

- ① Trowel smooth and place 2 layers of 30 lb. roofing felt to prevent bond.
- ② Cast frame into intake top. See Standard Road Plan RA-66D for frame and grate details.
- ③ 36" maximum concrete pipe.
- ④ If Intake base is precast, it shall be placed on a 6" bed of sand. This bedding shall be compacted and provide uniform support for the entire area of the base and shall extend 12" outside the edge of the base.
- ⑤ Top elevation of grates shall be 1/4" below Form Grade Elevation.
- ⑥ Possible subdrain. See plans for location and elevation. See Standard Road Plan RF-19C for connection details.
- ⑦ Bolt intake frames together on both sides with (4) 1/2" x 4" bolts.
- ⑧ Leave 3" opening through barrier over the intake.
- ⑨ Slope of top shall vary to match elevation of adjacent pavement.
- ⑩ Intake base may be cast in place or precast. If precast, the base and first wall section may be cast separately with a keyway or as one unit.

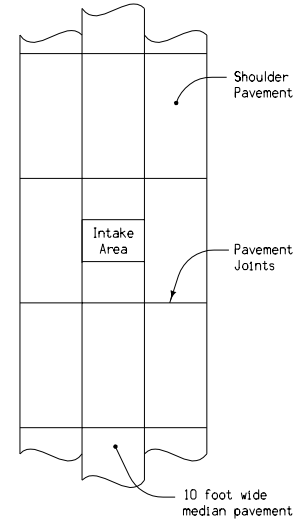
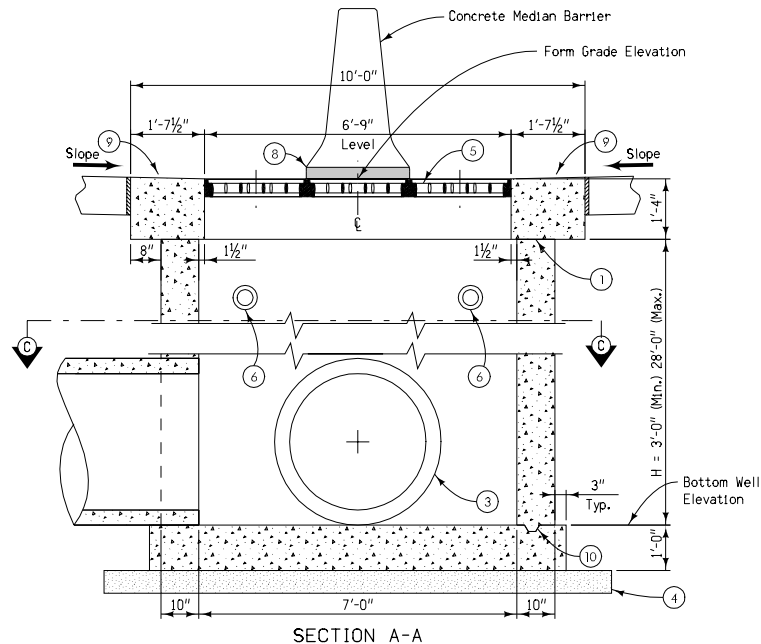
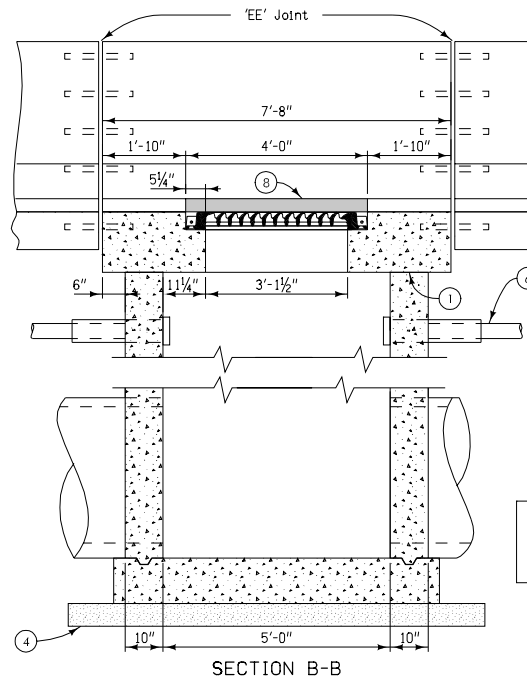
Steps, when specified, shall meet the requirements of ASTM C478. The top step shall be located a maximum of 28" below the form grade elevation.

Contract Items:

Barrier Intake, RA-47A

Tabulation: 104-5B

Remove center grate before constructing concrete barrier.

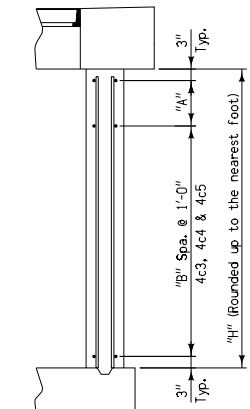


TYPICAL PAVEMENT JOINT LAYOUT DETAIL

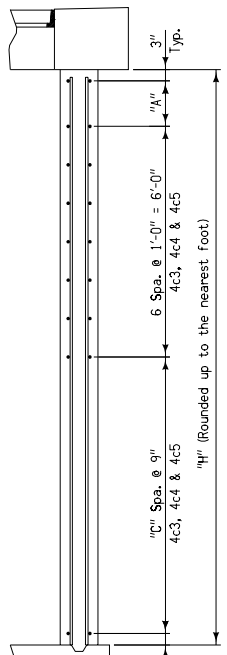
For joint details, see Standard Road Plans RH-50, RH-51, and RH-52.

	REVISION
	NEW 10-17-06
<b>STANDARD ROAD PLAN</b>	<b>RA-47A</b>
REVISIONS: Replaces paren-number standards with one multi-page standard.	SHEET 1 of 4
<i>Deanna Mayfield</i> APPROVED BY DESIGN METHODS ENGINEER	

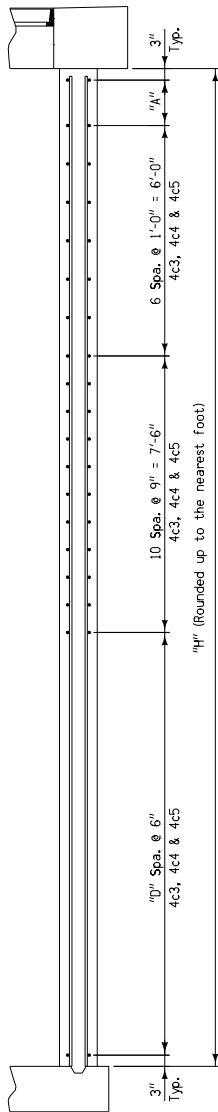
TRIPLE GRATE  
BARRIER INTAKE, RECTANGULAR



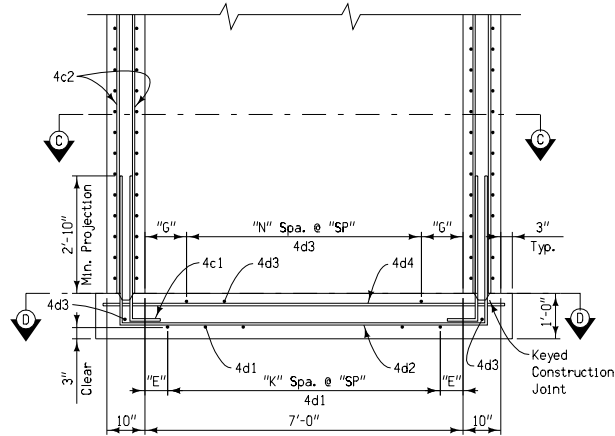
PART SECTION A-A  
(Where H = 3' to 7')



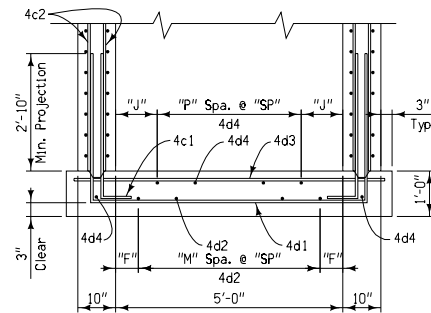
PART SECTION A-A  
(Where H = 8' to 15')



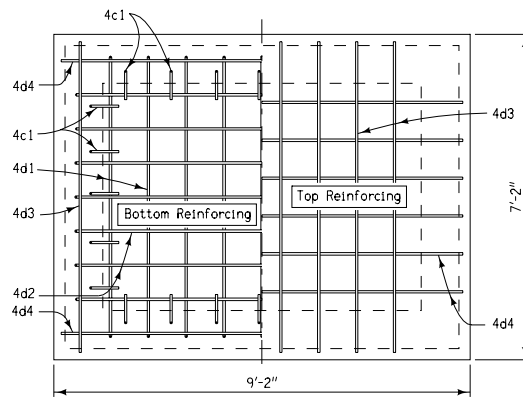
PART SECTION A-A  
(Where H = 16' to 28')



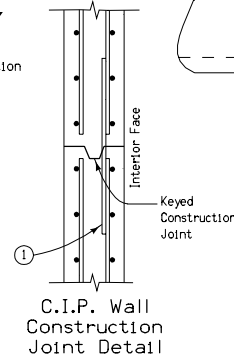
SECTION A-A



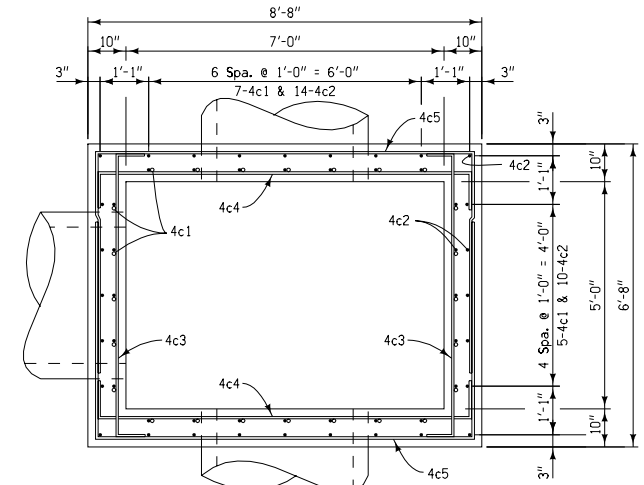
SECTION B-B



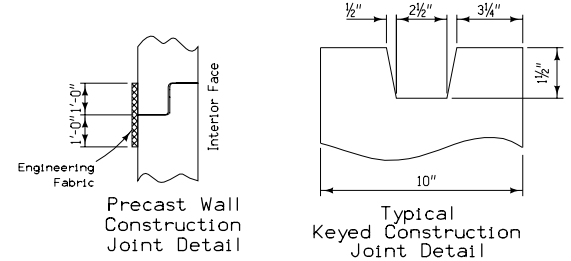
SECTION D-D



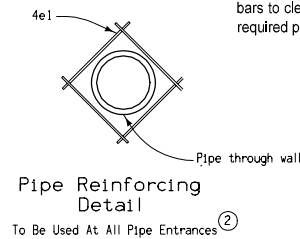
The clear distance from face of concrete to near edge or end of reinforcing bar to be 2" unless otherwise noted.



SECTION C-C

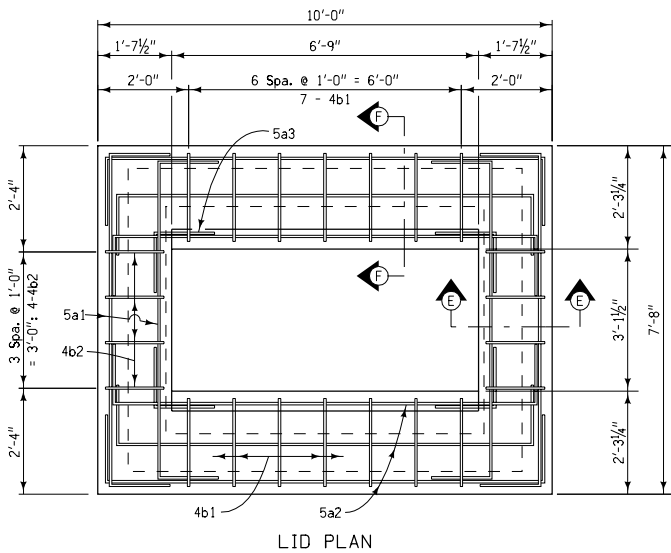


- One set of 4r1 x 3'-0" dowel bars @ 1'-0" spacing required in wall at any wall joints. 24 4r1 bars required per joint, total weight = 48 lbs.
- 4e1 bar length to be pipe diameter plus 12 inches. 4e1 bar to be placed inside of vertical reinforcing. Main reinforcing bars to be shifted as required for pipe entrance. Field cut bars to clear bottom of base 3" clear from bottom and 2" clear from walls. Eight 4e1 bars required per pipe entrance.

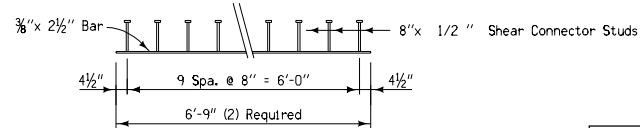


Pipe Reinforcing Detail  
To Be Used At All Pipe Entrances

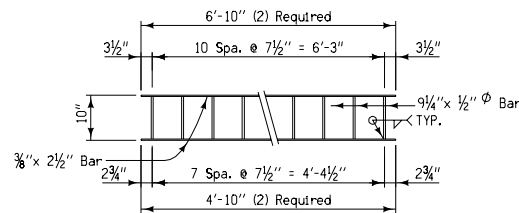
	REVISION
	NEW 10-17-06
<b>STANDARD ROAD PLAN</b>	<b>RA-47A</b>
	SHEET 2 of 4
REVISIONS: Replaces paren-number standards with one multi-page standard. <i>Deanna Maulfeld</i> APPROVED BY DESIGN METHODS ENGINEER	
<b>TRIPLE GRATE BARRIER INTAKE, RECTANGULAR</b>	



LID PLAN



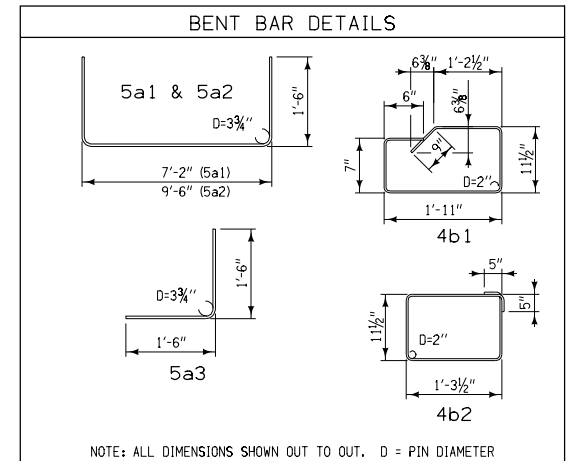
FRAME RING EDGE ARMOR DETAIL



WALL EDGE ARMOR DETAIL

All edge armor steel to be ASTM A36, hot-dip galvanized after fabrication.

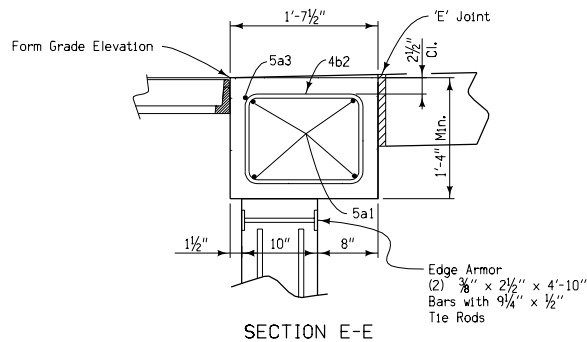
BILL OF REINFORCING STEEL					
THREE GRATE INTAKE LID - EPOXY COATED					
BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
5a1	Lid, Longitudinal		8	10'-2	85
5a2	Lid, Transverse		10	12'-6	130
5a3	Lid, Interior, Corners		4	3'-0	13
4b1	Lid Hoop		14	5'-11	55
4b2	Lid Hoop		8	5'-4	29
EPOXY COATED REINFORCING STEEL - TOTAL					312



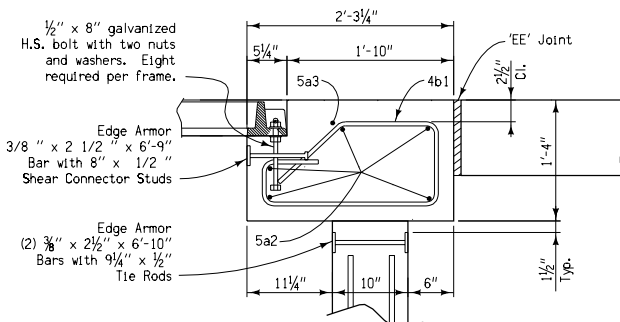
NOTE: ALL DIMENSIONS SHOWN OUT TO OUT. D = PIN DIAMETER

QUANTITY SUMMARY FOR THREE GRATE INTAKE LID

Concrete	2.7	CY
Epoxy Coated Reinforcing Steel	312	LB



SECTION E-E



SECTION F-F

The clear distance from face of concrete to near edge or end of reinforcing bar to be 2" unless otherwise noted.

	REVISION
	NEW 10-17-06
<b>STANDARD ROAD PLAN</b>	<b>RA-47A</b>
REVISIONS: Replaces paren-number standards with one multi-page standard. Changed Headed Anchors to Shear Connector Studs.	SHEET 3 of 4
<i>Deanna Muffitt</i> APPROVED BY DESIGN METHODS ENGINEER	

TRIPLE GRATE  
BARRIER INTAKE, RECTANGULAR

