

DESIGN NOTES:

Specifications:
AASHTO LRFD Bridge Design Specifications,
4th Edition with California Amendments.

Earth load:
Earth pressures for two conditions:
140 pcf Vert, 42 pcf Horiz
140 pcf Vert, 140 pcf Horiz

Unit stresses:
 $f'_c = 5.0 \text{ ksi}$
 $f_y = 65.0 \text{ ksi}$ for weld wire fabric
 $n = 7$

Shear:
Based on
 $V_c = (2.14\sqrt{f'_c} + 4600 \frac{A_s V_u d_e}{D d_o M_u}) b_w d_e \leq 4.0\sqrt{f'_c} b_w d_e$ (Pounds)
 V_c shall not be less than $3.00\sqrt{f'_c} b_w d_e$
for frame members and $2.5\sqrt{f'_c} b_w d_e$
for simply supported members.

Exclusion:
Axial loading on the members has
not been considered.

GENERAL NOTES:

Designation:
Standard single or multiple precast box culverts are shown on the plans
as span times height with maximum cover over roof thus: 8' x 5' RCB
with 10'-0" or double 10' x 5' RCB with 20'-0", followed by alternatives.

Alternatives:
Single cell:
Standard dimensions of AASHTO Material Specification 'M259' or 'M273'.
Multiple cell:
Constructed by placing single cells adjacent to each other. Inlet
and outlet ends of culvert will be rounded unless square ends are
designated. Parapet will be shown unless designated in plans. Such
designation may be different for inlet and outlet ends.

Limitations:
Where the overfill is less than 12", Precast RCB culverts are
not to be used. Precast RCB culverts are not to be used in siphon
or pressurized installations unless appropriate "watertight"
jointing is provided.

Special reinforcement coverage:
Precast RCB culvert standard plans are not to be used in a
corrosive environment or where there is a severe abrasive flow
condition or freeze-thaw locations.

Special design:
Required for culvert with different conditions, loads or design bearing
pressures greater than those given on these plans. Required
for culverts where end details need higher skew angles,
higher parapets or barrier sections.

CONSTRUCTION NOTES:

Cutoff walls:
4'-0" Cutoff walls are to be provided at inlet and/or
outlet unless channel is lined and unless otherwise
shown. These walls are to be extended if scour
conditions warrant. See Standard Plans D84,
D85 and D86A.

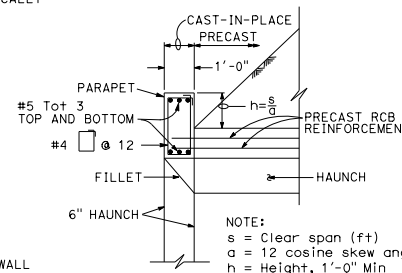
Wingwalls:
Wingwalls shall be cast-in-place and shall conform to
standard plan details for box culvert wingwalls. See
Standard Plans D84, D85 and D86A.

Earthwork:
See Standard Plan A62G.

Construction loads:
Strutting may be required near temporary ends. For
construction loads on culverts, See Standard Plan D88.

SPAN	PARAPET "P" BARS		
	0° TO 15°	16° TO 30°	31° TO 45°
4'-0"	#5	#5	#5
5'-0"	#5	#5	#6
6'-0"	#6	#6	#6
7'-0"	#7	#7	#7
8'-0"	#7	#7	#8
10'-0"	#8	#8	#9
12'-0"	#9	#9	#10

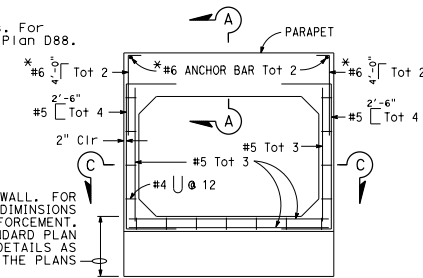
**BARRIER PARAPET
REINFORCEMENT**



SECTION A-A
(Standard Height Parapet)

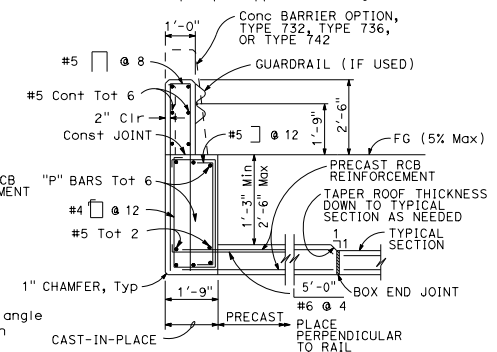
TYPICAL CULVERT END DETAILS

For wall and invert reinforcement not shown, See "End Elevation" detail.

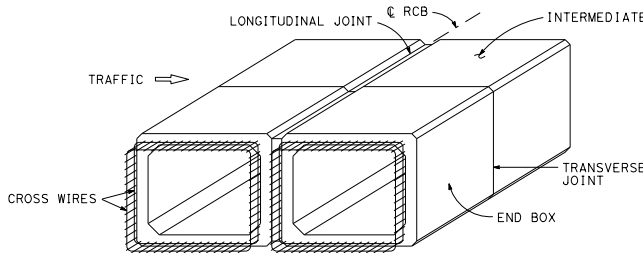


**CAST-IN-PLACE
END ELEVATION**

* Reinforcing required for barrier parapet application only.

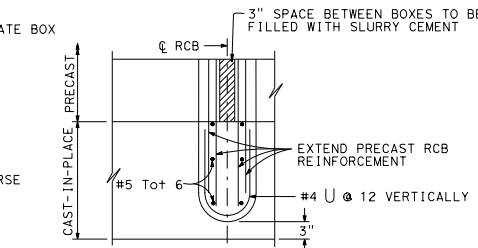


SECTION A-A
(Barrier Parapet)

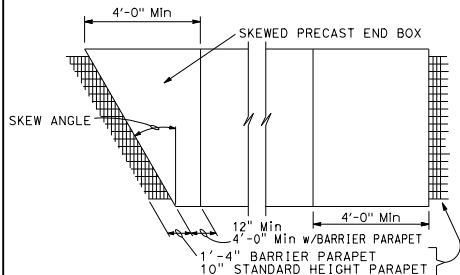


PRECAST RCB TERMINOLOGY

NOTE: Inner and outer reinforcement to be exposed as required to tie to cast-in-place construction. A minimum of two cross wires shall be exposed on all sides.

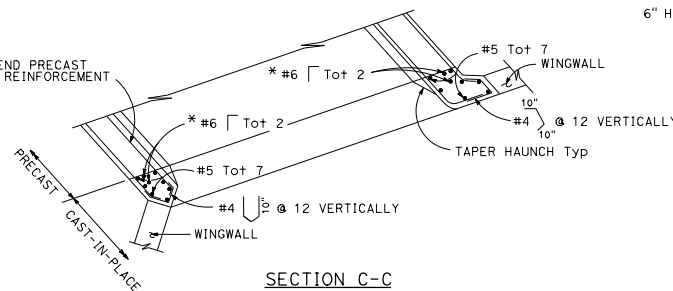


**PARTIAL PLAN INTERIOR WALL
MULTICELL CULVERT**



PARTIAL PLAN VIEW

For illustrative purposes only.
For correct skew direction see plans.



SECTION C-C

* Reinforcing required for barrier parapet application only.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS

REGISTERED CIVIL ENGINEER
July 18, 2014
PLANS APPROVAL DATE
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

TO ACCOMPANY PLANS DATED _____

2010 REVISED STANDARD PLAN RSP D83B

**PRECAST REINFORCED
CONCRETE BOX CULVERT
MISCELLANEOUS DETAILS**

NO SCALE

RSP D83B DATED JULY 18, 2014 SUPERSEDES STANDARD PLAN D83B
DATED MAY 20, 2011 - PAGE 176 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP D83B