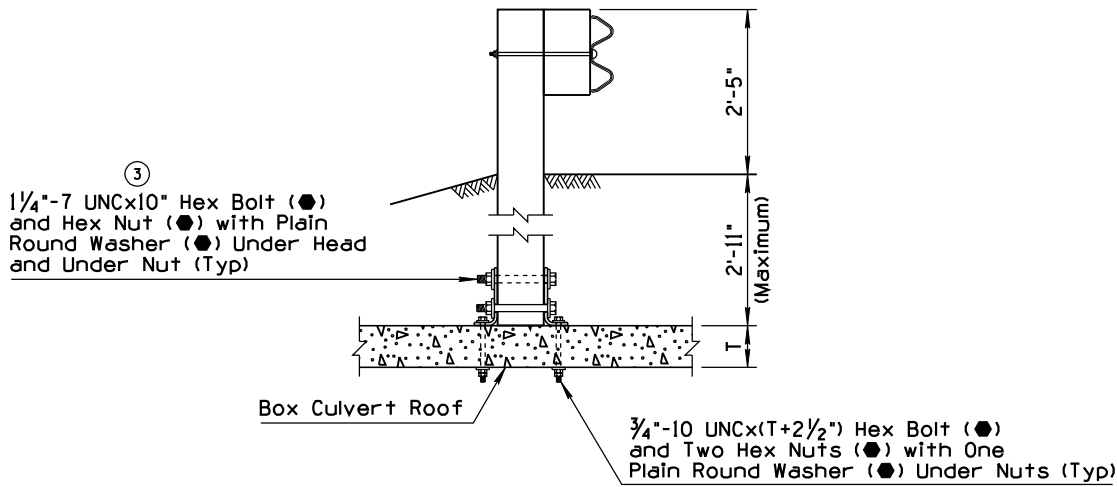
GENERAL NOTES

1. The control height for guardrail system is 28" to the top of rail, measured at the face of rail from the normal finished shoulder elevation.
 2. Guardrail shall be lapped in the direction of adjacent traffic.
- ① ● - Indicates AASHTO, AGC & ARTBA Task Force 13 Report designation



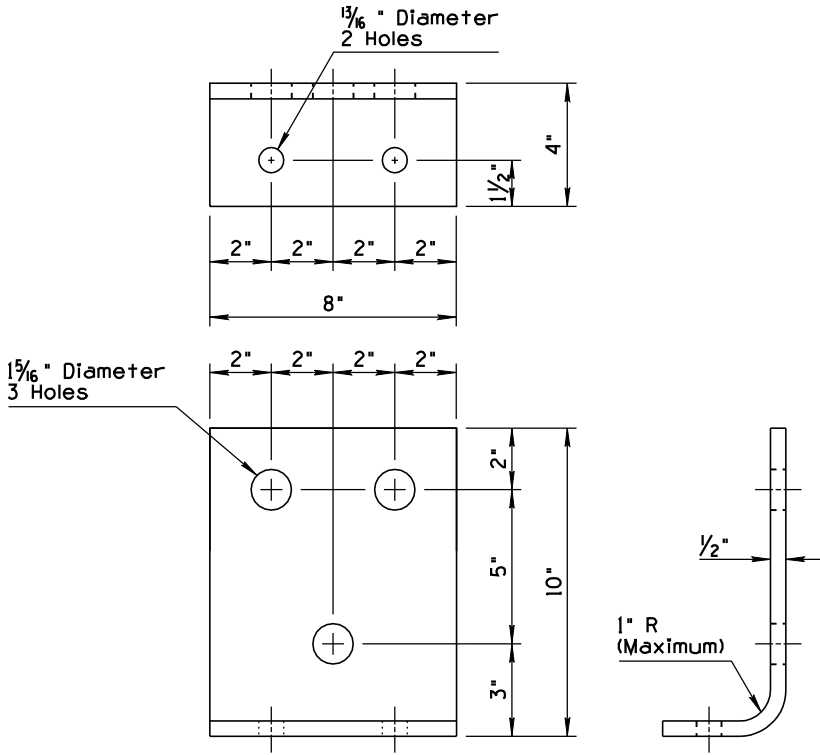
APPROVED FOR DESIGN <i>May Viparina</i>	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION ROADWAY STANDARD DRAWINGS	REV. 7/05
APPROVED FOR DISTRIBUTION <i>John Smith</i>	W-BEAM GUARDRAIL G4(IS) BLOCKED-OUT STEEL POST ③	DRAWING NO. C-10.04 ③

NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	RENAMED STD DWG FROM C-10.29, 2 OF 2 & REVISED TITLE	RLF	9/04
2	REVISED DESIGNATION	RLF	9/04
3	REVISED LENGTH	RLF	7/05
4			

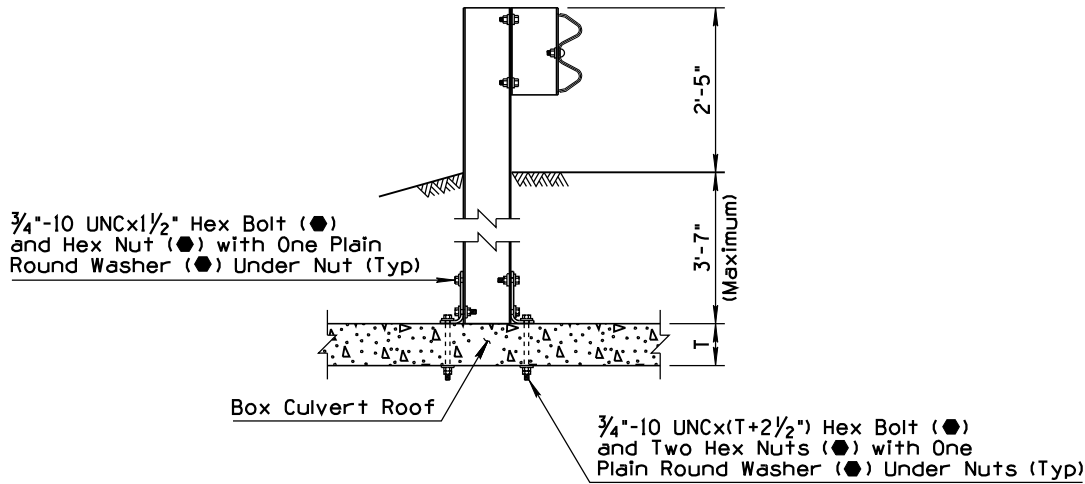


INSTALLATION DETAIL

BOLTED ANCHOR
TIMBER POST INSTALLATION DETAIL

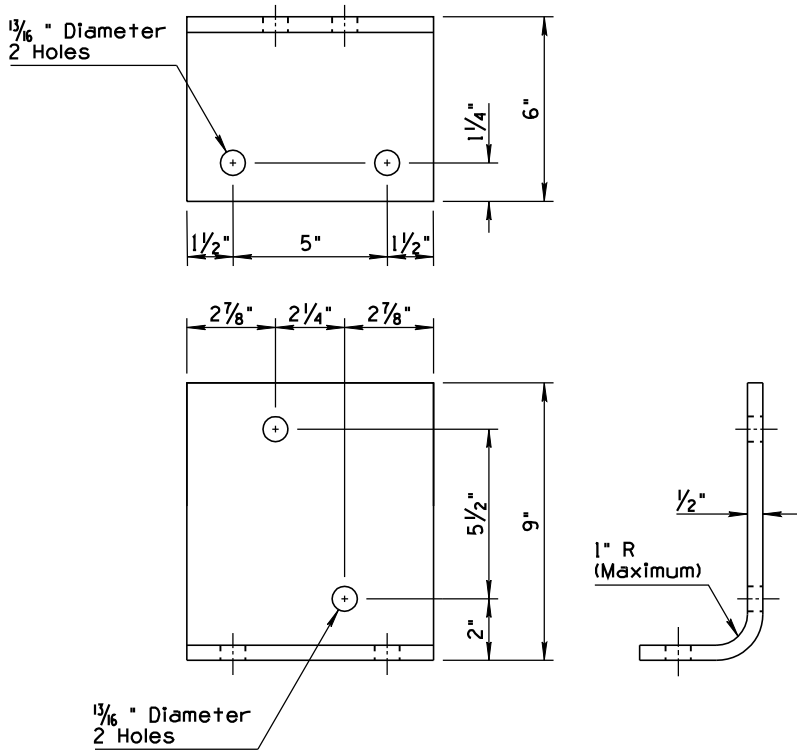


BRACKET DETAIL



INSTALLATION DETAIL

BOLTED ANCHOR
STEEL POST INSTALLATION DETAIL



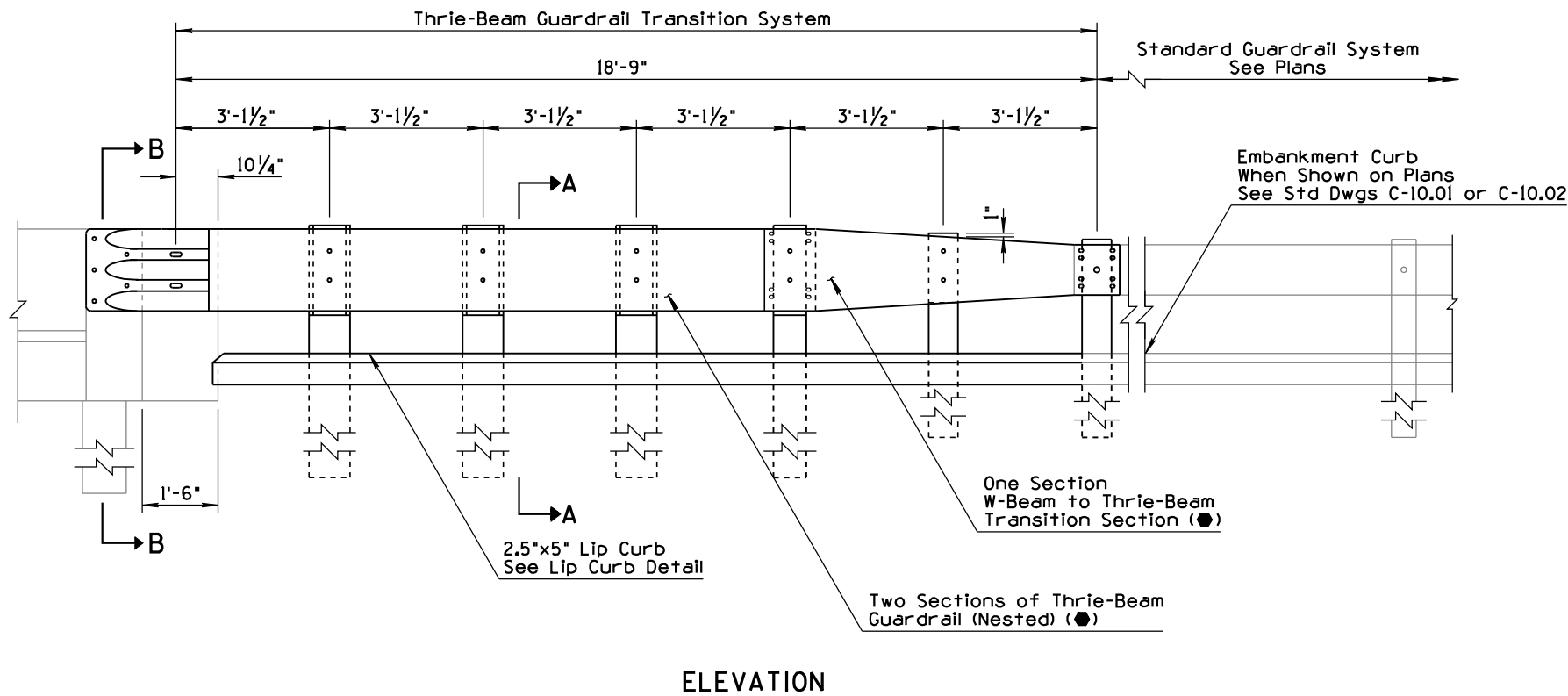
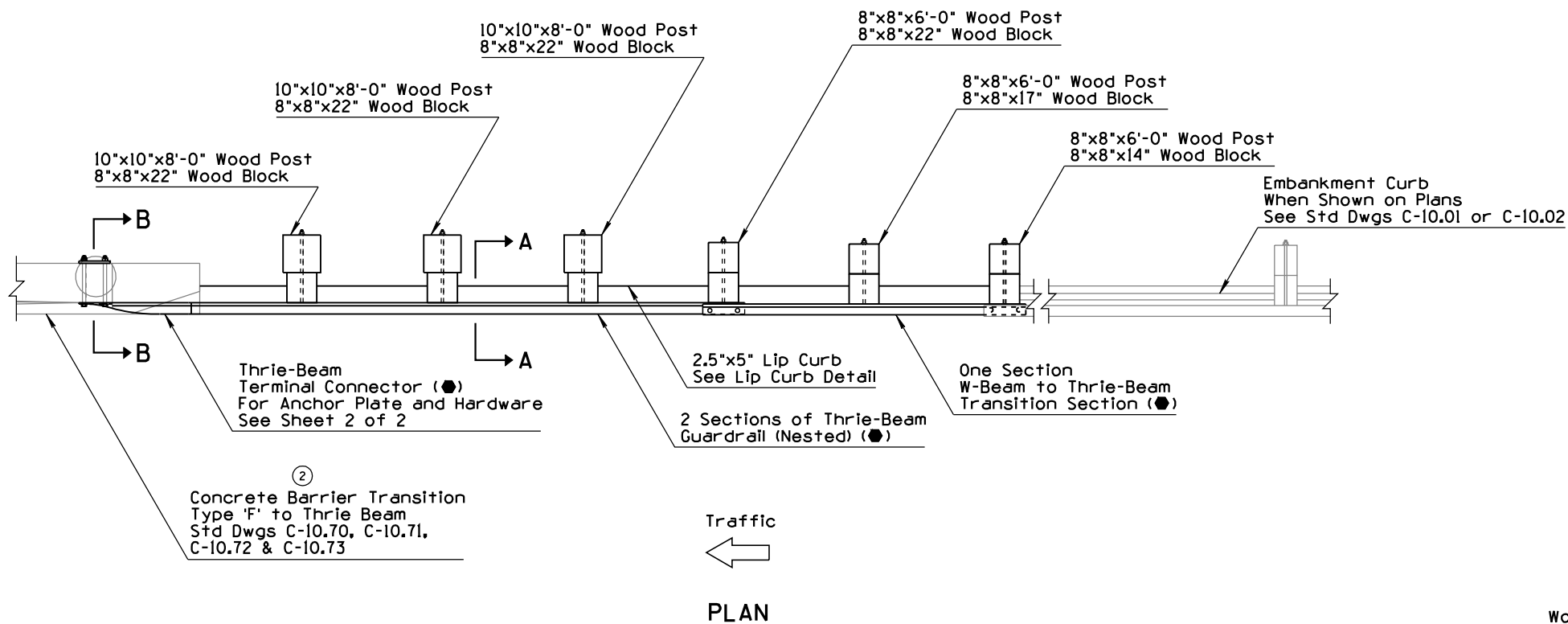
BRACKET DETAIL

GENERAL NOTES

- Bracket may be made of one piece hot bent, or two pieces welded together.
 - Short timber posts anchored to box culvert roof shall be 8" x 8" only.
- ② ● - Indicates AASHTO, AGC & ARTBA Task Force 13 Report designation

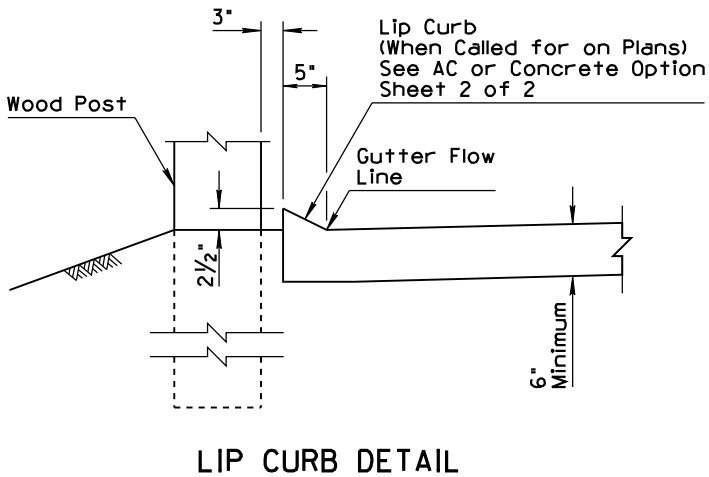
APPROVED FOR DESIGN <i>Mary Viparina</i>	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION ROADWAY STANDARD DRAWINGS	REV. 7/05
APPROVED FOR DISTRIBUTION <i>John [Signature]</i>	W-BEAM GUARDRAIL BOLTED ANCHOR	DRAWING NO. ① C-10.07 Sheet 2 of 2

NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	REMOVED (A325) REQUIREMENT	RLF	12/04
2	REVISED BARRIER TRANSITION CALLOUT	RLF	7/05
3	REISSUED AS STANDARD DRAWING C-10.30, SHEET 1 OF 2	RLF	7/05
4			



GENERAL NOTES

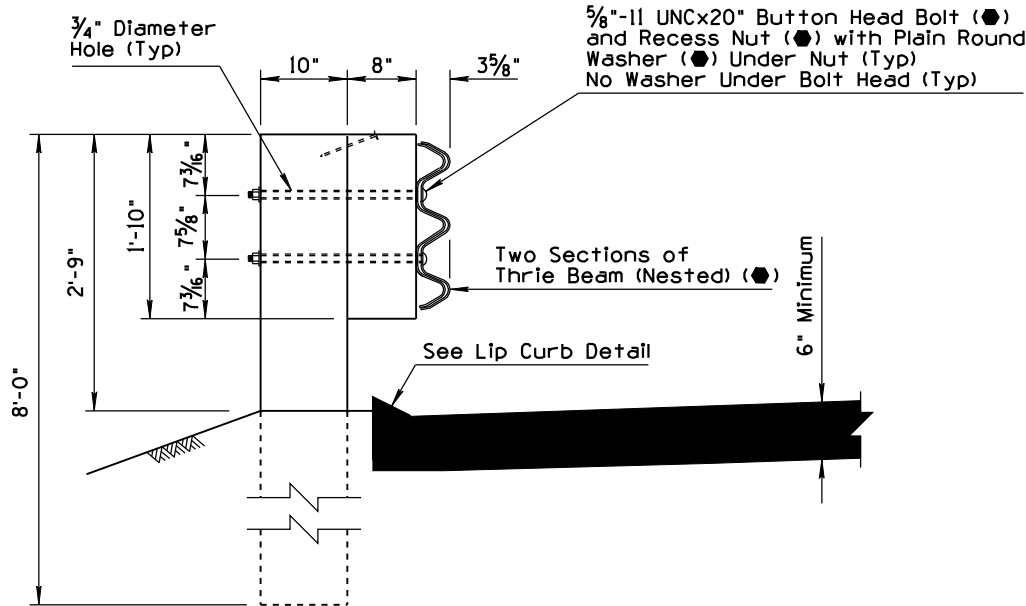
1. Curbing is not required when drainage flows transversely away from barrier.
 2. Treatment at back of lip curb modified for constructability purposes. Front slope and height of lip curb shall not be exceeded.
 3. Thrie-beam terminal connector to thrie-beam splice shall be lapped in the direction of adjacent traffic.
- - Indicates AASHTO, AGC & ARTBA Task Force 13 Report designation



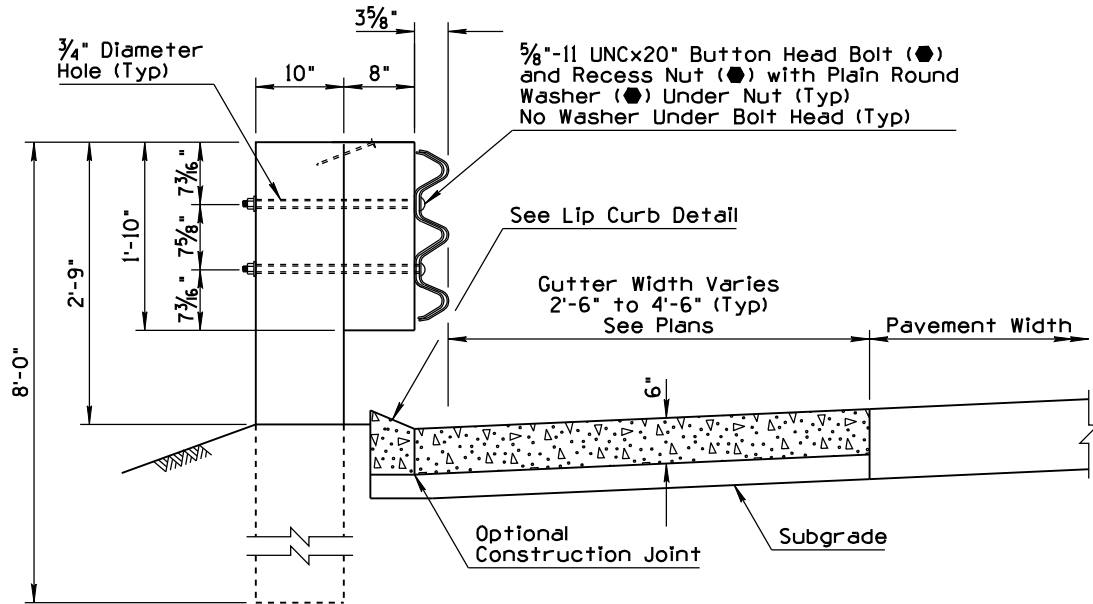
LIP CURB DETAIL

APPROVED FOR DESIGN <i>May Viparina</i>	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION ROADWAY STANDARD DRAWINGS	REV. 7/05
APPROVED FOR DISTRIBUTION <i>John Smith</i>	GUARDRAIL TRANSITION, THRIE BEAM TO CONCRETE HALF BARRIER 32" TYPE 'F'	DRAWING NO. ③ C-10.30 Sheet 1 of 2

NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	NEW STANDARD DRAWING	RLF	7/05
2			
3			
4			

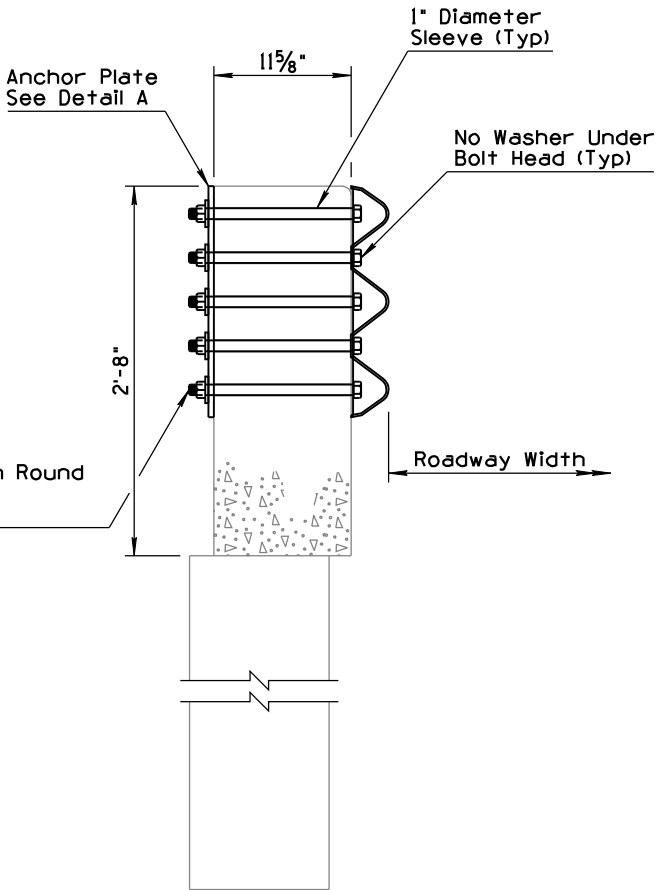


SECTION A-A
AC OPTION

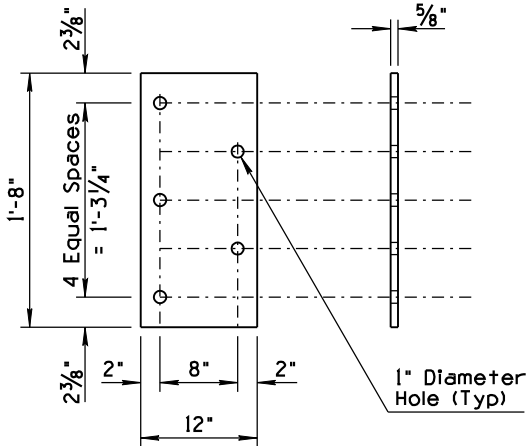


SECTION A-A
CONCRETE OPTION

7/8"-9 UNCx14" Hex Bolt (A325) (●) and Hex Nut (A325) (●) with Plain Round Washer (●) (Under Nut) (Typ) 5 Required



SECTION B-B



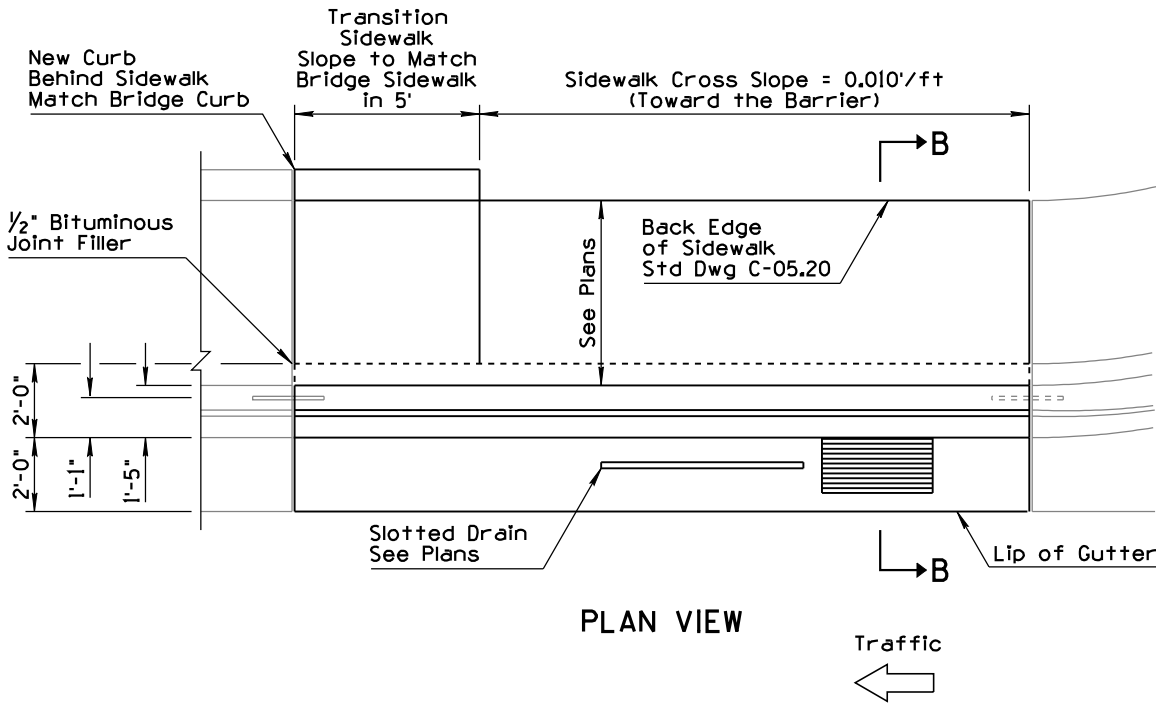
ANCHOR PLATE - DETAIL A

GENERAL NOTES

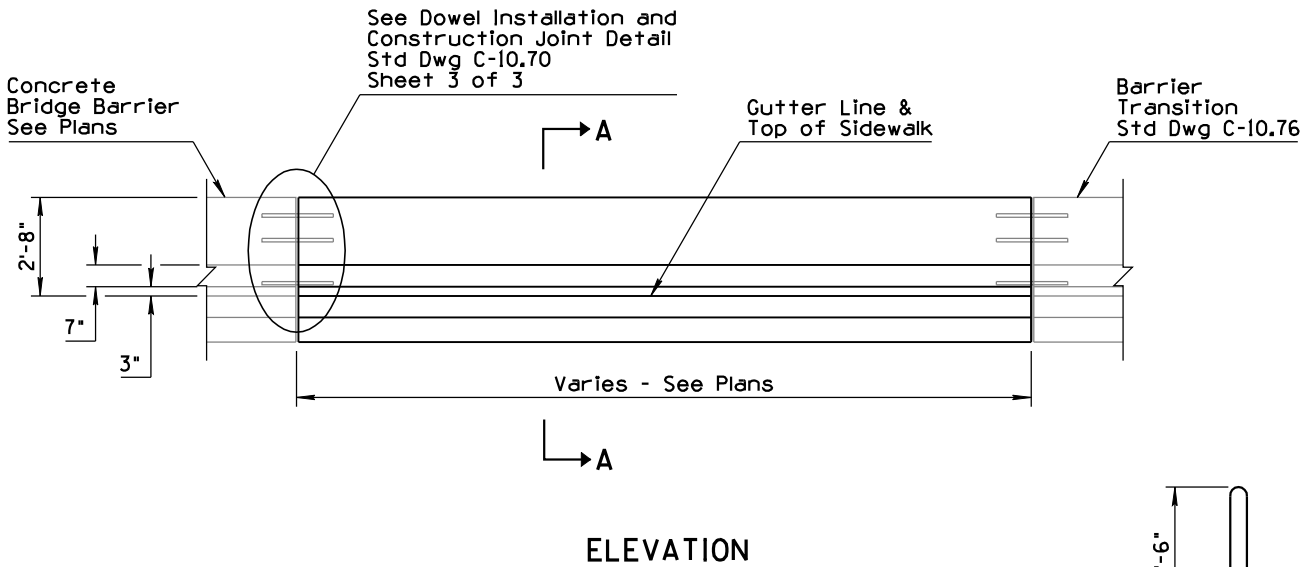
- Anchor Plate shall conform to ASTM specification A36. Bolts, washers and Anchor Plate shall be galvanized or, at the contractors option, stainless steel bolts and washers may be used.
 - Two-inch deep contraction joints shall be placed in the curb and the gutter at locations which match the joints in adjacent PCCP and at approximate 15' centers when adjacent to AC pavement. Joints shall be either hand-tooled or sawn.
- - Indicates AASHTO, AGC & ARTBA Task Force 13 Report designation

APPROVED FOR DESIGN <i>Mary Viparina</i>	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION ROADWAY STANDARD DRAWINGS	REV. 4/06
APPROVED FOR DISTRIBUTION <i>John Smith</i>	GUARDRAIL TRANSITION THRIE-BEAM TO CONCRETE HALF BARRIER 32" TYPE 'F'	DRAWING NO. ① C-10.30 Sheet 2 of 2

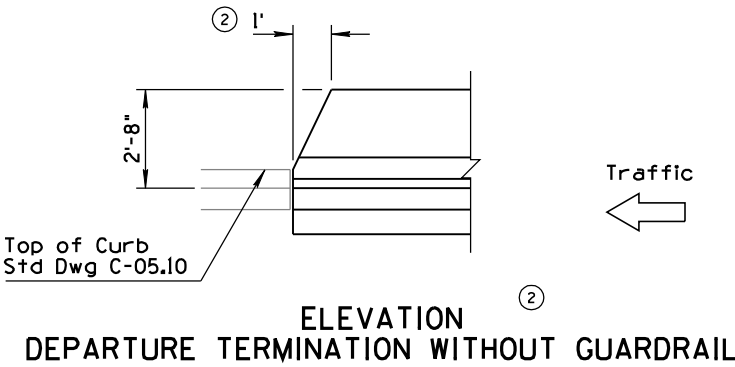
NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	MODIFIED SECTION VIEWS; REMOVED SLOPE DESIGNATION	RLF	3/06
2	WAS 12 1/2" - IS NOW 1' & ADDED WITHOUT GUARDRAIL TO TITLE	RLF	3/06
3			
4			



PLAN VIEW

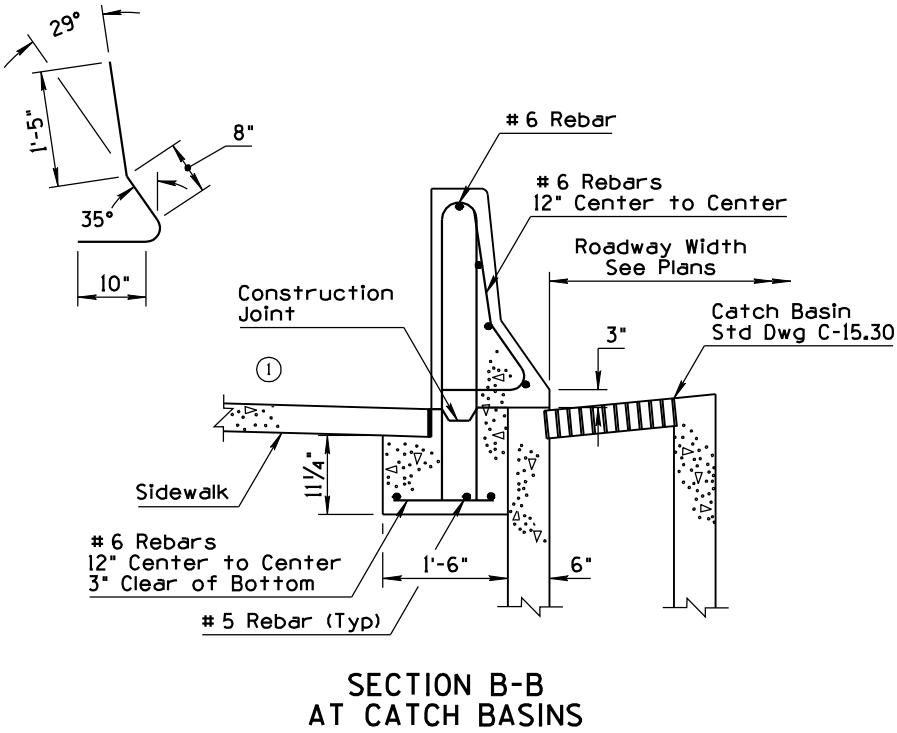


ELEVATION

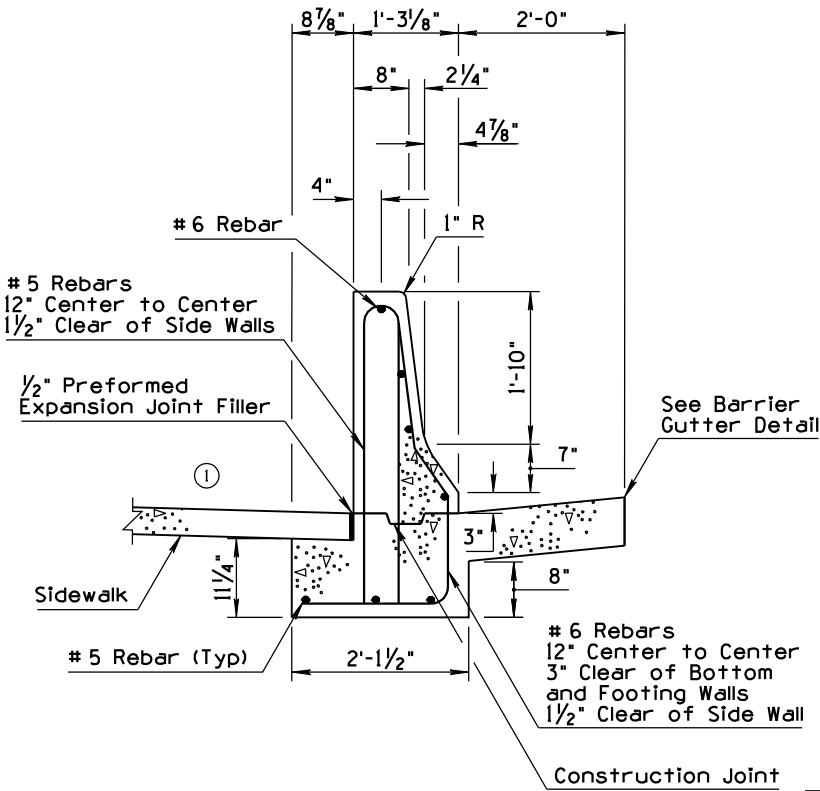


ELEVATION

DEPARTURE TERMINATION WITHOUT GUARDRAIL

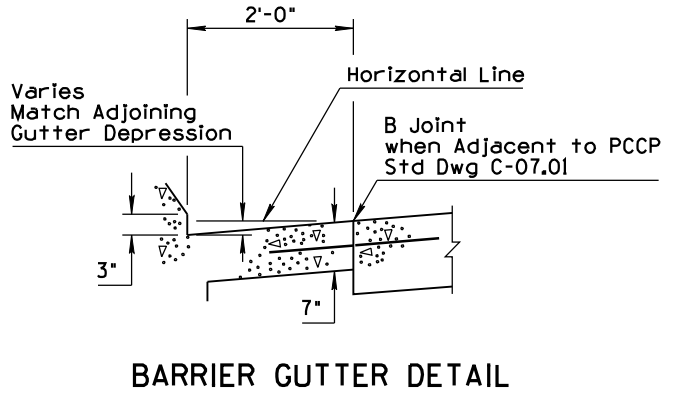


SECTION B-B
AT CATCH BASINS

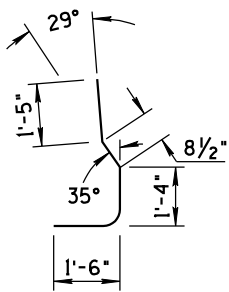


SECTION A-A

- GENERAL NOTES**
- Concrete shall be Class S, f'c=4000 PSI.
 - Rebar shall conform to Std Spec 1003.
 - Rebar shall have 2" minimum clear cover unless otherwise noted.
 - See drainage sheets for slotted drain and catch basin details.
 - Departure termination may be substituted for Std Dwg C-10.76 barrier transition under departure conditions.
 - See Std Dwg C-05.20 for sidewalk construction.
 - All bend dimensions for rebar are out-to-out of rebars.

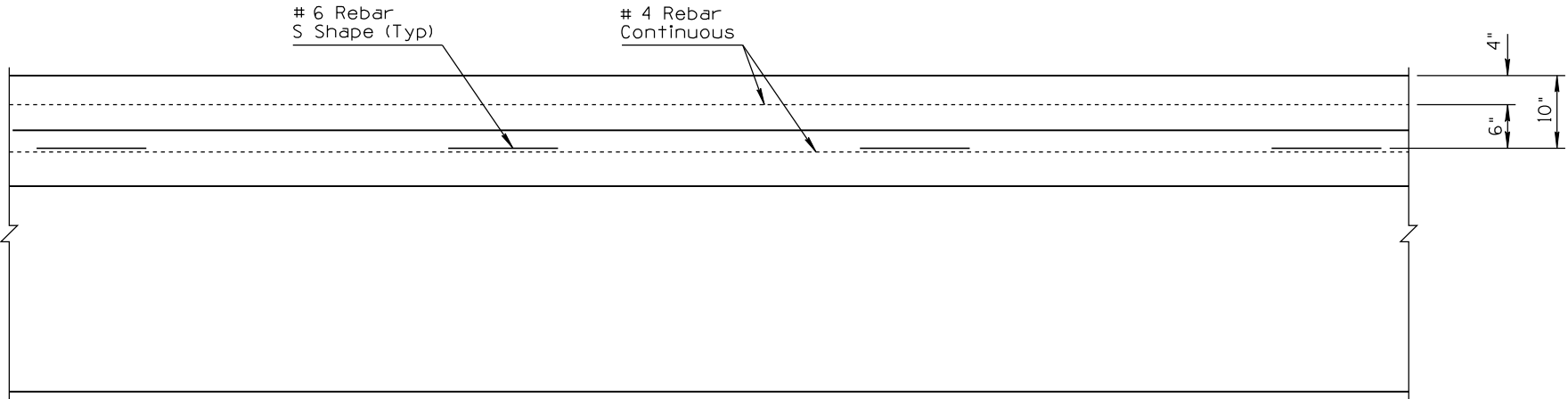


BARRIER GUTTER DETAIL

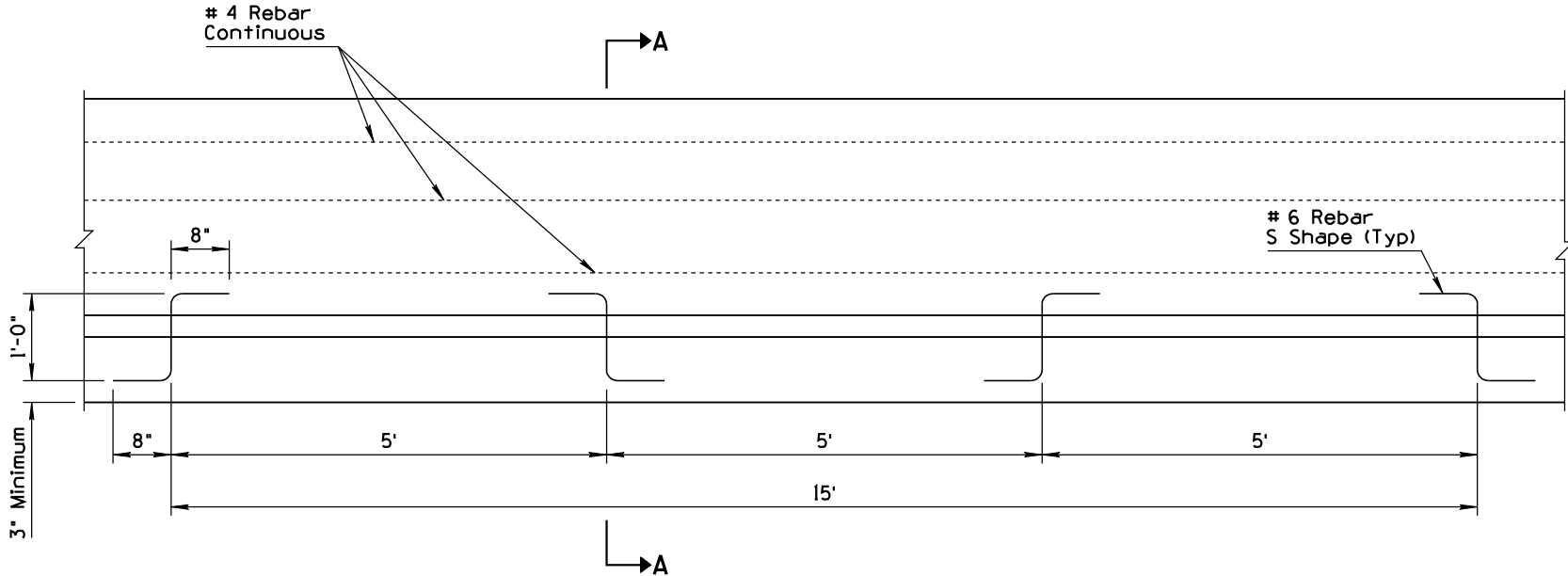


APPROVED FOR DESIGN <i>Mary Viparina</i>	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION ROADWAY STANDARD DRAWINGS	REV. 3/06
APPROVED FOR DISTRIBUTION <i>John Smith</i>	CONCRETE HALF BARRIER 32' TYPE 'F' WITH SIDEWALK	DRAWING NO. C-10.51

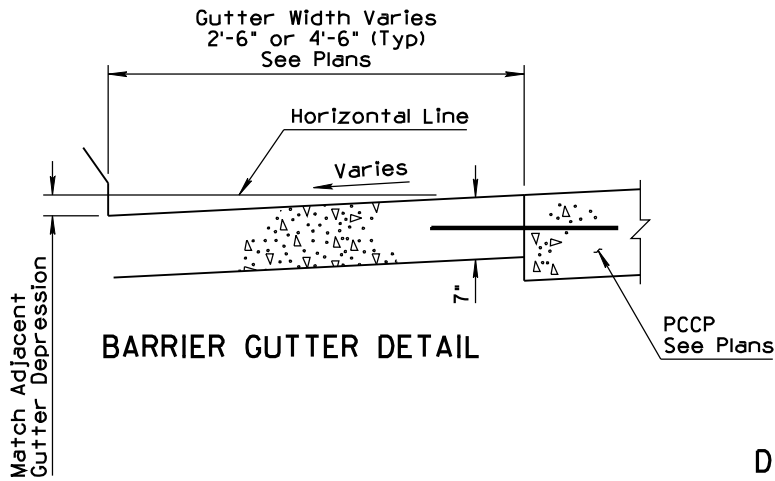
NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	RENAMED STD DWG FROM C-10.62 TO C-10.52 & REVISED TITLE	RLF	9/04
2	ADDED GENERAL NOTE 9	RLF	9/04
3	REVISED GENERAL NOTE 3	RLF	9/04
4	REMOVED DIMENSION	RLF	7/05



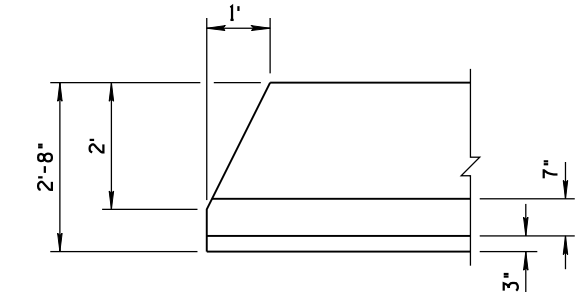
PLAN



ELEVATION



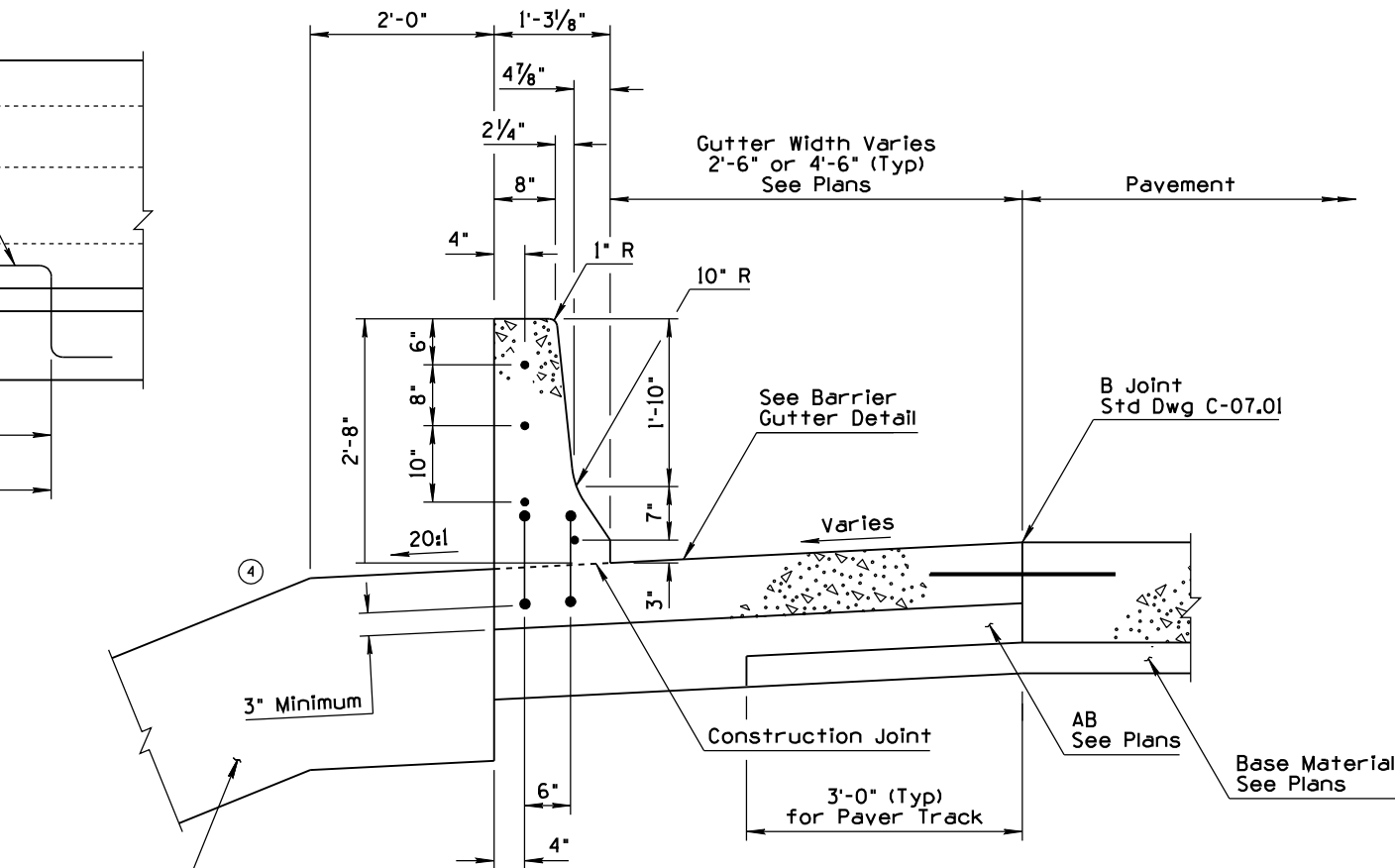
BARRIER GUTTER DETAIL



ELEVATION
DEPARTURE TERMINATION WITHOUT GUARDRAIL

GENERAL NOTES

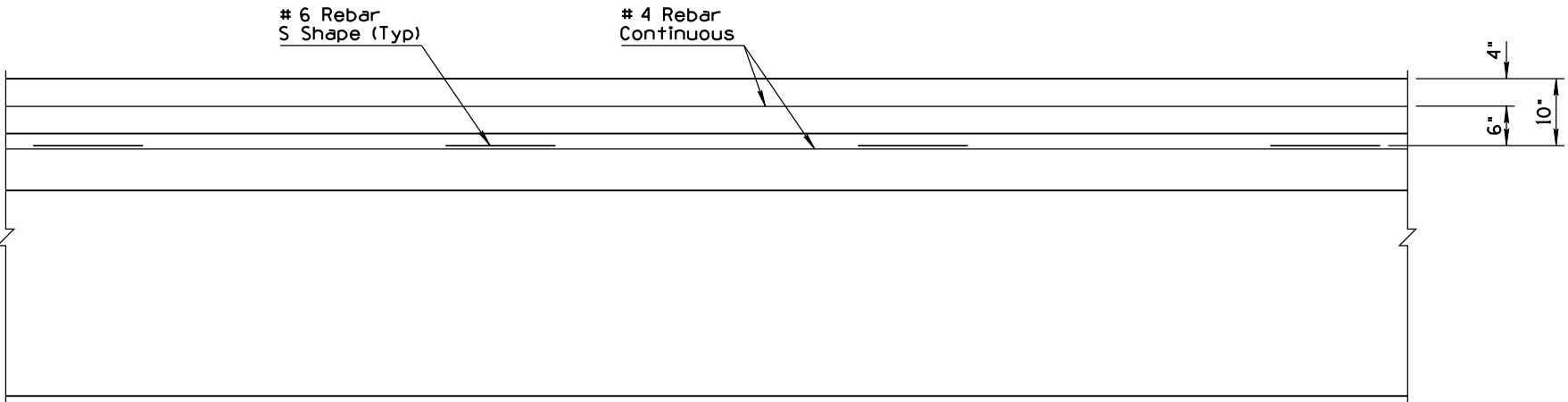
1. Half Barrier shall be constructed by the slip or fixed form method.
2. When obstacles prevent the use of slip form equipment, stationary forms shall be used.
3. Concrete shall be Class S, $f'_c=4000$ PSI.
4. #4 rebar shall extend 12" past the construction joint at the completion of the day's pour.
5. Thickness of gutter, "D" can be adjusted to match the PCCP thickness, as approved by the Engineer.
6. When the pavement section slopes away from the gutter, the slope of the gutter shall match the pavement cross slope. Therefore, the 2" gutter depression is not applicable.
7. At bridges, the cross slope of the gutter shall transition to match the cross-slope of the bridge. Length of the transition is 15'.
8. Two-inch deep contraction joints shall be placed in the gutter at locations which match the joints in adjacent PCCP. Joints shall be hand-tooled or sawn.
9. Whenever Half Barrier is backfilled, see Std Dwg C-10.50 for weep hole details, unless otherwise specified on the plans.



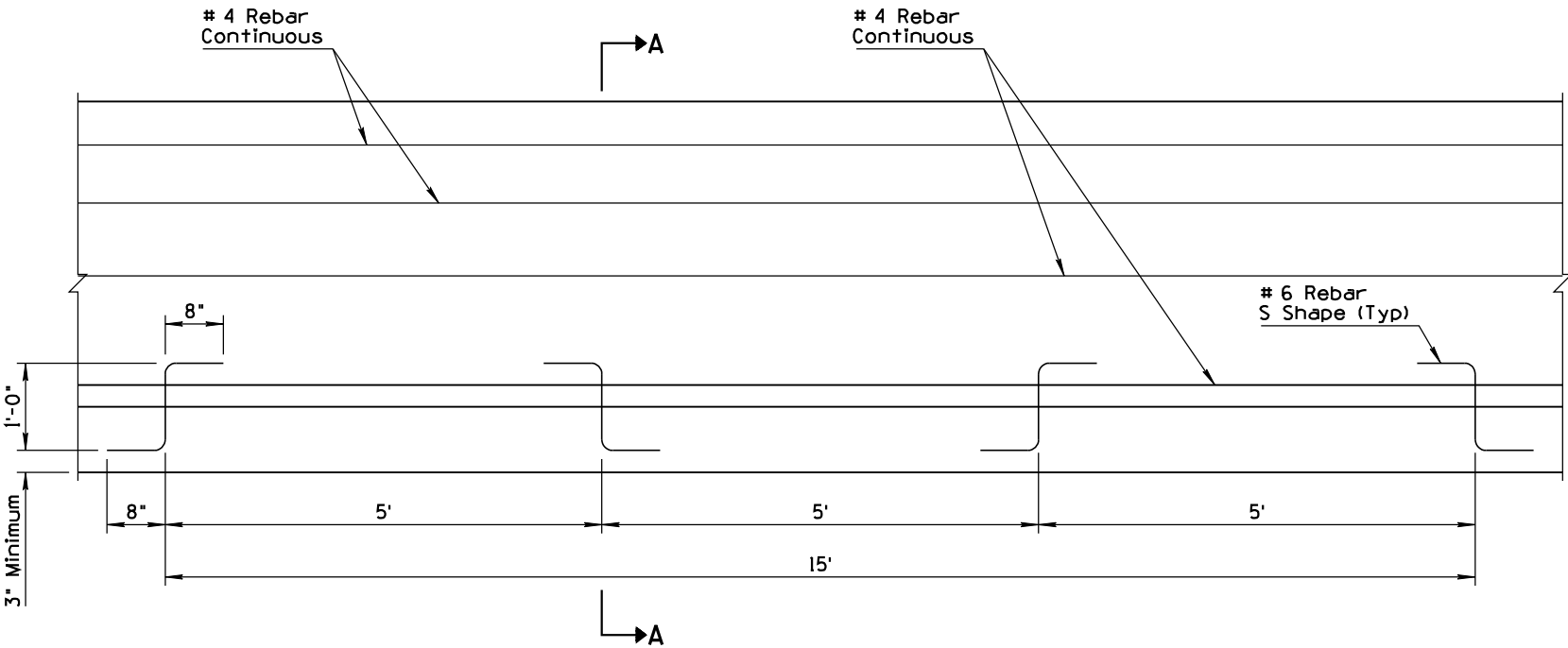
SECTION A-A

APPROVED FOR DESIGN <i>May Viparina</i>	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION ROADWAY STANDARD DRAWINGS	REV. 7/05
APPROVED FOR DISTRIBUTION <i>John [Signature]</i>	CONCRETE HALF BARRIER 32" TYPE 'F' WITH GUTTER	DRAWING NO. 1 C-10.52

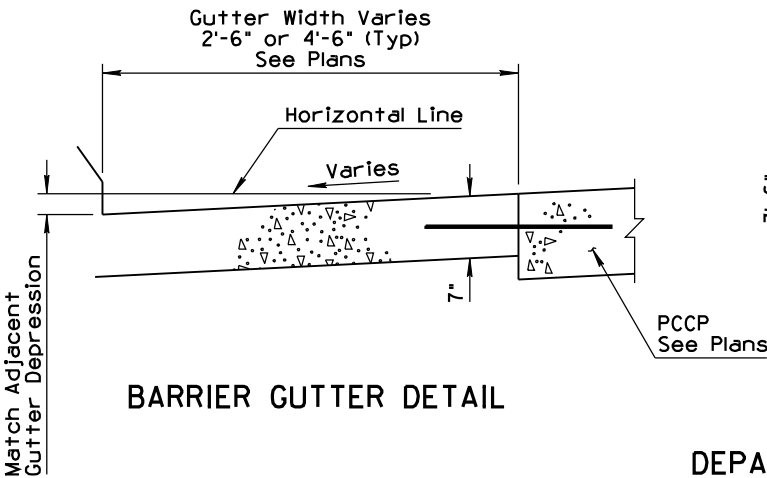
NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	RENAMED STD DWG FROM C-10.63 & REVISED TITLE	RLF	9/04
2	ADDED GENERAL NOTE 9	RLF	9/04
3	REVISED GENERAL NOTE 3	RLF	9/04
4	REMOVED DIMENSION	RLF	7/05



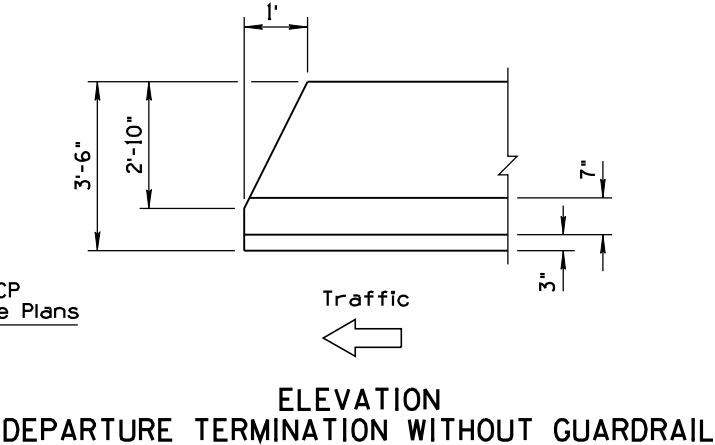
PLAN



ELEVATION



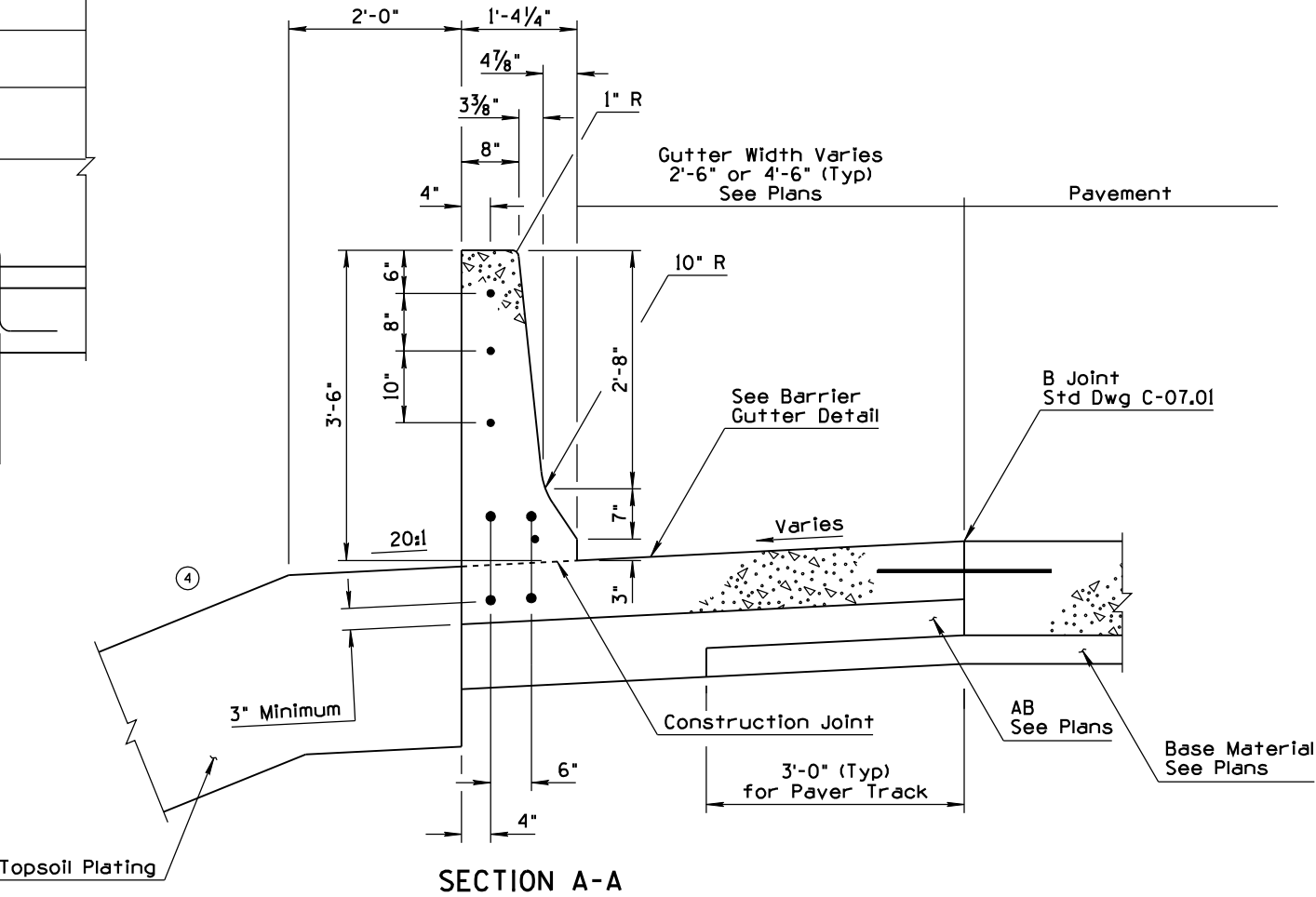
BARRIER GUTTER DETAIL



ELEVATION
DEPARTURE TERMINATION WITHOUT GUARDRAIL

GENERAL NOTES

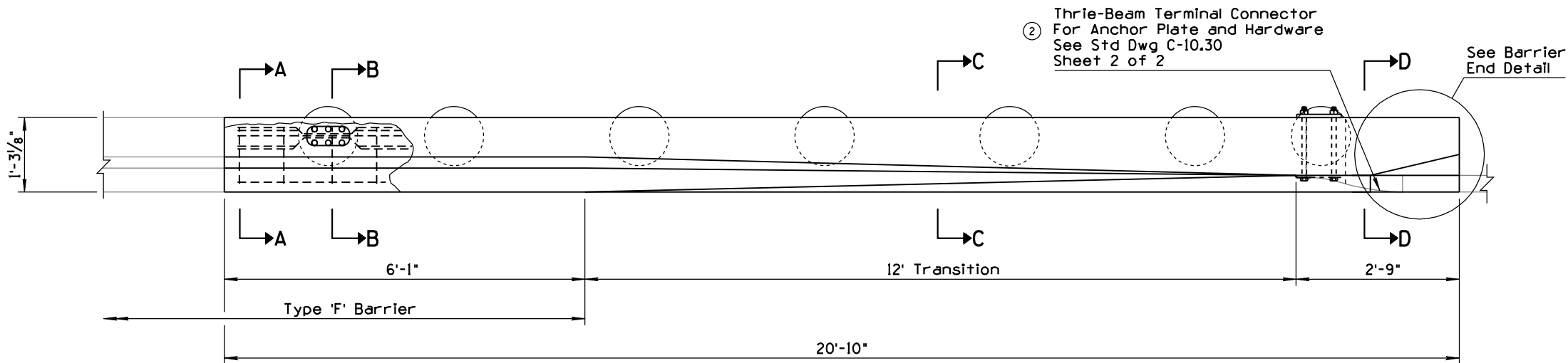
1. Half Barrier shall be constructed by the slip or fixed form method.
2. When obstacles prevent the use of slip form equipment, stationary forms shall be used.
3. Concrete shall be Class S, $f'_c=4000$ PSI.
4. # 4 rebar shall extend 12" past the construction joint at the completion of the day's pour.
5. Thickness of gutter, "D" can be adjusted to match the PCCP thickness, as approved by the Engineer.
6. When the pavement section slopes away from the gutter, the slope of the gutter shall match the pavement cross slope. Therefore, the 2" gutter depression is not applicable.
7. At bridges, the cross slope of the gutter shall transition to match the cross slope of the bridge. Length of the transition is 15'.
8. Two-inch deep contraction joints shall be placed in the gutter at locations which match the joints in adjacent PCCP. Joints shall be hand tooled or sawn.
9. Whenever Half Barrier is backfilled, see Std Dwg C-10.50 for weep hole details, unless otherwise indicated on the plans.



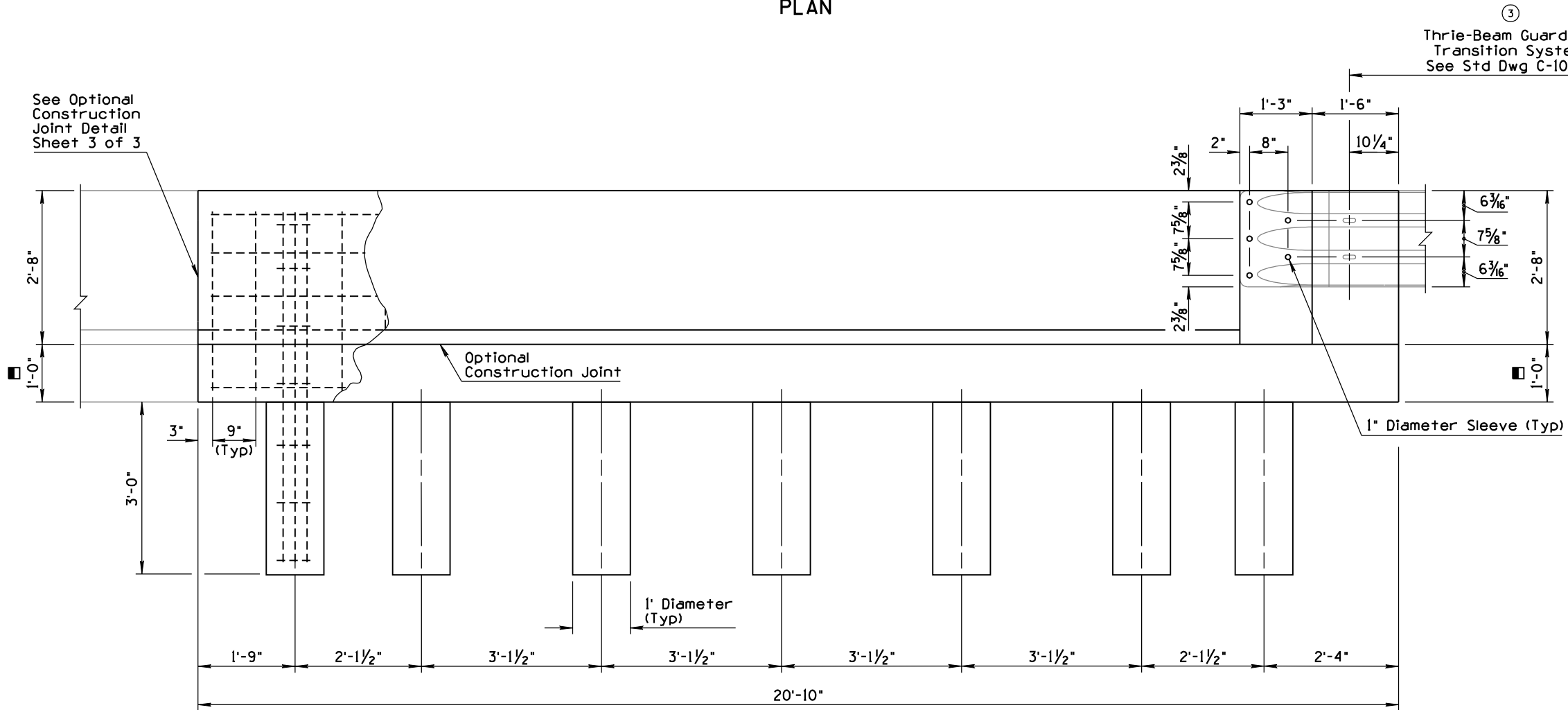
SECTION A-A

APPROVED FOR DESIGN <i>Mary Viparina</i>	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION ROADWAY STANDARD DRAWINGS	REV. 7/05
APPROVED FOR DISTRIBUTION <i>John Smith</i>	CONCRETE HALF BARRIER 42" TYPE 'F' WITH GUTTER	DRAWING NO. ① C-10.53

NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	REISSUED STANDARD DRAWING	RLF	9/04
2	REVISED TERMINAL CONNECTOR NOTE	RLF	7/05
3	REVISED TRANSITION SYSTEM NOTE	RLF	7/05
4			



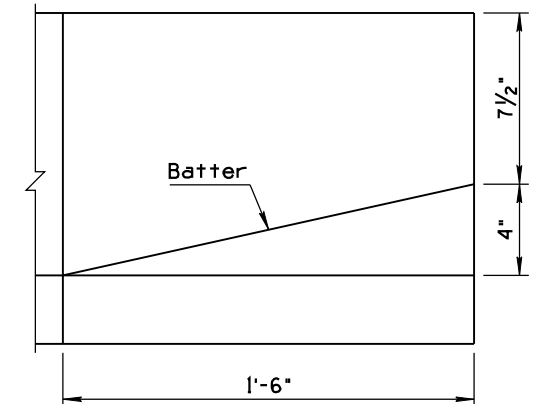
PLAN



ELEVATION
BARRIER WITHOUT CURB

GENERAL NOTES

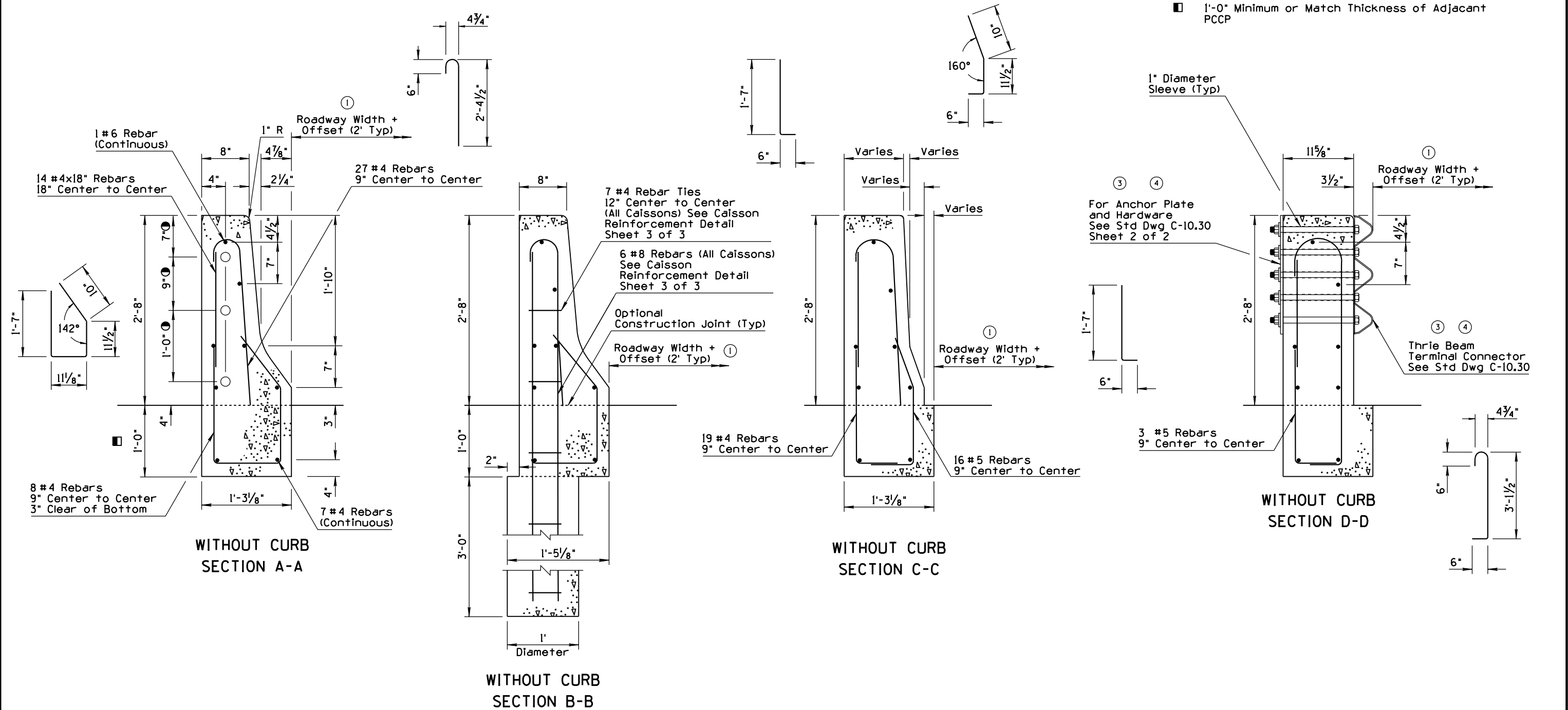
- Concrete shall be Class S, $f'_c=4000$ PSI.
- All rebar shall have 2" minimum clear cover unless otherwise noted.
- All bend dimensions for rebar are out-to-out of rebars.
- 1'-0" Minimum or Match Thickness of Adjacent PCCP



BARRIER END DETAIL

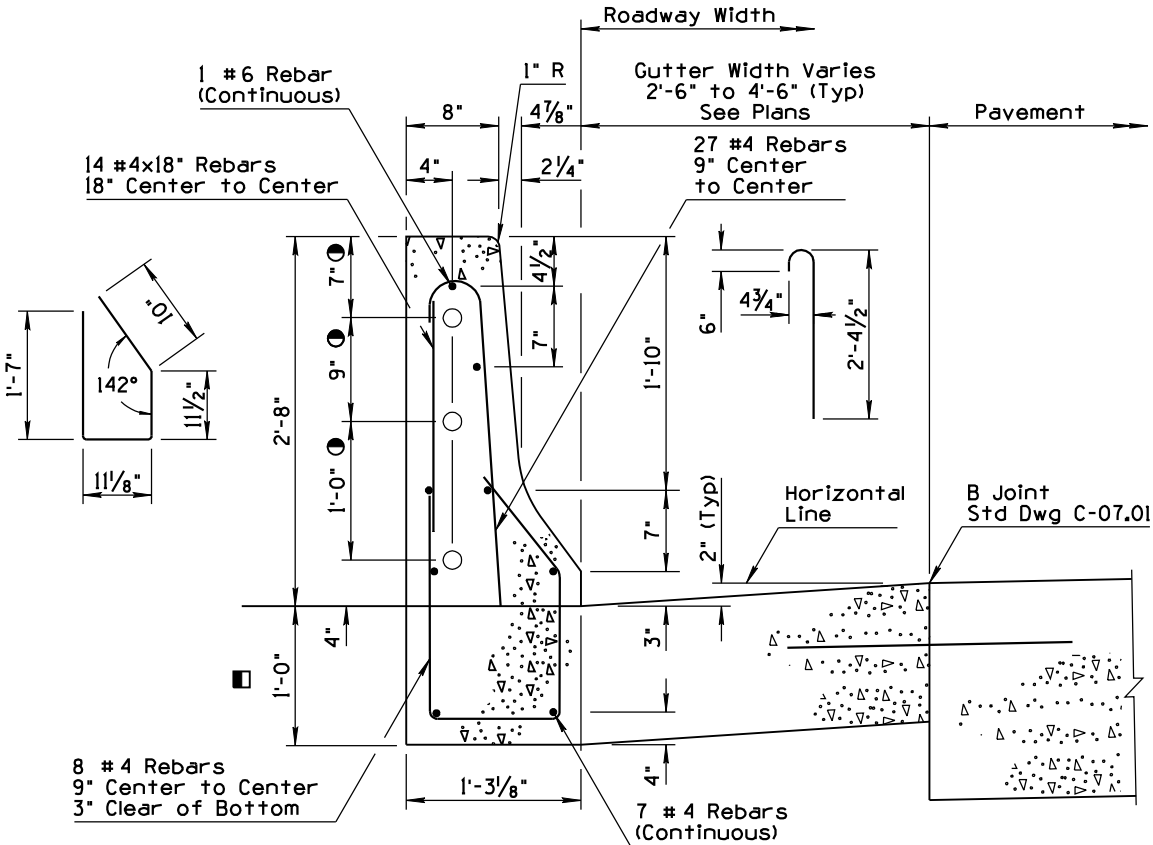
APPROVED FOR DESIGN <i>May Viparina</i>	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION ROADWAY STANDARD DRAWINGS	REV. 7/05
APPROVED FOR DISTRIBUTION <i>John [Signature]</i>	CONCRETE HALF-BARRIER TRANSITION TO VERTICAL 32" TYPE 'F' WITH CAISSONS	DRAWING NO. ① C-10.70 Sheet 1 of 3

NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	REVISED DIMENSION	RLF	9/04
2	REVISED TITLE	RLF	9/04
3	ADDED REFERENCE	RLF	9/04
4	REVISED NOTE	RLF	7/05

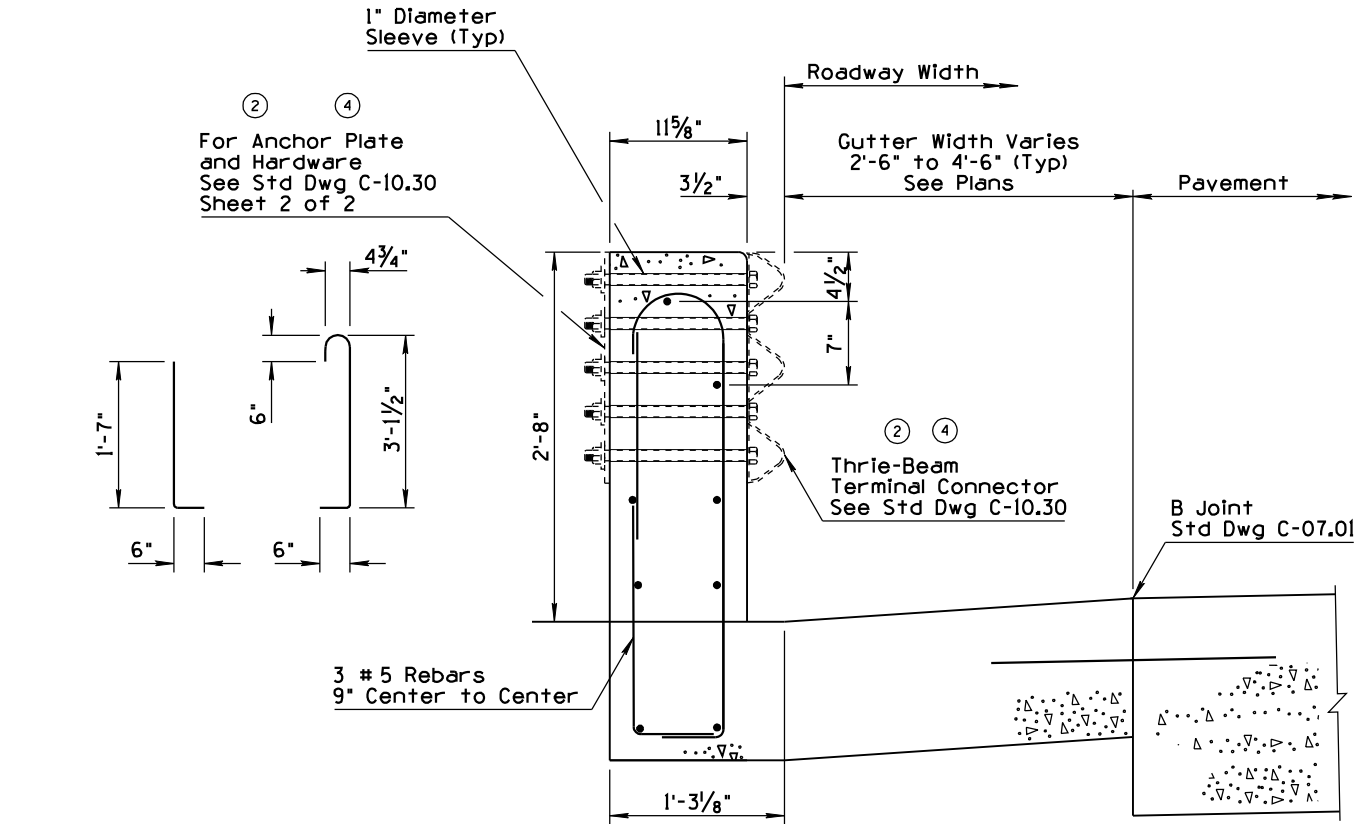


APPROVED FOR DESIGN <i>May Viparina</i>	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION ROADWAY STANDARD DRAWINGS	REV. 7/05
APPROVED FOR DISTRIBUTION <i>John [Signature]</i>	CONCRETE HALF-BARRIER TRANSITION TO VERTICAL 32" TYPE 'F' WITH CAISSONS ②	DRAWING NO. C-10.70 Sheet 2 of 3

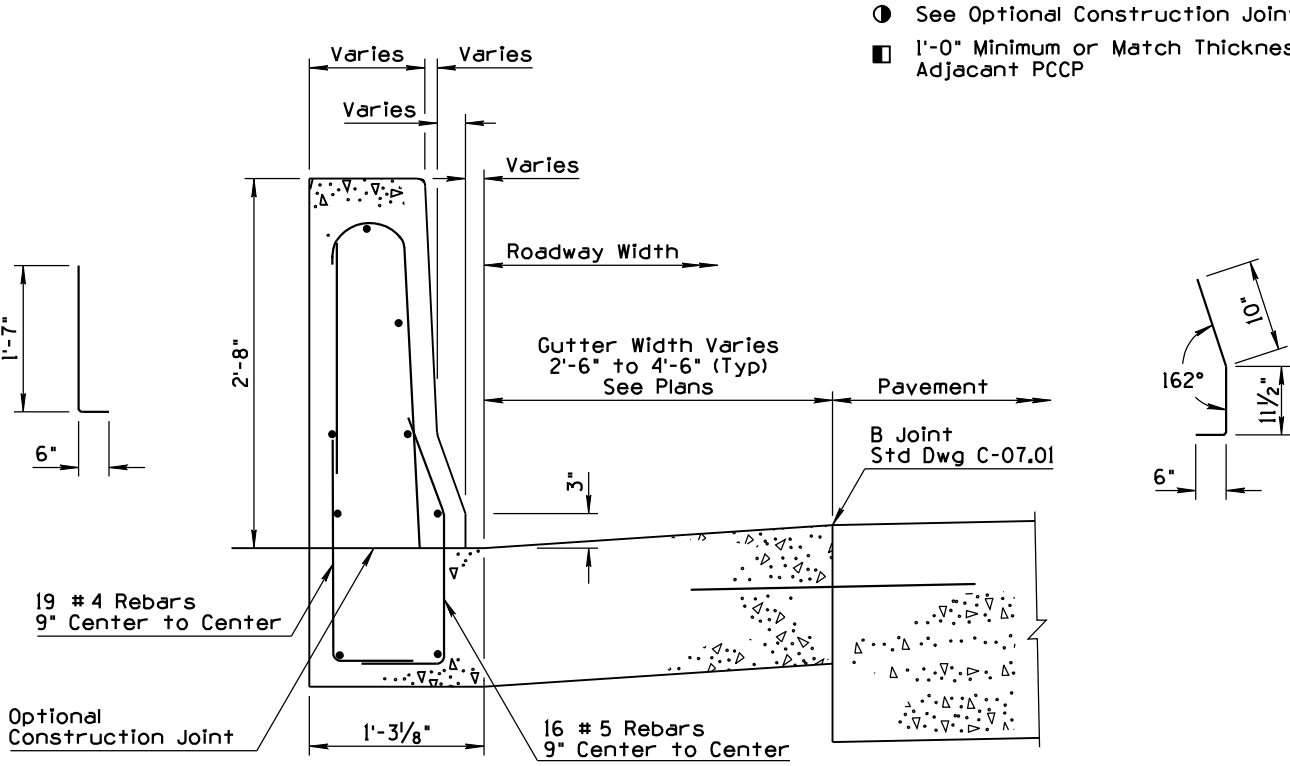
NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	REISSUED STD DWG	RLF	9/04
2	ADDED REFERENCE	RLF	9/04
3	REMOVED ANCHOR PLATE DETAIL	RLF	9/04
4	REVISED NOTE	RLF	7/05



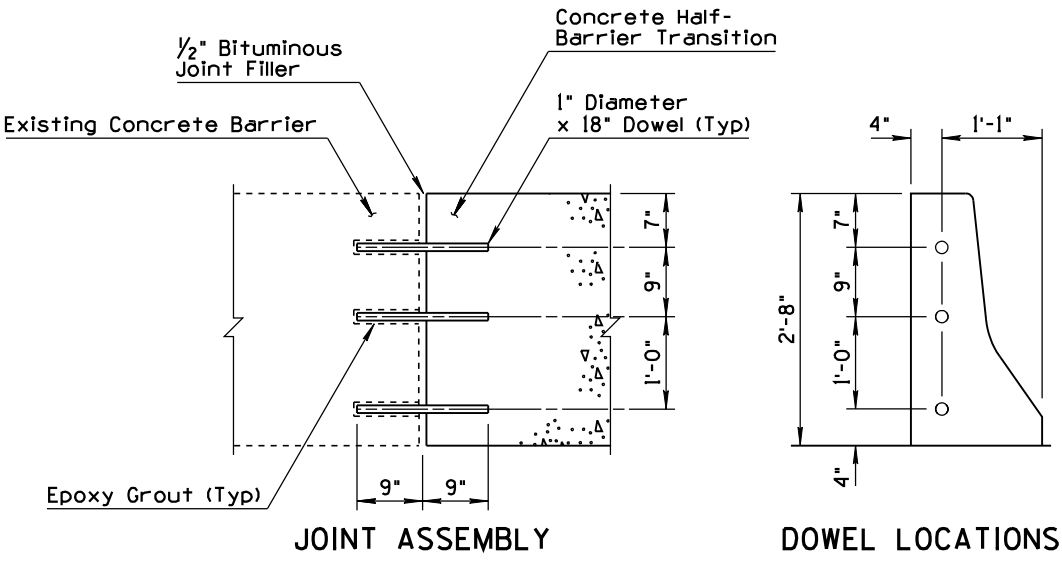
SECTION A-A



SECTION C-C



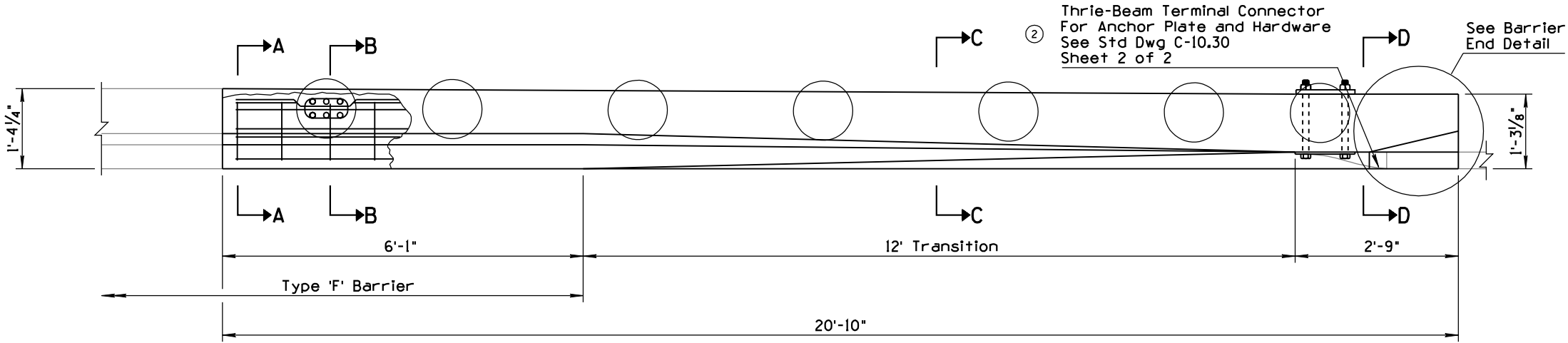
SECTION B-B



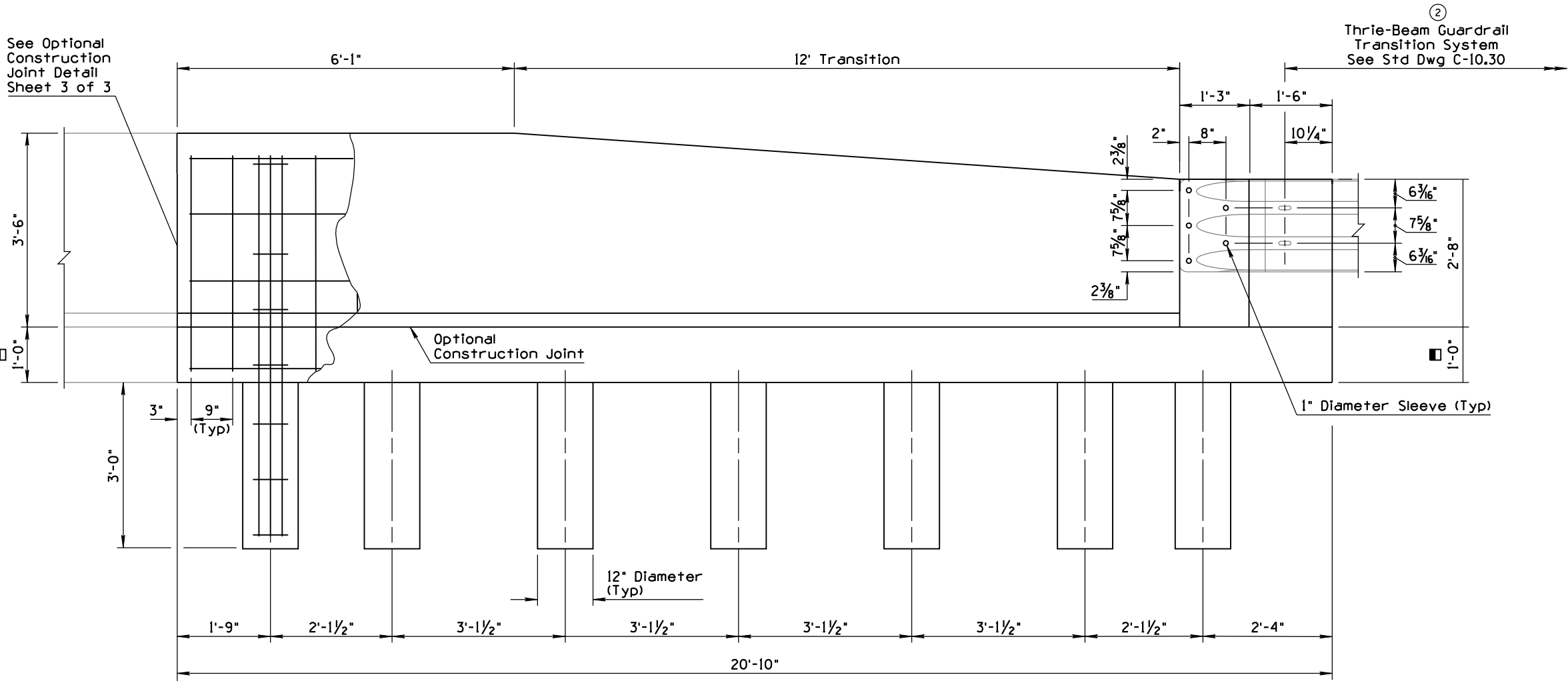
CONSTRUCTION JOINT DETAIL (OPTIONAL)

APPROVED FOR DESIGN <i>Mary Viparina</i>	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION ROADWAY STANDARD DRAWINGS	REV. 7/05
APPROVED FOR DISTRIBUTION <i>John Smith</i>	CONCRETE HALF-BARRIER TRANSITION TO VERTICAL 32" TYPE 'F' WITH CURB & GUTTER	DRAWING NO. ① C-10.71 Sheet 2 of 2

NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	REISSUED STANDARD DRAWING	RLF	9/04
2	REVISED NOTE	RLF	7/05
3			
4			



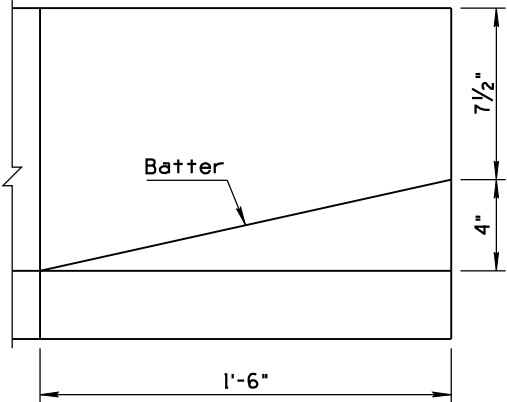
PLAN



ELEVATION
BARRIER WITHOUT CURB

GENERAL NOTES

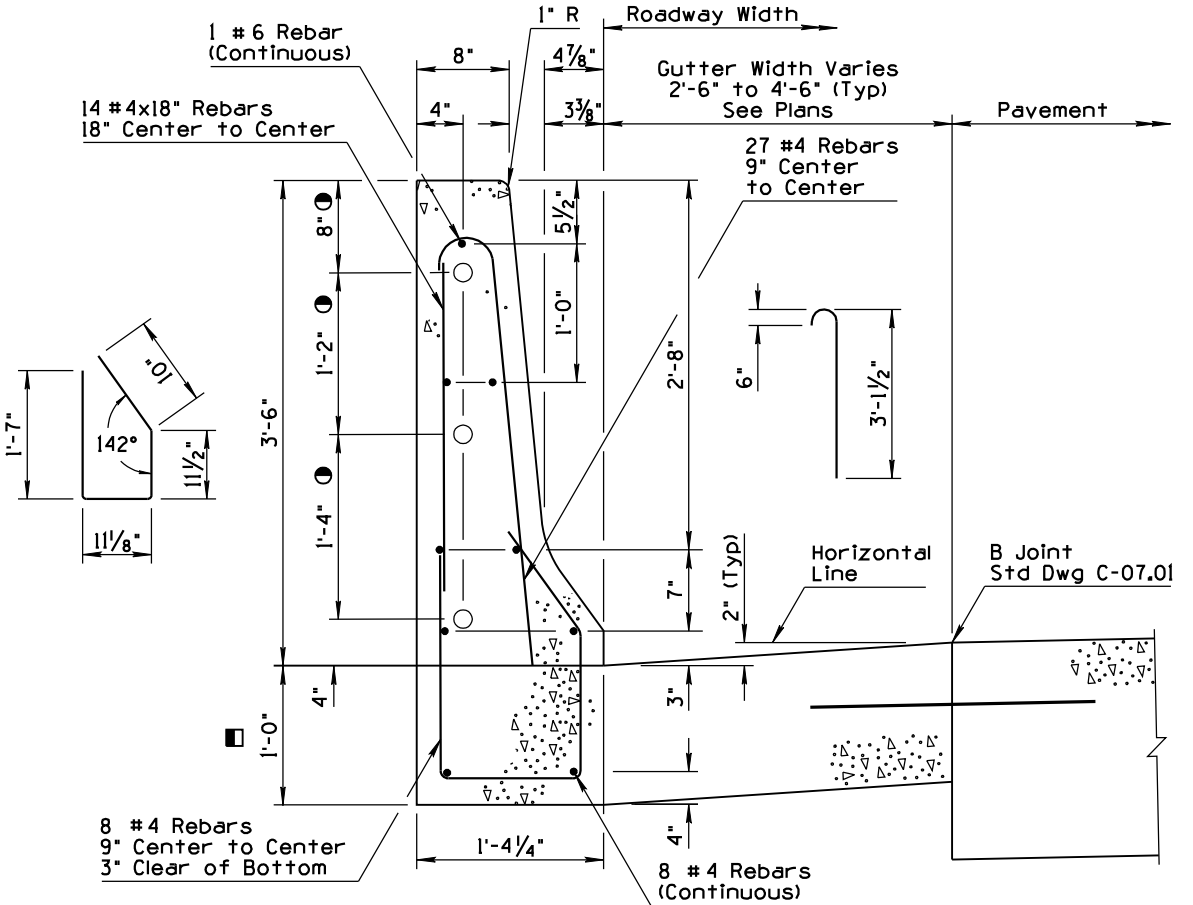
- Concrete shall be Class S, $f'_c=4000$ PSI.
 - All rebar shall have 2" minimum clear cover unless otherwise noted.
 - All bend dimensions for rebar are out-to-out of rebars.
- 1'-0" Minimum or Match Thickness of Adjacent PCCP



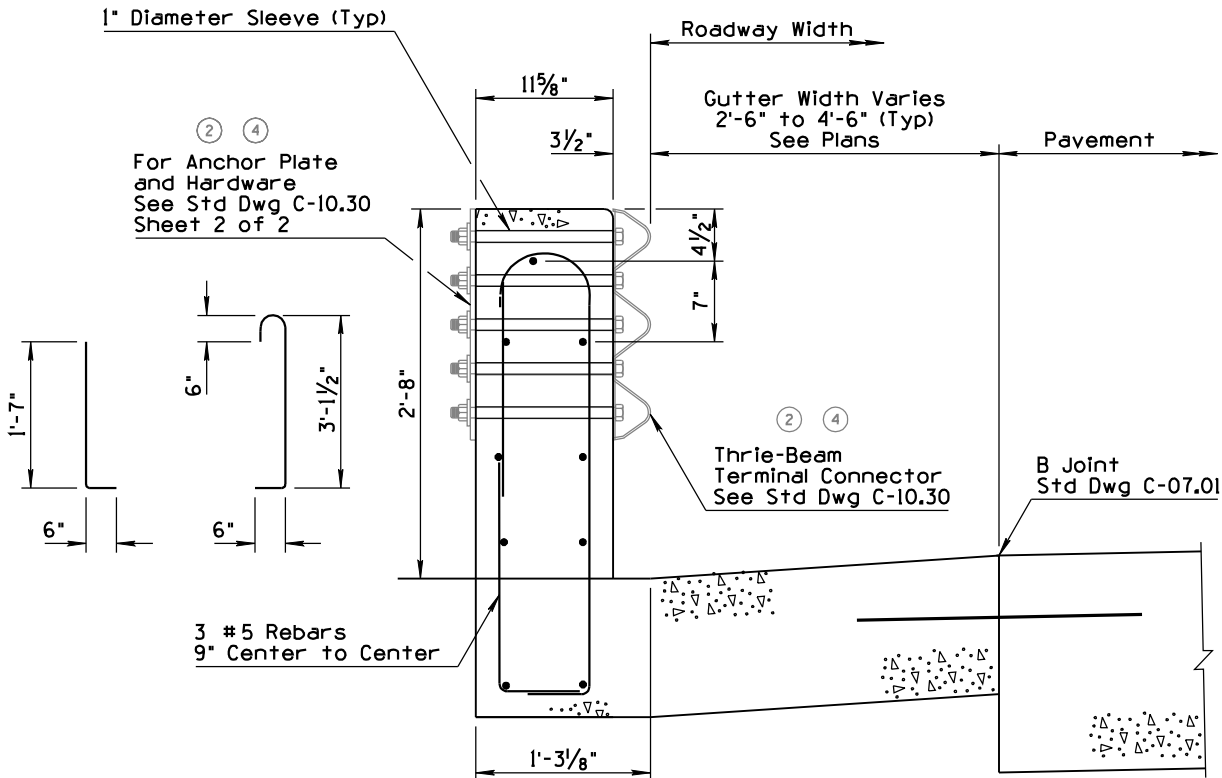
BARRIER END DETAIL

APPROVED FOR DESIGN <i>Mary Viparina</i>	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION ROADWAY STANDARD DRAWINGS	REV. 7/05
APPROVED FOR DISTRIBUTION <i>John Smith</i>	CONCRETE HALF-BARRIER TRANSITION TO VERTICAL 42" TO 32" TYPE 'F' WITH CAISSONS	DRAWING NO. ① C-10.72 Sheet 1 of 3

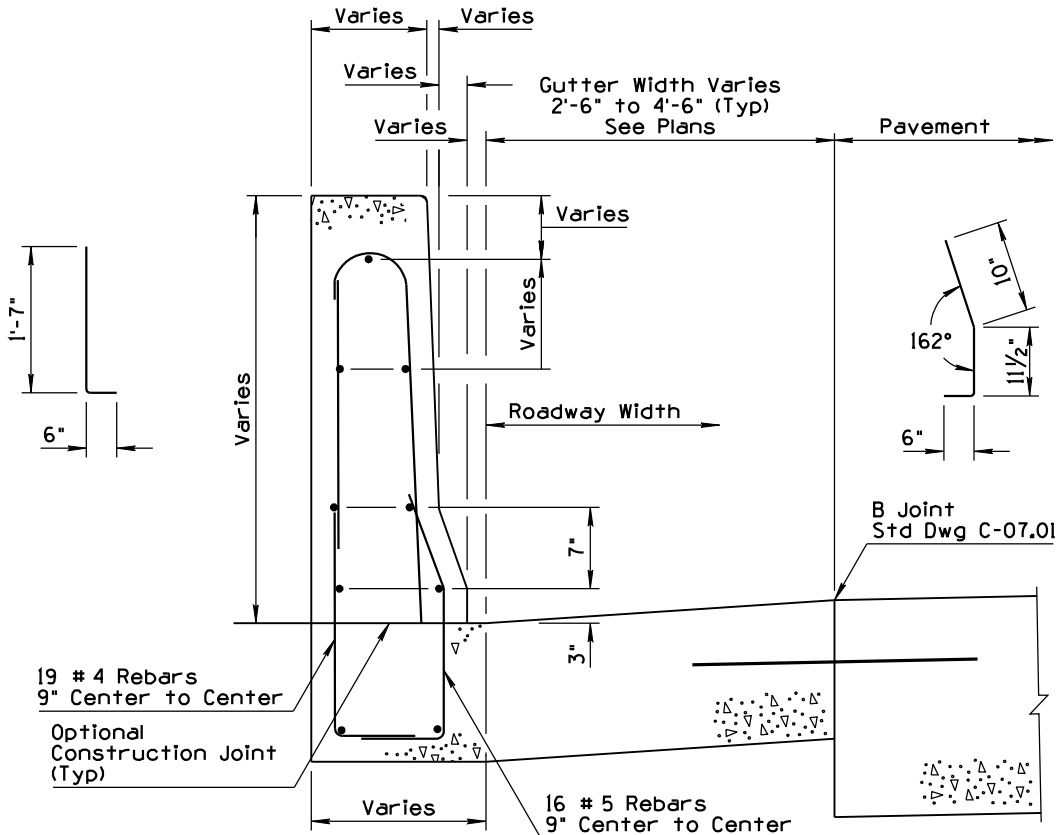
NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	REVISED TITLE	RLF	9/04
2	ADDED REFERENCE	RLF	9/04
3	REMOVED ANCHOR PLATE DETAIL	RLF	9/04
4	REVISED NOTE	RLF	7/05



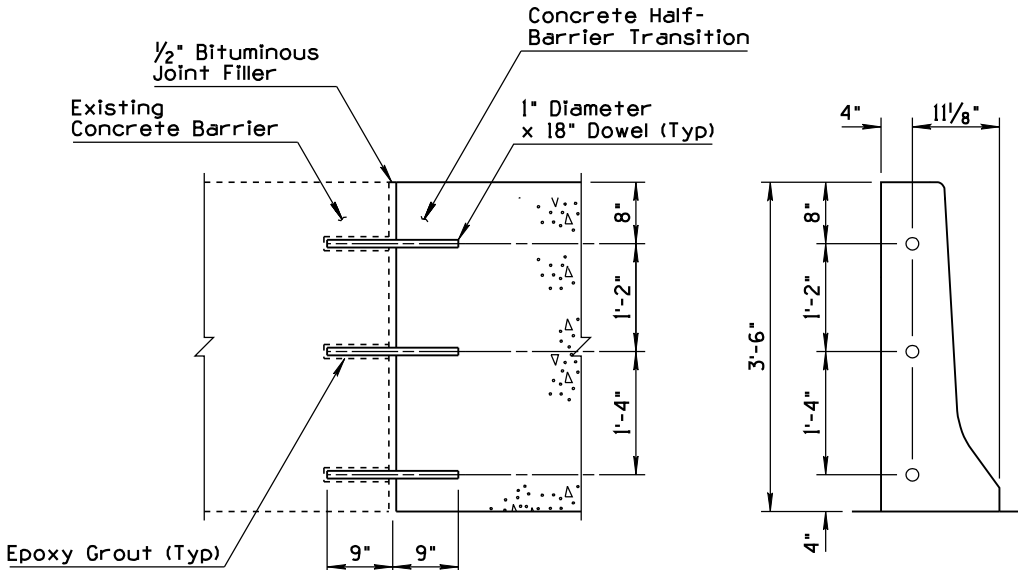
SECTION A-A



SECTION C-C



SECTION B-B



JOINT ASSEMBLY

DOWEL LOCATIONS

CONSTRUCTION JOINT DETAIL (OPTIONAL)

- See Optional Construction Joint Detail
- 1'-0" Minimum or Match Thickness of Adjacent PCCP

APPROVED FOR DESIGN <i>May Viparina</i>	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION ROADWAY STANDARD DRAWINGS	REV. 7/05
APPROVED FOR DISTRIBUTION <i>John Smith</i>	CONCRETE HALF-BARRIER TRANSITION TO VERTICAL 42" TO 32" TYPE 'F' WITH GUTTER	DRAWING NO. C-10.73 Sheet 2 of 2

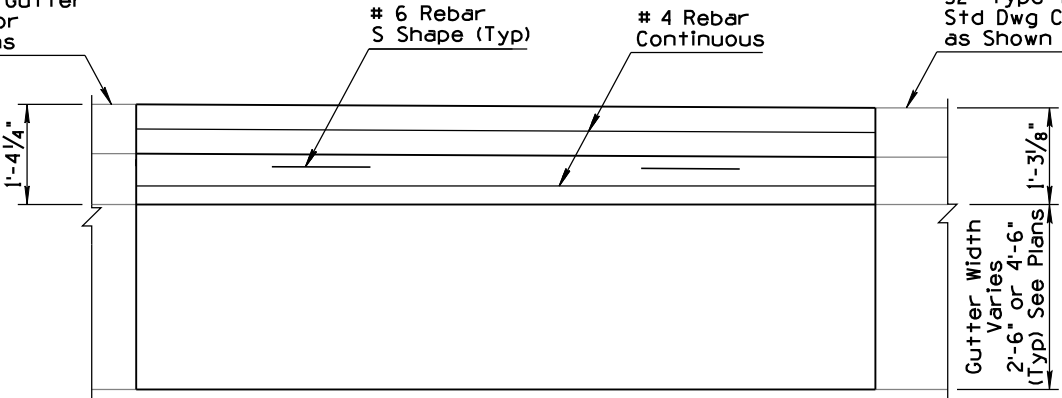
NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	RENAMED STD DWG FROM C-10.86 & REVISED TITLE	RLF	9/04
2	REVISED GENERAL NOTE 2	RLF	9/04
3	REVISED SECTION A-A	RLF	9/04
4	REMOVED DIMENSION	RLF	7/05

GENERAL NOTES

1. Half-Barrier Transition shall be constructed by the formed cast-in-place method.
2. Concrete shall be Class S, $f'_c=4000$ PSI.
3. If the footing and barrier are cast monolithically, # 6 S shape rebars are not required.
4. Barrier width shall not exceed the barrier footing width nor overhang the adjacent pavement.
5. # 4 rebar shall extend 12" past the construction joint at the completion of the day's pour.
6. Thickness of gutter, "D" can be adjusted to match the PCCP thickness, as approved by the Engineer.
7. Two-inch deep construction joints shall be placed in the gutter at locations which match the joints in adjacent PCCP and at approximate 15' centers when adjacent to AC pavement. Joints shall be either hand tooled or sawn.

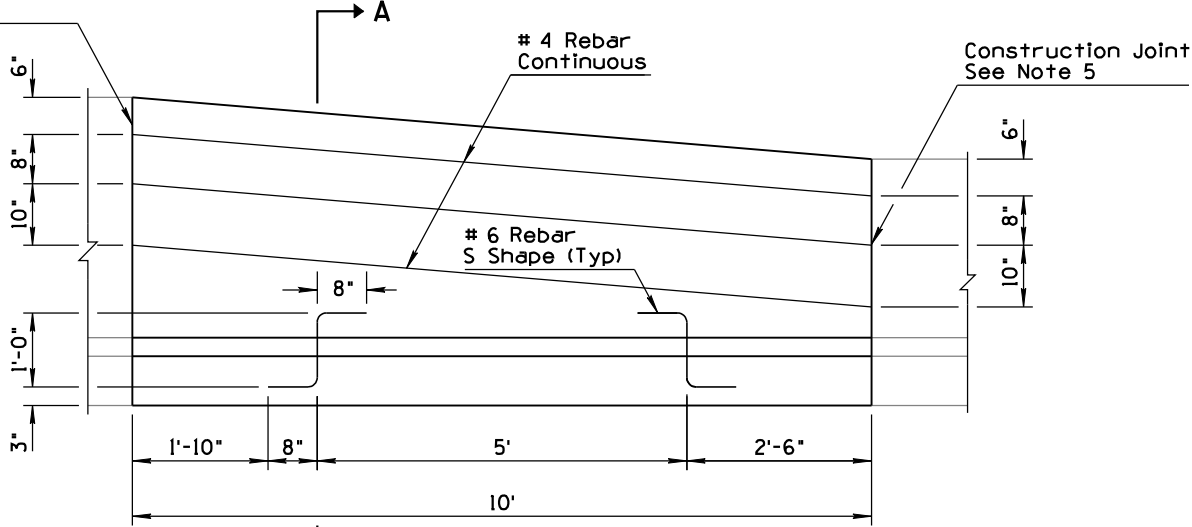
Concrete Half Barrier
42" Type 'F' with Gutter
Std Dwg C-10.53 or
as Shown on Plans

Concrete Half Barrier
32" Type 'F' with Gutter
Std Dwg C-10.52 or
as Shown on Plans

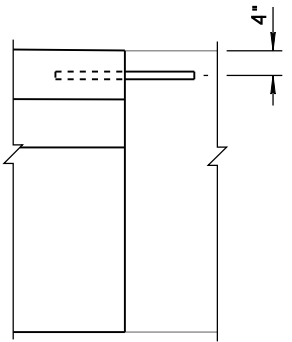


PLAN

Construction Joint
See Note 5

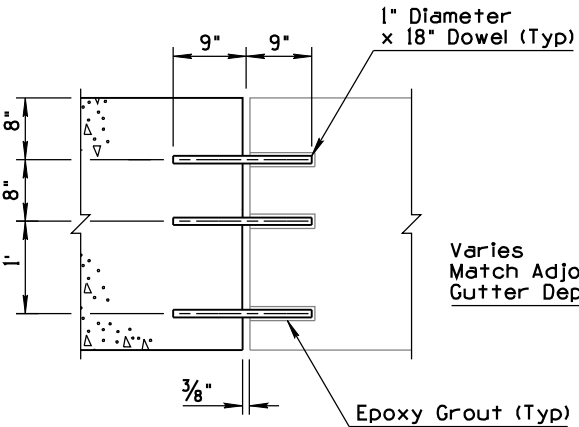


ELEVATION

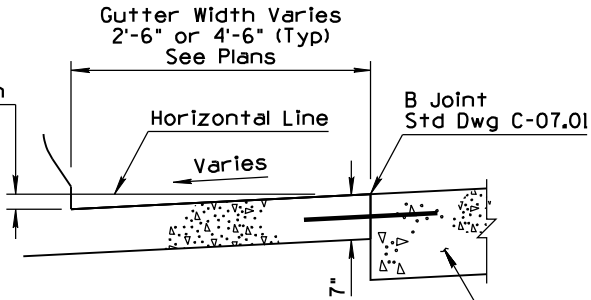


PLAN

CONSTRUCTION JOINT DETAIL
(OPTIONAL)

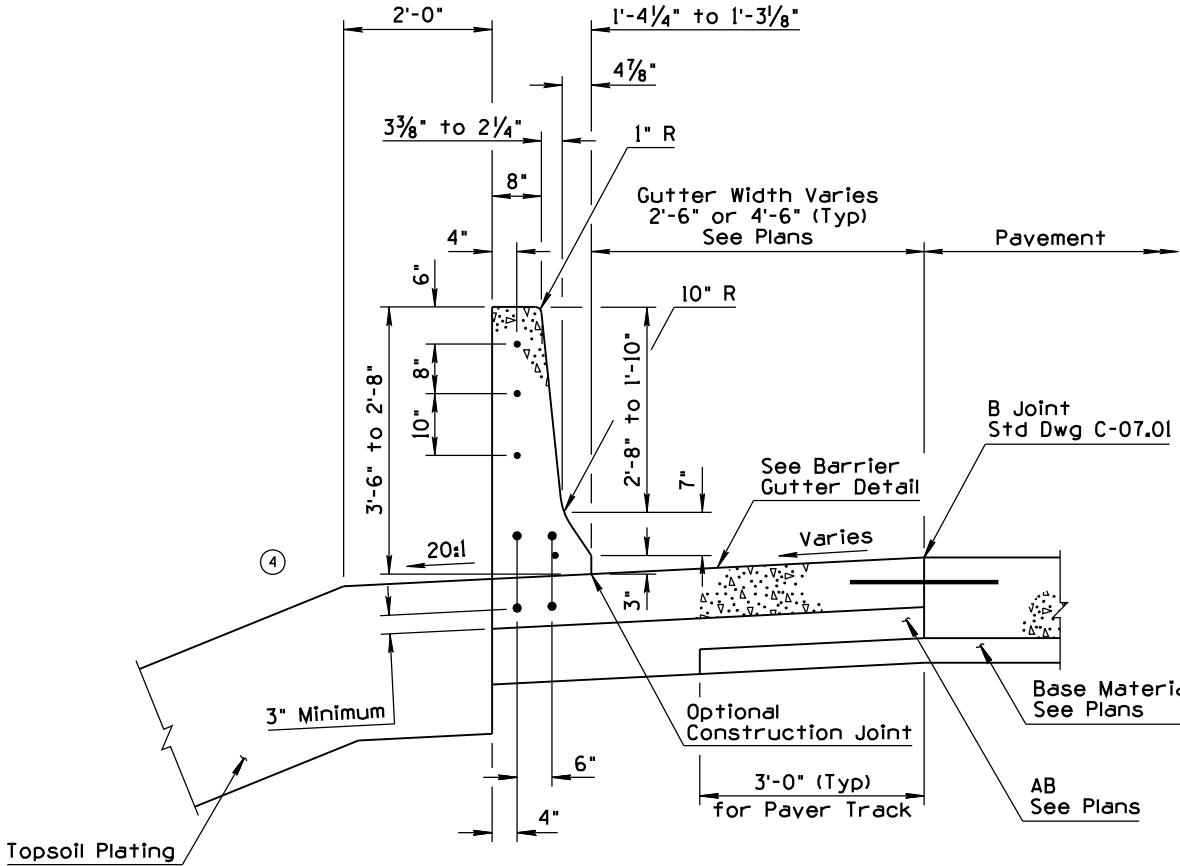


ELEVATION



BARRIER GUTTER DETAIL

PCCP
See Plans

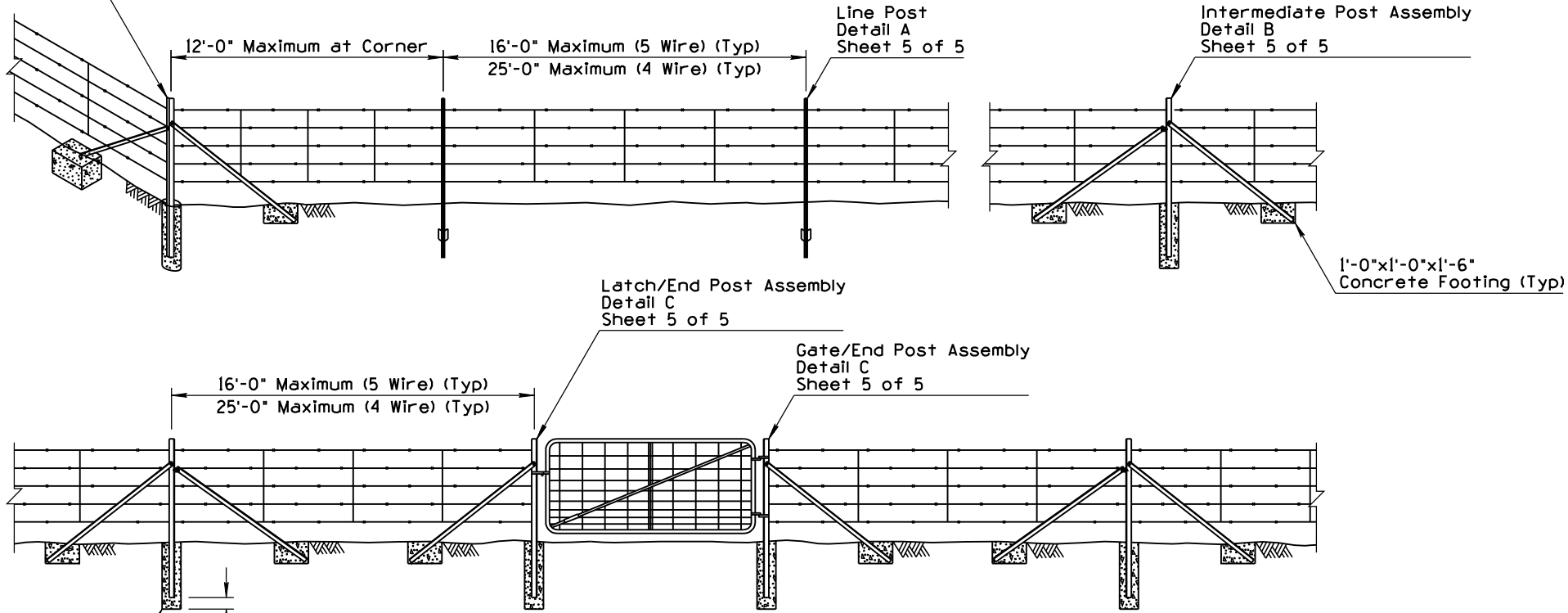


SECTION A-A

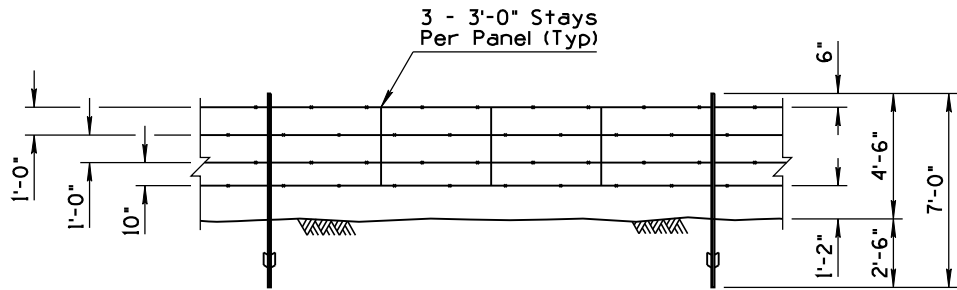
APPROVED FOR DESIGN <i>Mary Viparina</i>	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION ROADWAY STANDARD DRAWINGS	REV. 7/05
APPROVED FOR DISTRIBUTION <i>John Smith</i>	CONCRETE HALF-BARRIER TRANSITION 42" TO 32" TYPE 'F'	DRAWING NO. C-10.74

NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	REISSUE STD	PNB	7/94
2	REVISED GENERAL NOTE 1	RLF	7/05
3			
4			

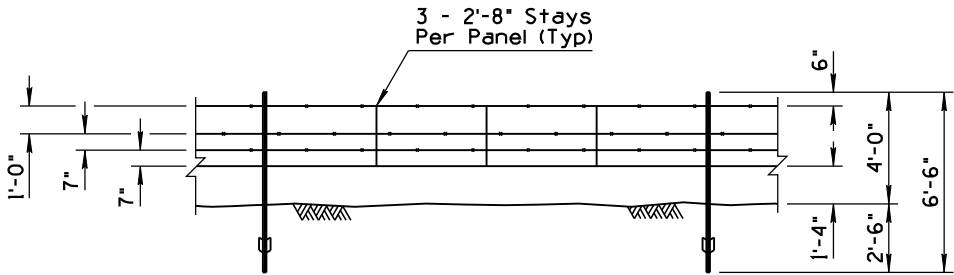
Corner Post Assembly
Detail D
Sheet 5 of 5



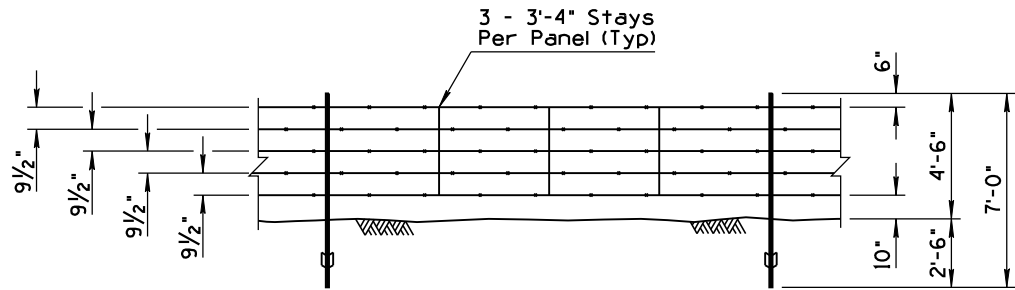
TYPICAL BARBED WIRE FENCE INSTALLATION-TYPE 2 BW SHOWN



TYPE 1 BARBED WIRE (BW) (4 WIRE)



BARBED WIRE GAME FENCE (GF)



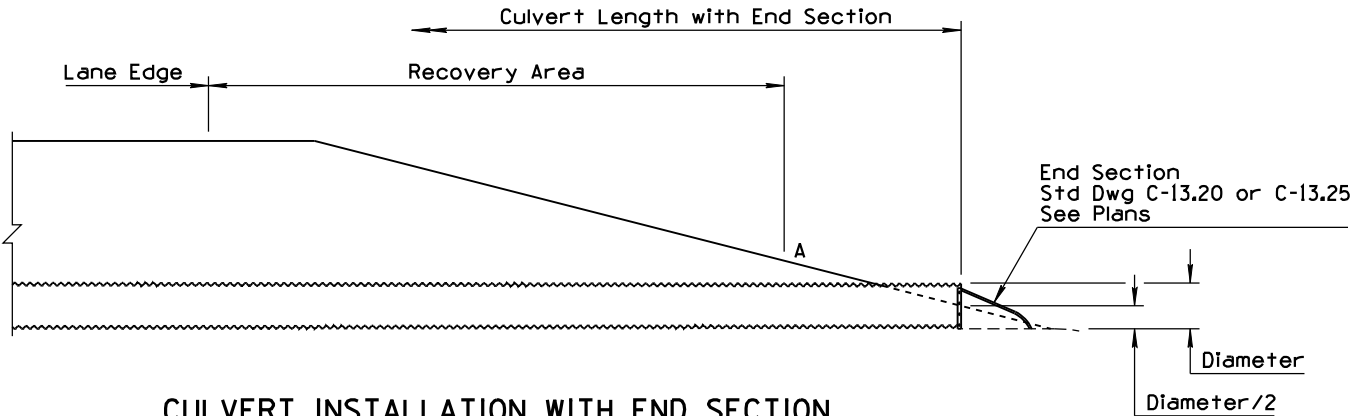
TYPE 2 BARBED WIRE (BW) (5 WIRE)

GENERAL NOTES

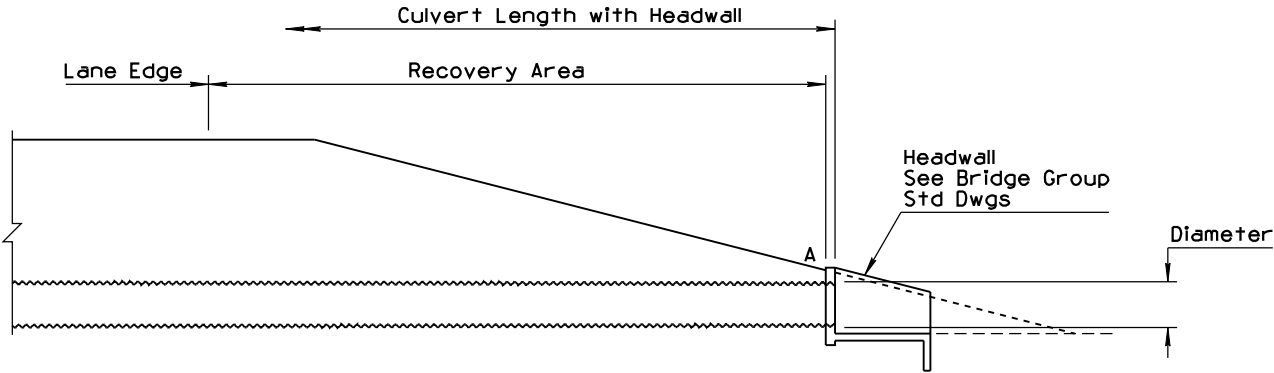
- 1. Intermediate Post Assemblies shall be located as shown and at intervals not to exceed 650', or midway between all braced posts.
- 2. For game fence the bottom wire shall be barbless.
- 3. The stays on game fence shall have their ends turned up to prevent injuries to game.

APPROVED FOR DESIGN <i>May Viparina</i>	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION ROADWAY STANDARD DRAWINGS	REV. 7/05
APPROVED FOR DISTRIBUTION <i>John [Signature]</i>	① FENCE BARBED WIRE	DRAWING NO. C-12.10 Sheet 2 of 5

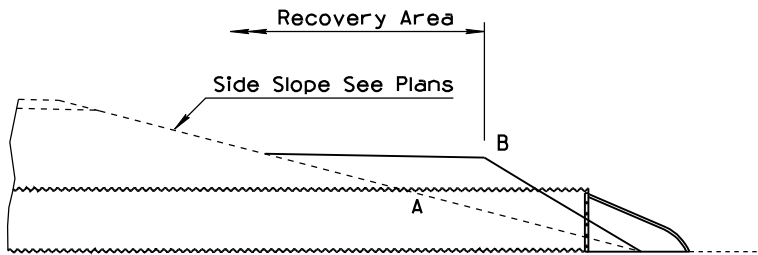
NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	REISSUED STANDARD DRAWING	RLF	7/05
2			
3			
4			



CULVERT INSTALLATION WITH END SECTION

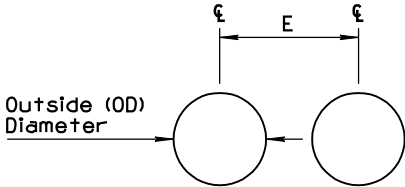


CULVERT INSTALLATION WITH HEADWALL

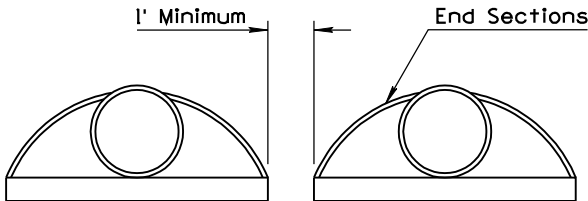


PIPE WITH BERM REQUIREMENT DETAIL
See General Note 4

MINIMUM SPACING FOR MULTIPLE PIPES WITH HEADWALL	
Diameter or Span (In)	E (Ft-In)
18	2-6
24	3-0
30	3-9
36	4-6
42	5-3
48 to 66	OD + 3-0
72 and Over	OD + 3-0



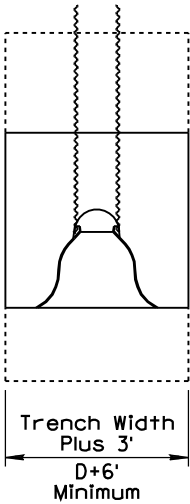
MINIMUM SPACING FOR MULTIPLE PIPES WITH HEADWALL



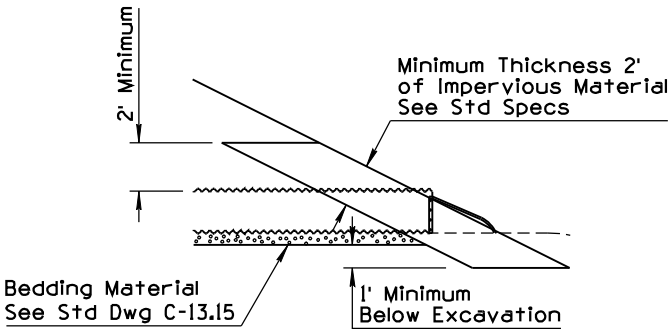
MINIMUM SPACING FOR MULTIPLE PIPES WITH END SECTIONS

GENERAL NOTES

- See plans for any required inlet and/or outlet protection.
- E dimension applies to both non-trench and trench conditions.
- Minimum cover over pipe culverts shall be 1', measured from the top of pipe.
- See Pipe Berm Requirement Detail for pipe berm requirements and Std Dwg C-03.10 for installation. If Point A is within the recovery area, then a pipe berm is required and Point B is set at the edge of the recovery area.
- Slope plating shall conform to Std Spec 501.



PLAN

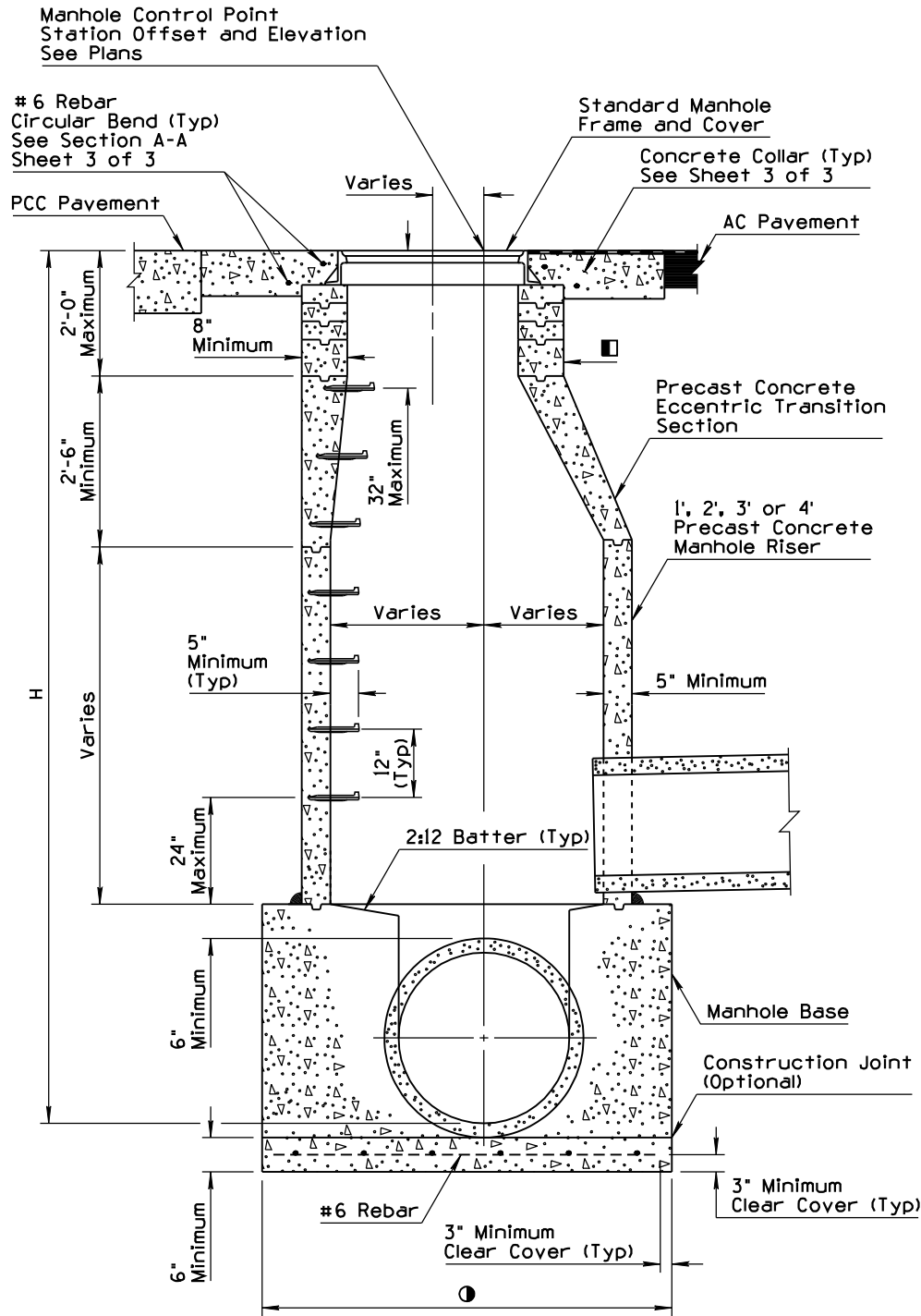


ELEVATION

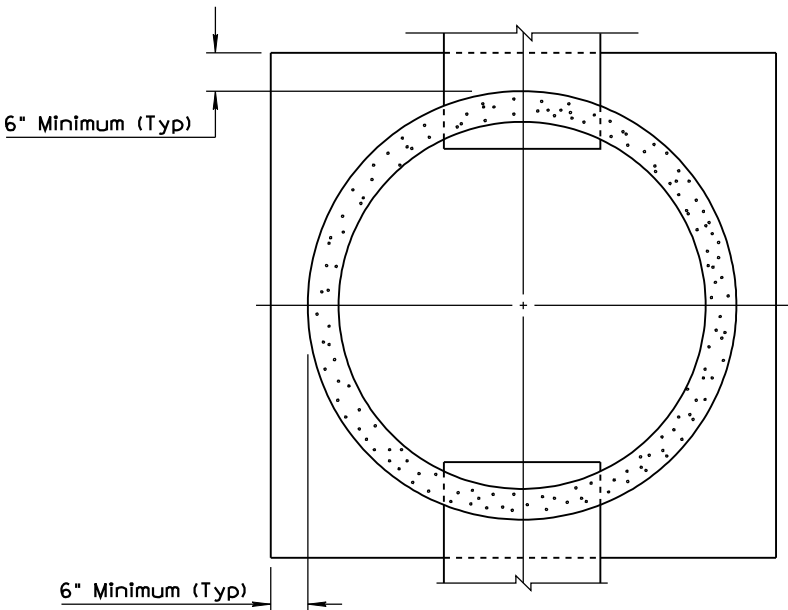
SLOPE PLATING FOR PIPE WITH END SECTIONS

APPROVED FOR DESIGN <i>May Viparina</i>	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION ROADWAY STANDARD DRAWINGS	REV. ① 7/05
APPROVED FOR DISTRIBUTION <i>John Smith</i>	PIPE CULVERT INSTALLATION	DRAWING NO. C-13.10 Sheet 1 of 2

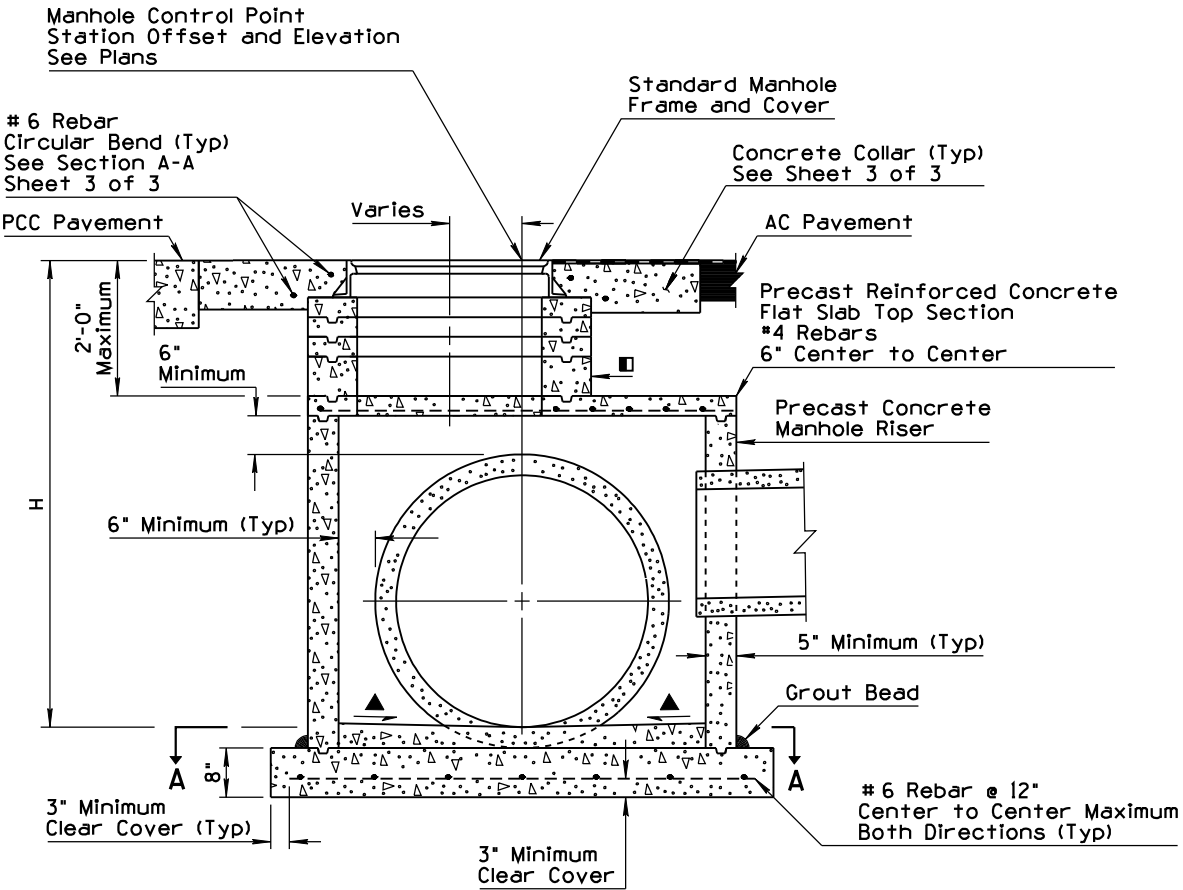
NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	RENAMED STD DWG FROM C-18.40 TO C-18.10, SHEET 1 OF 3	RLF	9/04
2	REVISED GENERAL NOTE	RLF	7/05
3			
4			



SECTION
NORMAL INSTALLATION
STANDARD BASE



SECTION A-A



SECTION
SHALLOW INSTALLATION
SLAB BASE

GENERAL NOTES

- Pipe sizes and elevations are shown on plans.
- The manhole height, H, shall be measured from the lowest invert elevation to the top of the manhole frame.
- Concrete for cast-in-place manholes shall be Class B.
- All manholes deeper than 56 inches shall have steps. Manhole steps shall be constructed in accordance with AASHTO M199. Where precast manholes are used, the steps shall be installed at the same time sections are cast.
- Per OSHA requirements, special treatments to include landings are required for heights exceeding 30 ft.
- Precast manhole sections shall be manufactured in accordance with AASHTO M199, except that the compressive strength of each section shall be determined and accepted in accordance with Std Spec 1006-7.
- Manhole location and elevation shall be as shown on plans. See Sheet 1 of 3 for station location reference point.
- Backfill material shall be compacted to at least 95 percent of the maximum density per the applicable test method of the ADOT Materials Testing Manual.
 - 4", 6", 8" or 12" (30" Inside Diameter) Grade Rings
 - 1/4" / ft
 - See Sheet 2 of 3

APPROVED FOR DESIGN <i>Mary Viparina</i>	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION ROADWAY STANDARD DRAWINGS	REV. 7/05
APPROVED FOR DISTRIBUTION <i>John [Signature]</i>	MANHOLE RISER DETAILS	DRAWING NO. 1 C-18.10 Sheet 1 of 3