Updates to the May, 2007 Construction Standard Drawings

1. November 1, 2007 Revised Standard Drawings C-07.02, C-21.10 and C-21.20
2. November 2, 2009 Revised Standard Drawings C-10.06, Sheets 1 and 2 of 2.

CONSTRUCTION STANDARD DRAWINGS - INDEX

DRAWING NO.	TITLE
C-01.10	SYMBOL LEGEND (4 SHEETS)
C-01.30	GENERAL ABBREVIATIONS (3 SHEETS)
C-02.10	SLOPES, RURAL DIVIDED HIGHWAYS
C-02.20	SLOPES, RURAL UNDIVIDED AND FRINGE-URBAN HIGHWAYS
C-02.30	SLOPES, MISCELLANEOUS ROADWAYS
C-03.10	DITCHES, CHANNELS, DIKES AND BERMS (5 SHEETS)
C-04.10	SPILLWAY, EMBANKMENT (2 SHEETS)
C-04.20	DOWNDRAIN, EMBANKMENT (2 SHEETS)
C-04.30	SPILLWAY LENGTH TABLE
C-04.40	DOWNDRAIN LENGTH TABLE
C-04.50	DOWNDRAIN ENERGY DISSIPATOR
C-05.10	CURB & GUTTER, CURB, AND GUTTER
C-05.12	CURB & GUTTER TRANSITIONS (3 SHEETS)
C-05.20	CONCRETE DRIVEWAYS & SIDEWALKS (2 SHEETS)
C-05.30	SIDEWALK RAMP (7 SHEETS)
C-05.40	MEDIAN PAVING AND NOSE TAPER
C-05.50	CONCRETE BUS BAY
C-06.10	DRIVEWAY & TURNOUT LAYOUTS (2 SHEETS)
C-07.01	PCCP JOINTS (2 SHEETS)
C-07.02	LOAD TRANSFER DOWEL ASSEMBLY
C-07.03	PCCP JOINT LOCATIONS, MAINLINE (8 SHEETS)
C-07.04	PCCP JOINT LOCATIONS, RAMPS & CROSSROADS (5 SHEETS)
C-07.06	TRENCH BACKFILL AND PAVEMENT REPLACEMENT
C-08.20	PAVED GORE AREA

DRAWING NO.	TITLE
C-10.00	GUARDRAIL MEASUREMENT LIMITS
C-10.01	GUARDRAIL INSTALLATION, TYPE A AND REFLECTOR TAB
C-10.02	GUARDRAIL INSTALLATION, TYPE B AND REFLECTOR TAB
C-10.03	W-BEAM GUARDRAIL, G4(1W) AND G4(2W), BLOCKED-OUT TIMBER POST
C-10.04	W-BEAM GUARDRAIL, G4(1S), BLOCKED-OUT STEEL POST
C-10.05	W-BEAM GUARDRAIL, G4(MODIFIED), WITH FREEWAY CURB & GUTTER (2 SHEETS)
C-10.06	W-BEAM GUARDRAIL, NESTED (2 SHEETS)
C-10.07	W-BEAM GUARDRAIL, BOLTED ANCHOR (2 SHEETS)
C-10.08	W-BEAM GUARDRAIL, END ANCHOR
C-10.20	THRIE-BEAM GUARDRAIL, G9, BLOCKED-OUT STEEL POST
C-10.30	GUARDRAIL TRANSITION, W-BEAM TO CONCRETE HALF BARRIER, 32" TYPE 'F'
C-10.40	CONCRETE MEDIAN BARRIER, 32" TYPE 'F', CAST-IN-PLACE
C-10.41	CONCRETE MEDIAN BARRIER, 42" TYPE 'F', CAST-IN-PLACE
C-10.42	GLARE SCREEN, CONCRETE MEDIAN BARRIER (3 SHEETS)
C-10.50	CONCRETE HALF BARRIER, 32" TYPE 'F' (2 SHEETS)
C-10.51	CONCRETE HALF BARRIER, 32" TYPE 'F', WITH SIDEWALK
C-10.52	CONCRETE HALF BARRIER, 32" TYPE 'F', WITH GUTTER
C-10.53	CONCRETE HALF BARRIER, 42" TYPE 'F', WITH GUTTER
C-10.54	CONCRETE HALF BARRIER, 32" TYPE 'F' AT PIERS (3 SHEETS)
C-10.55	CONCRETE HALF BARRIER, 42" TYPE 'F' AT PIERS (3 SHEETS)
C-10.70	CONCRETE HALF-BARRIER TRANSITION TO VERTICAL, 32" TYPE 'F' WITH CAISSONS (3 SHEETS)
C-10.71	CONCRETE HALF-BARRIER TRANSITION TO VERTICAL, 32" TYPE 'F' WITH CURB & GUTTER (2 SHEETS)
C-10.72	CONCRETE HALF-BARRIER TRANSITION TO VERTICAL, 42" TO 32" TYPE 'F' WITH CAISSONS (3 SHEETS)
C-10.73	CONCRETE HALF-BARRIER TRANSITION TO VERTICAL, 42" TO 32" TYPE 'F' WITH GUTTER (2 SHEETS)
C-10.74	CONCRETE HALF-BARRIER TRANSITION, 42" TO 32" TYPE 'F'
C-10.75	CONCRETE HALF-BARRIER TRANSITION, TYPE 'F' TANGENT DEPARTURE (2 SHEETS)
C-10.76	CONCRETE HALF-BARRIER TRANSITION, TYPE 'F' AT RADIUS, 32" TO 0"
C-10.77	CONCRETE HALF-BARRIER TRANSITION, END TERMINAL, CURB AND GUTTER
C-11.10	ROADWAY CATTLE GUARD (4 SHEETS)
C-11.20	CATTLE GUARD, DRAINAGE
C-12.10	FENCE, WOVEN AND BARBED WIRE WITH GATES (5 SHEETS)
C-12.20	FENCE, CHAIN LINK TYPES 1 AND 2 WITH GATES (3 SHEETS)
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REV: 11/09

CONSTRUCTION STANDARD DRAWINGS - INDEX

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C-13.15	TYPICAL PIPE INSTALLATION
C-13.20	PIPE, REINFORCED CONCRETE END SECTION
C-13.25	PIPE, CORRUGATED METAL END SECTION
C-13.30	PIPE AND PIPE ARCH, CORRUGATED METAL CONCRETE INVERT PAVING
C-13.55	PIPE, CATTLE-VEHICLE PASS, MITERED END TREATMENT
C-13.60	SLOTTED DRAIN DETAILS
C-13.65	SLOTTED DRAIN, INSTALLATION DETAILS
C-13.70	STORM DRAIN, CONNECTION DETAILS
C-13.75	STORM DRAIN, OUTLET BARRIER GATE
C-13.76	STORM DRAIN OUTLET AND STORM DRAIN PLUG
C-13.80	PIPE COLLAR DETAILS
C-15.10	CATCH BASIN, TYPE 1
C-15.20	CATCH BASIN, TYPE 3 (3 SHEETS)
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C-15.40	CATCH BASIN, TYPE 5 (2 SHEETS)
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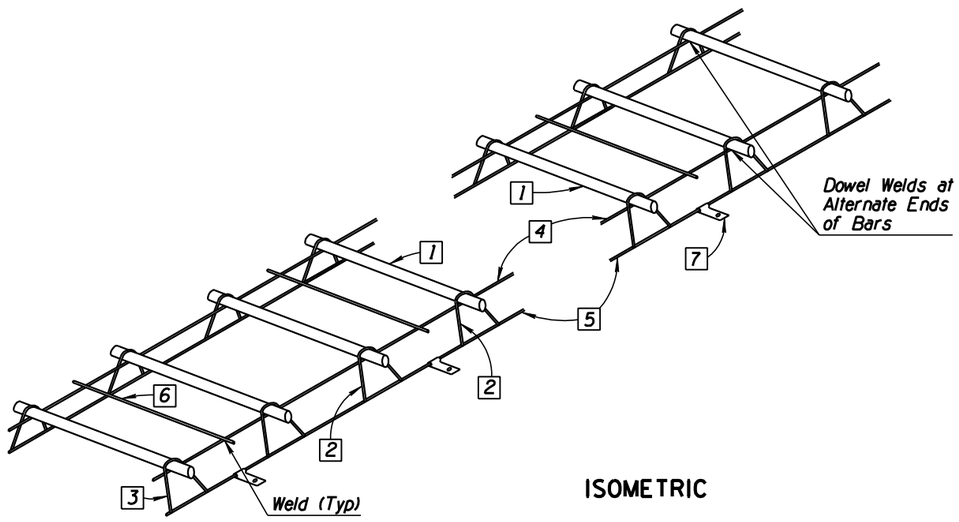
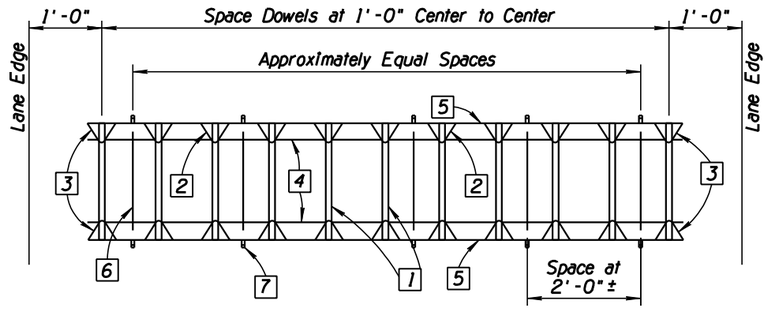
C-15.80	CATCH BASIN, FLUSH
C-15.81	CATCH BASIN, SIDE SLOPE
C-15.90	CATCH BASIN, MEDIAN DIKE (PRECAST)
C-15.91	FREEWAY CATCH BASIN DETAILS (2 SHEETS)
C-15.92	CATCH BASIN WITH TYPE 'F' CONCRETE HALF BARRIER (2 SHEETS)
C-16.40	IRRIGATION SLEEVES
C-17.10	RAIL BANK PROTECTION FOR DRAINAGEWAYS, TYPES 1, 2 & 3
C-17.15	RAIL BANK PROTECTION AT ABUTMENTS, TYPES 4, 5 & 6
C-17.20	RAIL BANK PROTECTION FOR DRAINAGEWAYS, TYPES 7, 8 & 9
C-18.10	MANHOLES (3 SHEETS)
C-19.10	FORD, CONCRETE WALLS (2 SHEETS)
C-21.10	SURVEY MONUMENT FRAME AND COVER
C-21.20	SURVEY MARKER

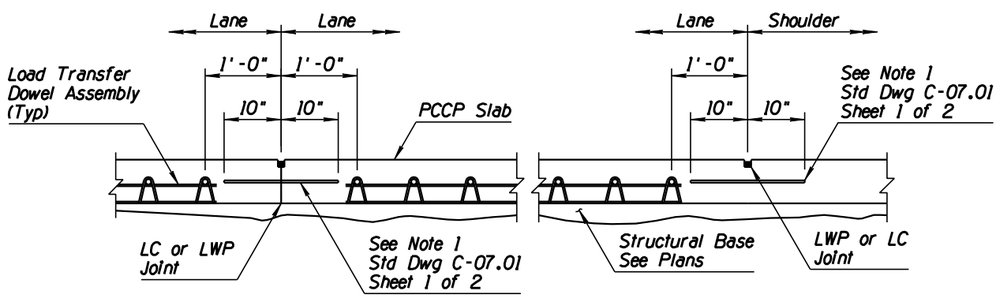
NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	INSERTED NEW GENERAL NOTE 1, RENUMBERED ALL NOTES	RLF	11/07
2			
3			
4			



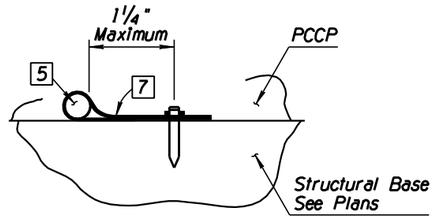
ISOMETRIC



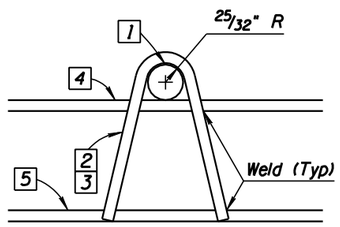
PLAN VIEW
LOAD TRANSFER DOWEL ASSEMBLY



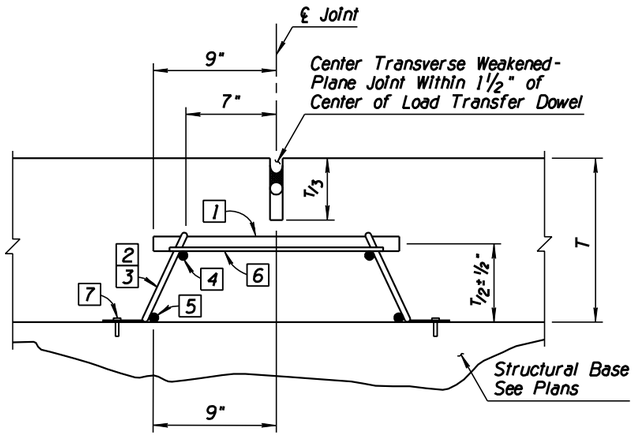
PLACEMENT AND EDGE CLEARANCE DETAIL



ANCHOR STRAP DETAIL



END AND INTERMEDIATE LEG DETAIL



TRANSVERSE WEAKENED-PLANE JOINT WITH
LOAD TRANSFER DOWEL ASSEMBLY

DIMENSION TABLE			
	Lane Width (Ft)		
	12	14	16
(Ft-In◑)	10-4	12-4	14-4

GENERAL NOTES

① 1. Load transfer dowel assemblies may be used when permitted in the project specifications.

2. Load transfer dowel assemblies are used with non-skewed, mainline PCCP joints.

3. When used, load transfer dowel assemblies are to be placed at each transverse weakened-plane joint on the traveled lanes as shown on the plans.

4. See Std Dwgs C-07.01 through C-07.04 for additional information.

5. See plans or Std Dwgs C-07.03 through C-07.04 for transverse joint spacing.

6. See plans for pavement thickness less than 12" or greater than 14".

Load transfer dowel assembly shall be assembled from the following materials:
(See Quantity Table)

[1] Dowel bars - 1½" diameter x 1'-6" plain round bars with coating. See Special Provisions.

[2] Intermediate legs - 2 gauge or W-5.5 wire.

[3] End legs - 2 gauge or W-5.5 wire.

[4] Upper space bar - 2 gauge or W-5.5 wire x ◑. (See Dimension Table)

[5] Lower space bar - 2 gauge or W-5.5 wire x ◑. (See Dimension Table)

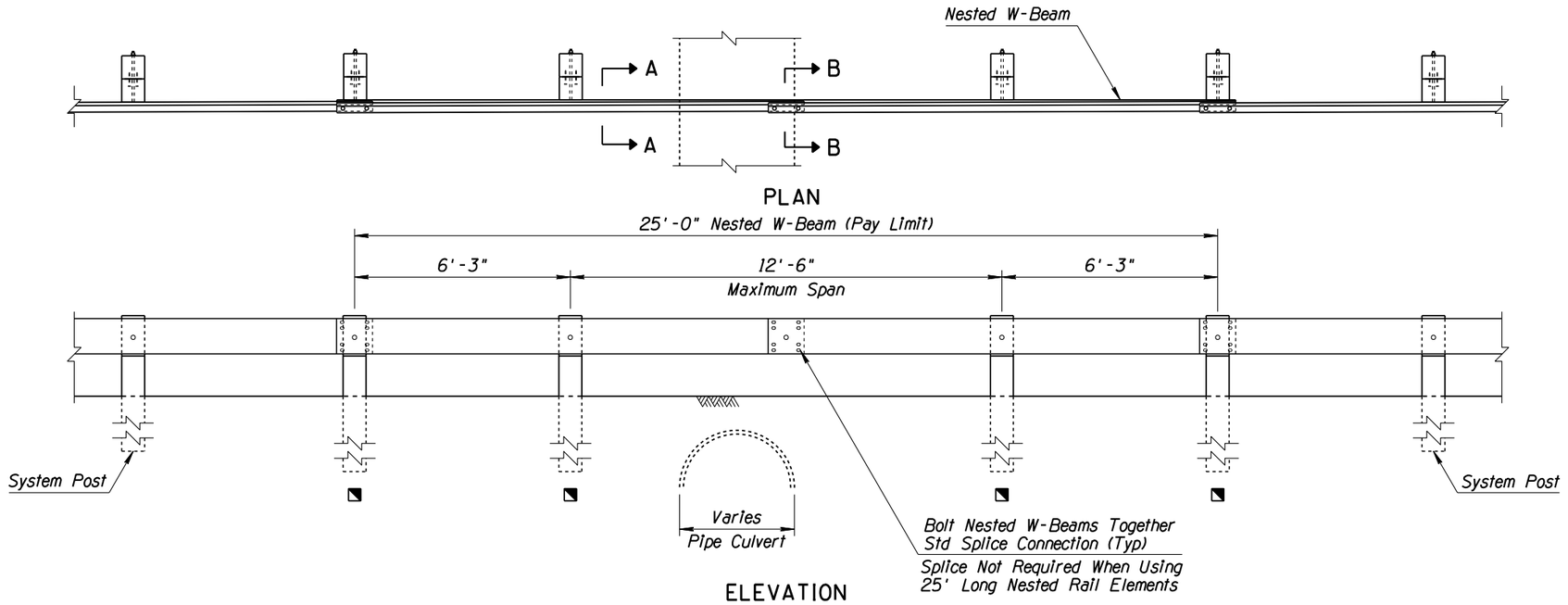
[6] Tie bars - W-1.5 wire x 16".

[7] Anchor strap - 1"x3" steel strap, 0.079 thick. Place with a 1½" minimum length steel nail for LCB, 4" minimum length steel nail for ACB or AB, 0.145 diameter ASTM A227 Class 1 with ¼" head or washer.

QUANTITY TABLE			
Item No	Lane Width (Ft)		
	12	14	16
[1]	11	13	15
[2]	18	22	26
[3]	4	4	4
[4]	2	2	2
[5]	2	2	2
[6]	5	6	7
[7]	10	12	14

APPROVED FOR DESIGN	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION ROADWAY STANDARD DRAWINGS	REV. 11/07
APPROVED FOR DISTRIBUTION	LOAD TRANSFER DOWEL ASSEMBLY	DRAWING NO. C-07.02

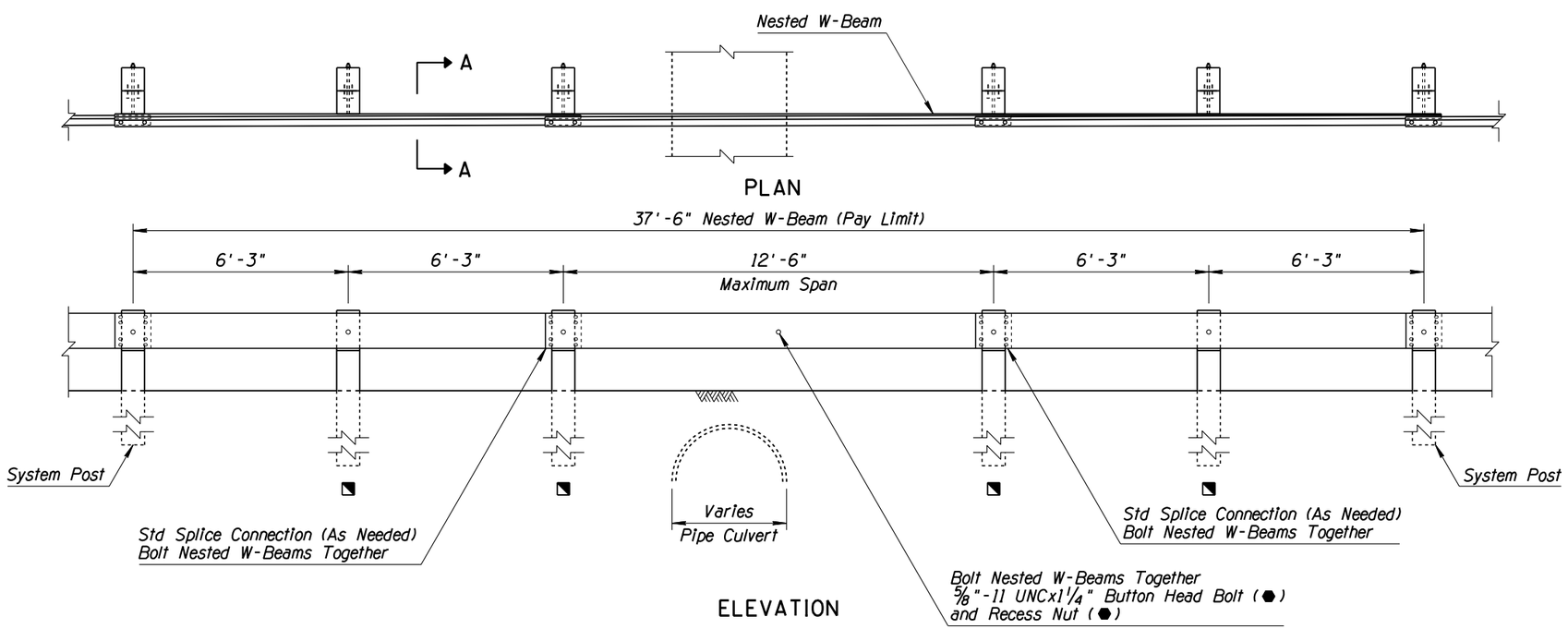
NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	REVISED TITLES, SPLICE NOTES & GENERAL NOTES	RLF	11/09
2			
3			
4			



PLAN

ELEVATION

TYPE 1 (SPLICE CONNECTION INSIDE 12'-6" SPAN)



PLAN

ELEVATION

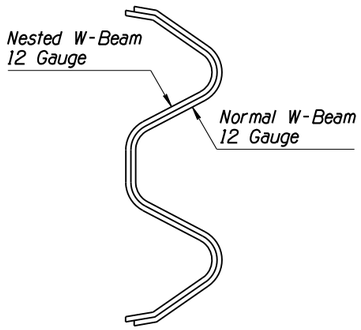
TYPE 2 (SPLICE CONNECTION OUTSIDE 12'-6" SPAN)

GENERAL NOTES

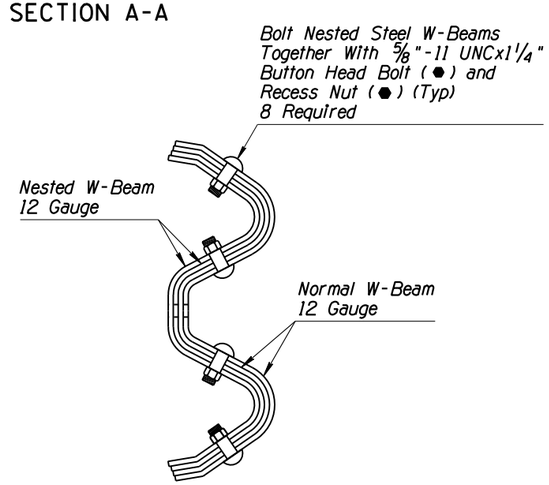
1. Construct either Type 1 or Type 2 for 12'-6" span.
2. For Type 1 and Type 2, a maximum of one post may be eliminated within a span of nested guardrail.
3. Minimum length of nested guardrail is one 6'-3" post spacing on each side of maximum span.
4. See Std Dwgs C-10.03 and C-10.04 for additional information and dimensions.
5. Guardrail shall be lapped in the direction of adjacent traffic.

⬢ - Indicates AASHTO, AGC & ARTBA Task Force 13 Report designation

◪ 72" Timber Post



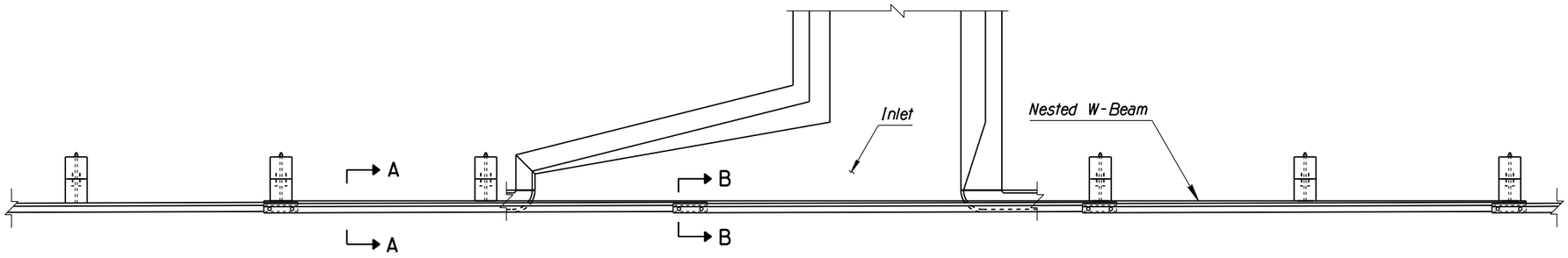
SECTION A-A



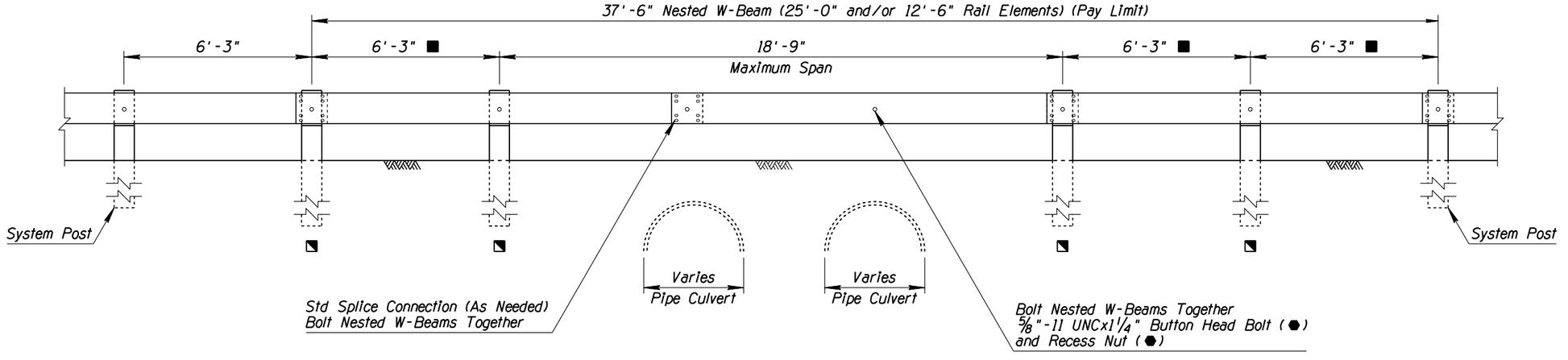
SECTION B-B

APPROVED FOR DESIGN Mary Vipaina	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION ROADWAY STANDARD DRAWINGS	REV. 11/09
APPROVED FOR DISTRIBUTION	W-BEAM GUARDRAIL NESTED TYPES 1 AND 2	DRAWING NO. C-10.06 Sheet 1 of 2

NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	REVISED TITLE, SPLICE NOTES & GENERAL NOTES	RLF	11/09
2			
3			
4			



PLAN



ELEVATION

TYPE 3 (18'-9" SPAN)

GENERAL NOTES

1. *Use Type 3 Nested W-Beam to span downdrain or spillway inlets as shown in the plan view.*
2. *Use Type 3 Nested W-Beam to span multiple obstructions as shown in the elevation view.*
3. *For Type 3, a maximum of two posts may be eliminated within a span of nested guardrail.*
4. *Minimum length of nested guardrail is one 6'-3" post spacing on each side of maximum span.*
5. *Guardrail shall be lapped in the direction of adjacent traffic.*

⬢ - *Indicates AASHTO, AGC & ARTBA Task Force 13 Report designation*

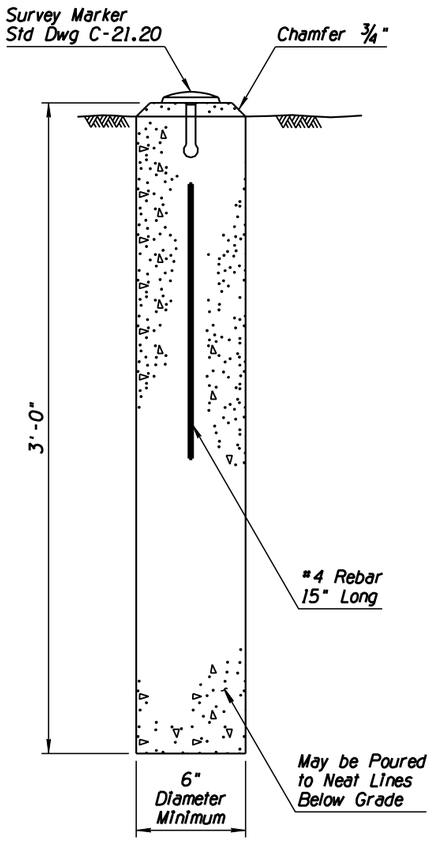
◥ *72" Timber Post*

See Sheet 1 of 2 for Sections A-A and B-B

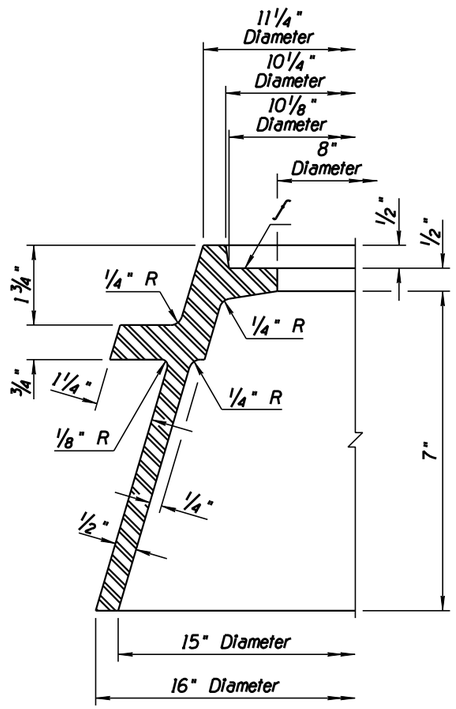
■ *Nesting requires one 6'-3" post spacing on one end of the span and two 6'-3" post spacings on the other end of the span for standard length guardrail elements. The one or two post spacings may be reversed to accomodate field conditions.*

APPROVED FOR DESIGN	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION ROADWAY STANDARD DRAWINGS	REV.
Mary Vipaina		11/09
APPROVED FOR DISTRIBUTION	W-BEAM GUARDRAIL NESTED TYPE 3	DRAWING NO. C-10.06 (1) Sheet 2 of 2

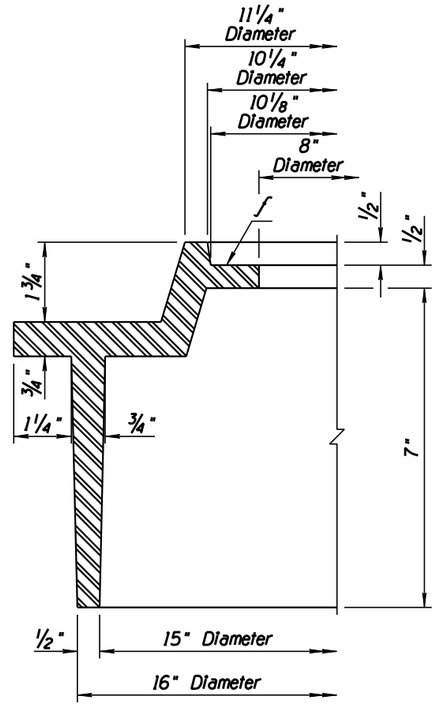
NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	REMOVED RIGHT-OF-WAY MARKER DETAILS	RLF	11/07
2	ADDED VIEW TITLE	RLF	11/07
3	ADDED (Typ) AND PATTERNING	RLF	11/07
4			



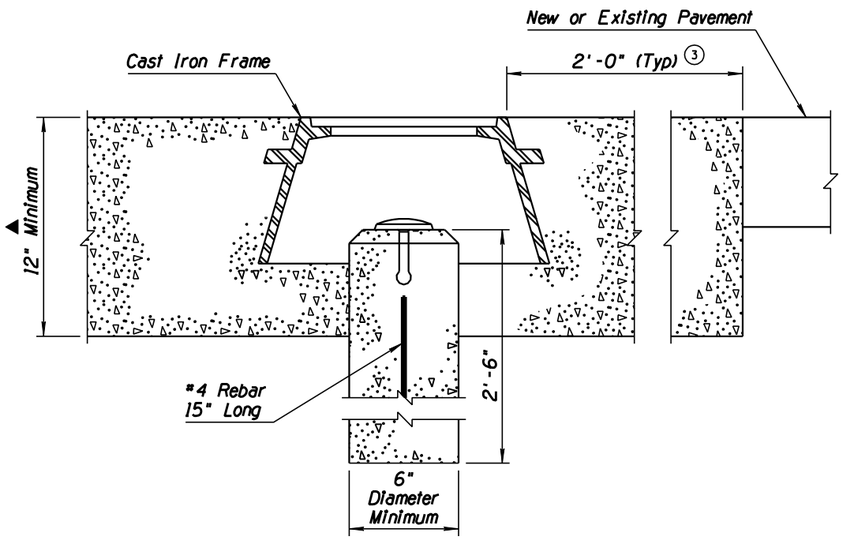
SURVEY MONUMENT



FRAME TYPE A



FRAME TYPE B

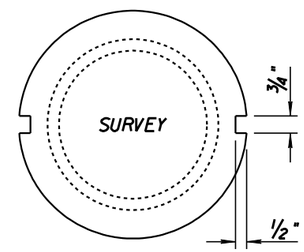


SURVEY MONUMENT
FRAME AND COVER

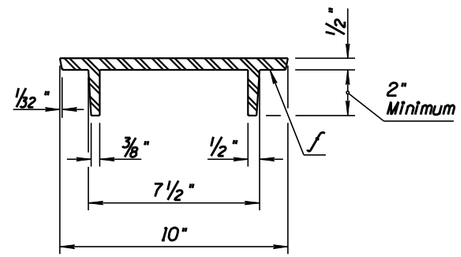
GENERAL NOTES

1. A survey monument and frame & cover, complete-in-place, shall be considered a unit.
2. All markers shall be placed as shown on the plans or as directed by the Engineer.
3. Frames may be either Type A or Type B.
4. Frames shall weigh at least 53 pounds.
5. Covers shall weigh at least 16 pounds.
6. Machined portions of the frame and cover are shown by the symbol " f ". The allowable tolerance for machined areas is ±1/64". Concrete shall conform to Std Spec 922.
7. Survey monuments shall be magnetically detectable.
8. For R/W monumentation, see ADOT R/W Plans Section Right-of-Way Monumentation Procedures and Standards.

▲ 12" or pavement structure thickness, whichever is greater.



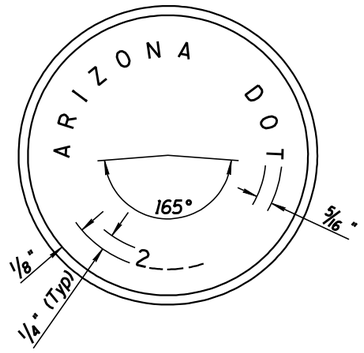
② COVER PLAN



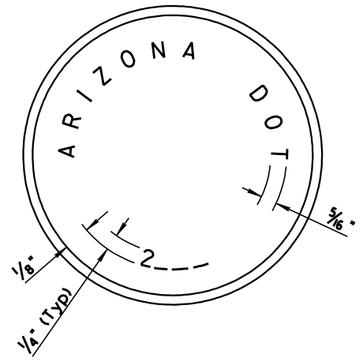
COVER SECTION

APPROVED FOR DESIGN Ray Vizzini	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION ROADWAY STANDARD DRAWINGS	REV. 11/07
APPROVED FOR DISTRIBUTION	SURVEY MONUMENT FRAME AND COVER ①	DRAWING NO. C-21.10

NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	REMOVED RIGHT-OF-WAY MARKER DETAILS	RLF	11/07
2	REVISED GENERAL NOTE REFERENCE	RLF	11/07
3			
4			



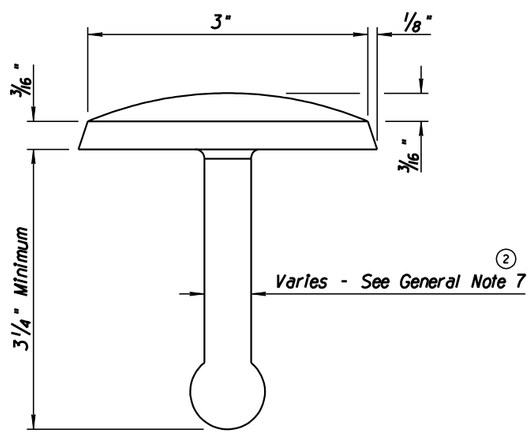
SURVEY MARKER (BENCH)



SURVEY MARKER

GENERAL NOTES

1. *Survey marker may be used with survey monument, and as bench or survey control marker.*
2. *Survey marker shall be made of brass and will be furnished by the Department. Cast-in lettering format may vary.*
3. *When used to define section lines, the marker shall be stamped in accordance with the BLM "Manual of Surveying Instructions" including the land surveyor's registration number.*
4. *For R/W marker information, refer to current ADOT R/W Plans Section R/W Monumentation Procedures and Standards.*
5. *Bench marks shall be established on headwalls, bridge walls and other permanent structures as directed by the Engineer.*
6. *Bench mark station, elevation, year, and/or other information shall be hand stamped in field, as approved by the Engineer.*
7. *Shank cross-sectional area shall be a minimum of 0.31 square inches and a maximum of 0.60 square inches. Shank cross-section may vary and is not a critical feature of this standard.*
8. *Shank geometry shall provide for secure anchorage in concrete.*
9. *Text shall not obscure survey point.*



SURVEY MARKER

APPROVED FOR DESIGN	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION ROADWAY STANDARD DRAWINGS	REV. 11/07
APPROVED FOR DISTRIBUTION	SURVEY MARKER (1)	DRAWING NO. C-21.20