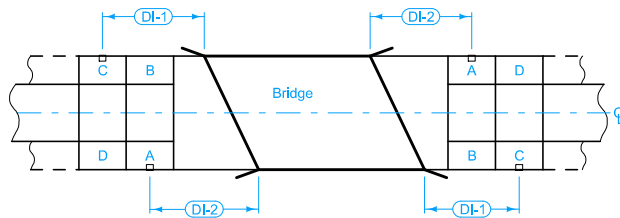
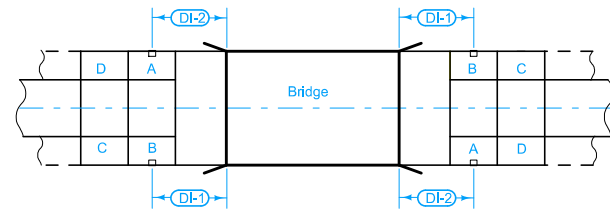
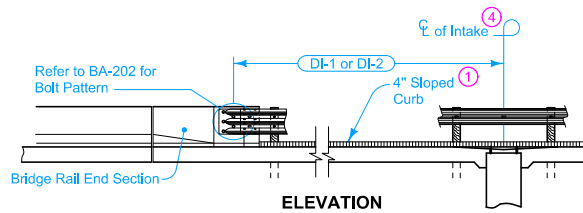
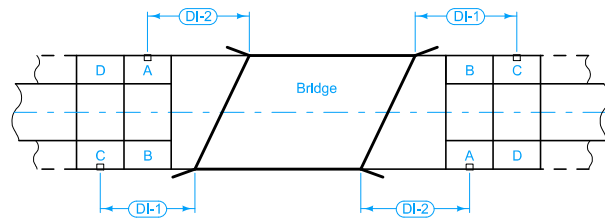


Price bid for "Intake for Bridge End Drain, SW-538" is full compensation for furnishing, installing, and constructing the Bridge End Drain as shown.

- ① Refer to BR-201, BR-202, BR-203, or BR-204 for details of 4 inch sloped curb.
- ② Continue 4 inch Sloped Curb 5 feet beyond centerline of intake, then transition to no curb as shown on PV-102.
- ③ Install modified subbase and polymer grid under P.C.C. shoulder panels. See Section A-A (BR-201, BR-202, BR-203, or BR-204) or Section C-C (BR-231).
- ④ DI-1 and DI-2 distances measured from center of bolt hole pattern. Locate center of intake 6 feet or more from the nearest transverse pavement joint and between guardrail posts to allow for storm sewer outlet. Joints are determined by the bridge approach section.



PCC SHOULDER PANEL LOCATIONS  
(Skewed Bridge)



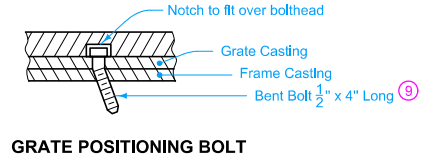
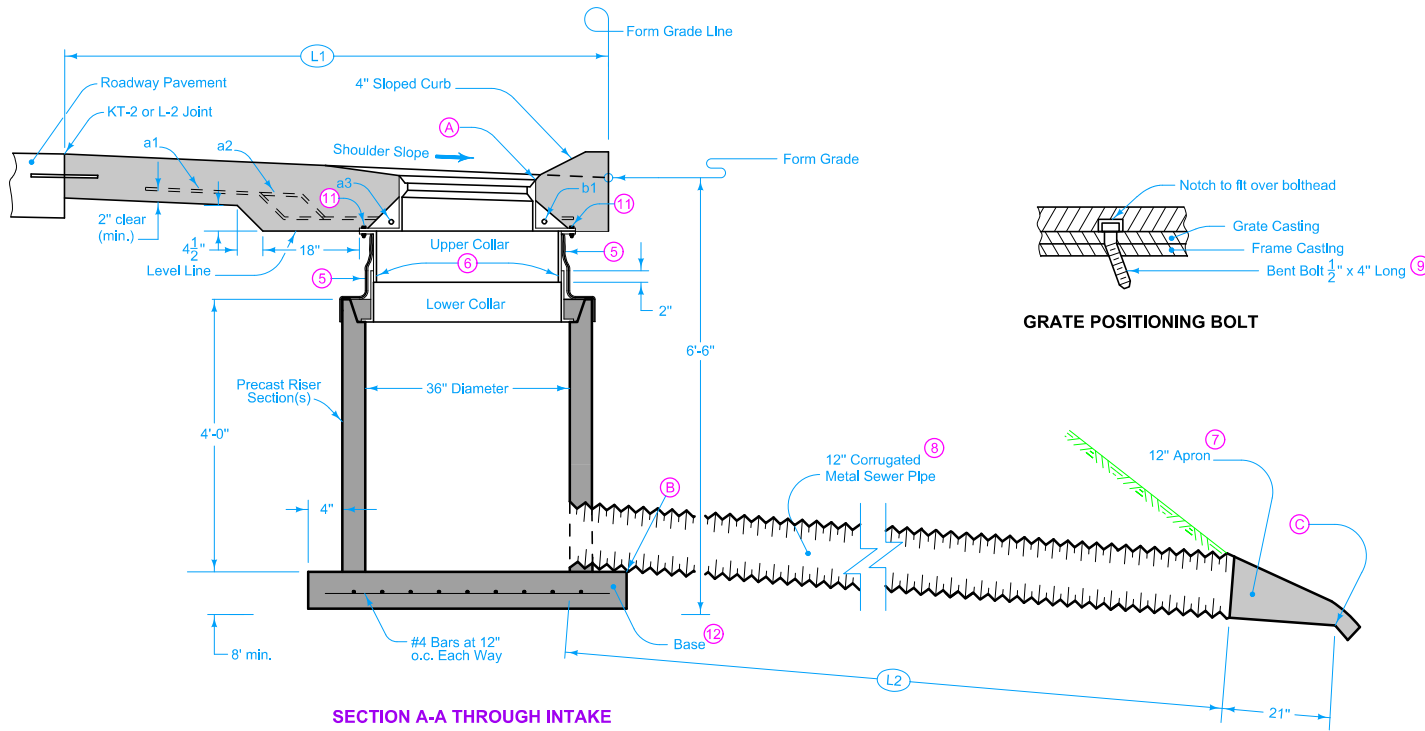
- Possible Contract Items:  
 Intake for Bridge End Drain, SW-538  
 Paved Shoulder, Portland Cement Concrete (Paved Shoulder Panel for Bridge-End Drain)
- Incidental to Paved Shoulder:  
 Modified Subbase  
 Polymer Grid
- Possible Tabulation:  
 104-8

<b>IOWA DOT</b>	REVISION
	2   04-17-18
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STANDARD ROAD PLAN	SHEET 1 of 5

REVISIONS: Added a 3rd view on page 1 to show panel locations for non-skewed bridges. Added Designer Info button.

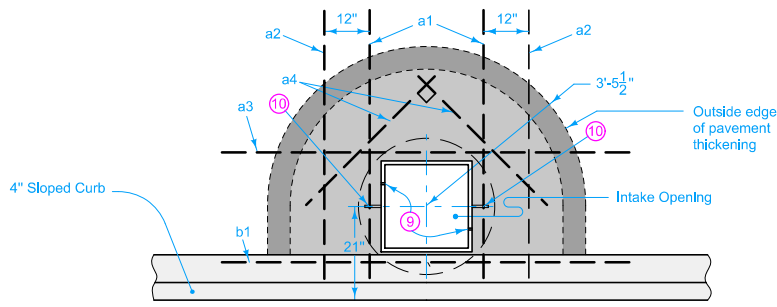
APPROVED BY DESIGN METHODS ENGINEER  
*Brian Smith*

INTAKE FOR BRIDGE END DRAIN

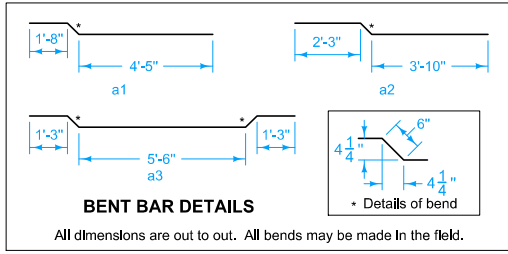


**SECTION A-A THROUGH INTAKE**

**GRATE POSITIONING BOLT**



**REINFORCING LAYOUT**



REINFORCING BAR LIST						
MARK	SIZE	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
a1 (10)	4	Shoulder		2	6'-7"	9
a2	4	Shoulder		2	6'-7"	9
a3 (10)	4	Shoulder		1	9'-0"	6
a4	4	Shoulder		2	4'-0"	5
b1 (10)	4	Curb		1	8'-9"	6
Total						35 lbs.

Construct precast base using 4 in. x 4 in. No. 6 steel wire mesh reinforcing or equivalent.

To ensure water-tight joints, use an approved asphaltic sealer for all corrugated metal pipe joints constructed using connecting bands.

Flow line (A) elevation is 0.10 feet below Form Grade Elevation.

Flow line (B) elevation is 5.75 feet below flow line (A).

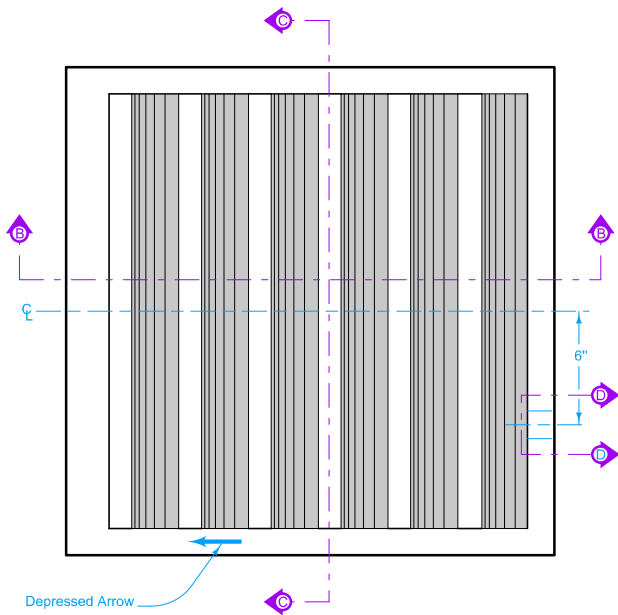
Flow line (C) elevation is 0 - 0.5 feet above ditch grade.

Refer to project plans for actual flow line elevations of (A), (B), (C), and dimensions L1 and L2.

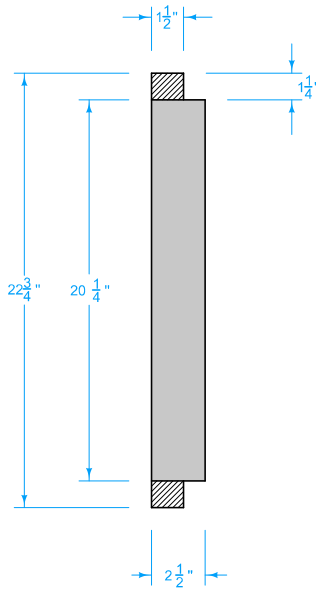
- (5) Before backfilling around the intake assembly, wrap two thicknesses of engineering fabric around the settlement collar. Tape all the way around with 2 inch duct tape immediately below the flange of upper section and 4 inches below the top of well pipe.
- (6) Fasten Slip joint temporarily with four 1/2 inch cap screws during pavement construction. Remove cap screws after pavement is hardened.
- (7) Refer to DR-203. Apron is incidental to Intake for Bridge End Drain and will not be paid for separately.
- (8) Connect to basin according to Section 2435 of the Standard Specifications. Corrugated Metal Sewer Pipe is incidental to Intake for Bridge End Drain and will not be paid for separately.
- (9) Field place 1/2 in. x 4 in. long bolt in upstream side and bend underside to prevent removal.
- (10) Place bars a1, a3, and b1 through the appropriate holes in the intake frame.
- (11) Fasten frame casting to Upper Collar casting at four locations using 1/2 in. x 2 in. long hex bolts and 1/2 inch nuts.
- (12) Cast-in-place base shown. Base may be square. If base is precast integral with walls, the footprint of the base is not required to extend beyond the outer edge of the walls.

 <b>STANDARD ROAD PLAN</b>	REVISION 2   04-17-18
	<b>SW-538</b>
	SHEET 2 of 5
REVISIONS: Added a 3rd view on page 1 to show panel locations for non-skewed bridges. Added Designer info button.	
 APPROVED BY DESIGN METHODS ENGINEER	
<b>INTAKE FOR BRIDGE END DRAIN</b>	

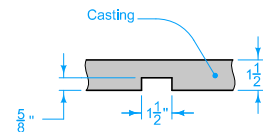
Minimum Weight = 90 lbs.



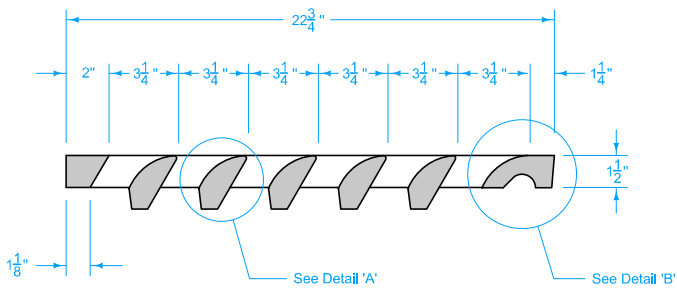
PLAN



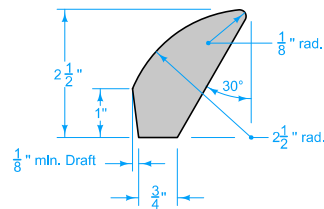
SECTION C-C



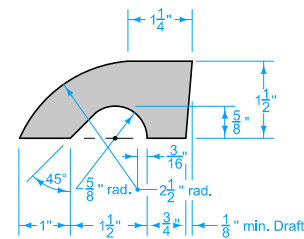
SECTION D-D



SECTION B-B



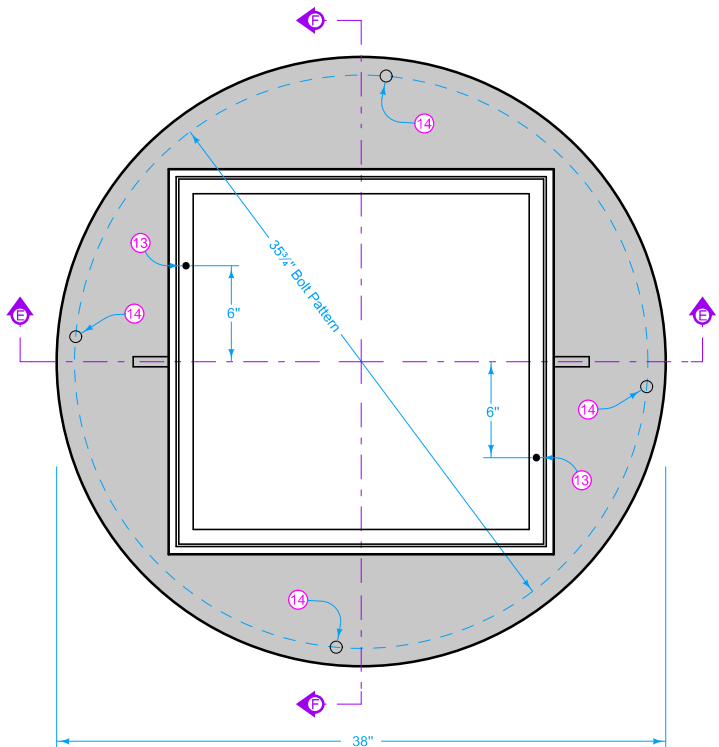
DETAIL 'A'



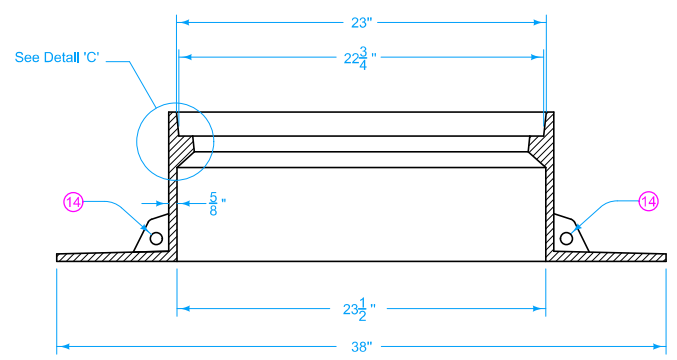
DETAIL 'B'

GRATE

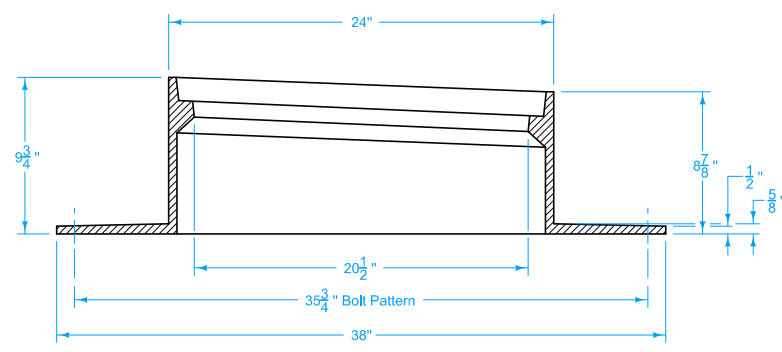
	REVISION
	2   04-17-18
	<b>STANDARD ROAD PLAN</b>
<b>SW-538</b>	
SHEET 3 of 5	
<small>REVISIONS: Added a 3rd view on page 1 to show panel locations for non-skewed bridges. Added Designer Info button.</small>	
APPROVED BY DESIGN METHODS ENGINEER	
<b>INTAKE FOR BRIDGE END DRAIN</b>	



PLAN

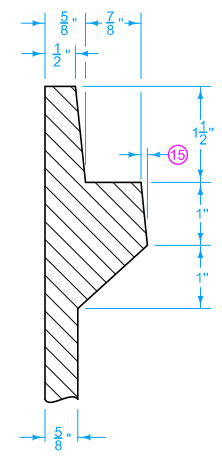


SECTION E-E



SECTION F-F

FRAME

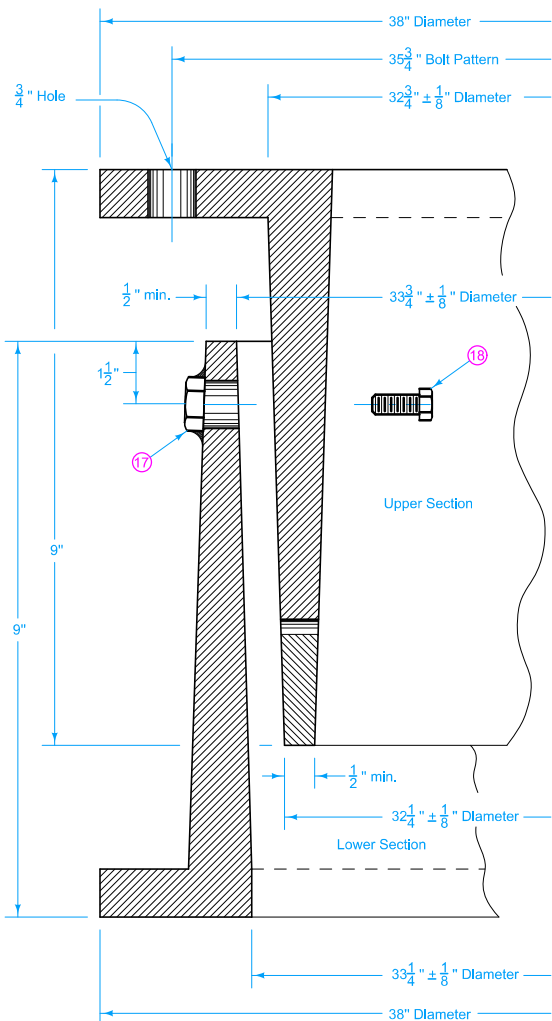


DETAIL 'C'

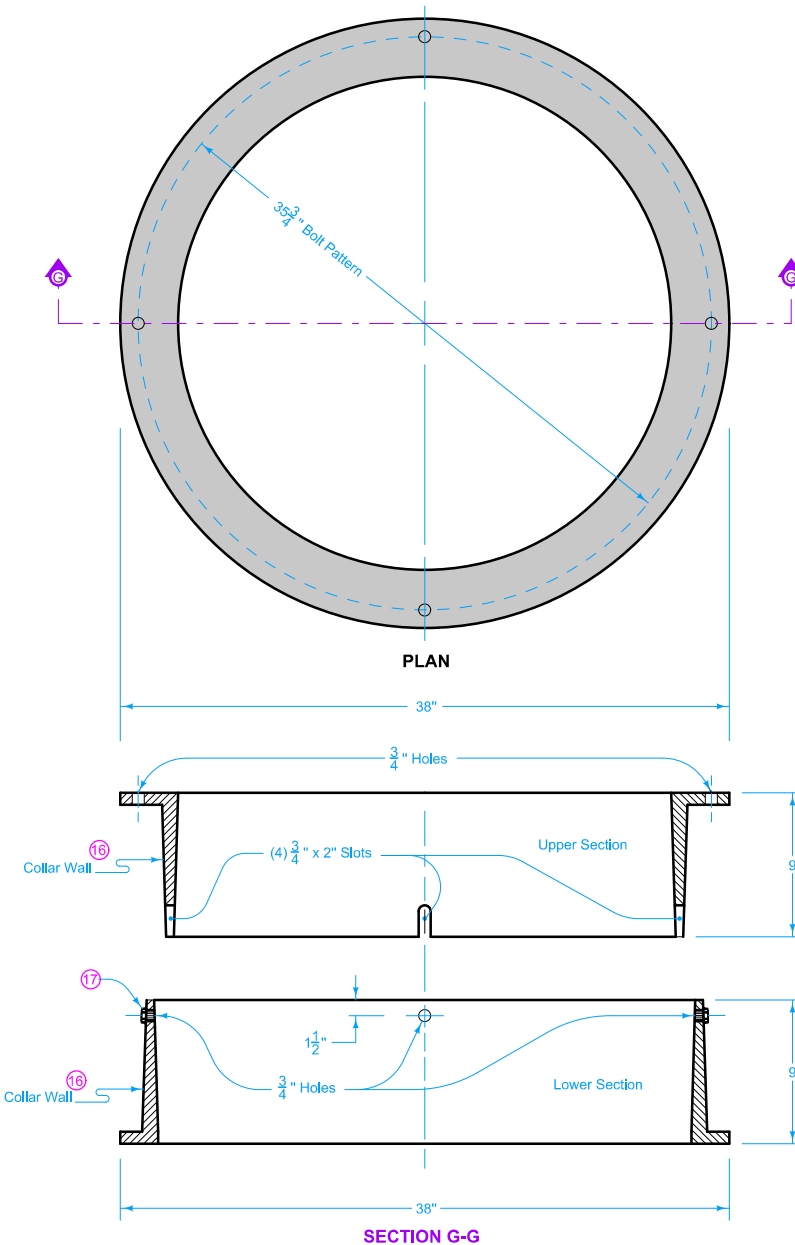
Minimum Weight = 163 lbs.

- 13 Provide  $\frac{9}{16}$  inch diameter holes at locations indicated.
- 14  $\frac{3}{4}$  inch holes. Drill or core if not already existing.
- 15 DRAFT (Small Casting Taper) will be permitted.

 <b>STANDARD ROAD PLAN</b>	REVISION 2   04-17-18
	<b>SW-538</b> SHEET 4 of 5
	REVISIONS: Added a 3rd view on page 1 to show panel locations for non-skewed bridges. Added Designer Info button.
 APPROVED BY DESIGN METHODS ENGINEER	
<b>INTAKE FOR BRIDGE END DRAIN</b>	



SETTLEMENT COLLAR



- 16 Wall thickness may vary uniformly from base to the top or bottom of the casting.
- 17 Tack weld four  $\frac{1}{2}$  inch nuts to outside of bottom settlement collar or drill and tap four holes for  $\frac{1}{2}$  inch Cap Screws in bottom settlement collar.
- 18 Remove the four  $\frac{1}{2}$  inch Cap Screws after surrounding concrete has set.

MINIMUM WEIGHT	
Upper Section	210 lbs.
Lower Section	210 lbs.

 <b>STANDARD ROAD PLAN</b>	REVISION
	2   04-17-18
	<b>SW-538</b>
SHEET 5 of 5	
<small>REVISIONS: Added a 3rd view on page 1 to show panel locations for non-skewed bridges. Added Designer Info button.</small>	

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**INTAKE FOR BRIDGE END DRAIN**