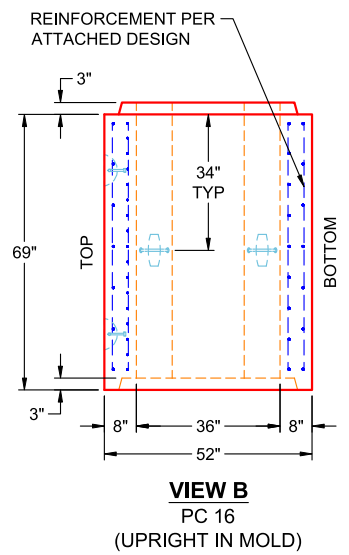
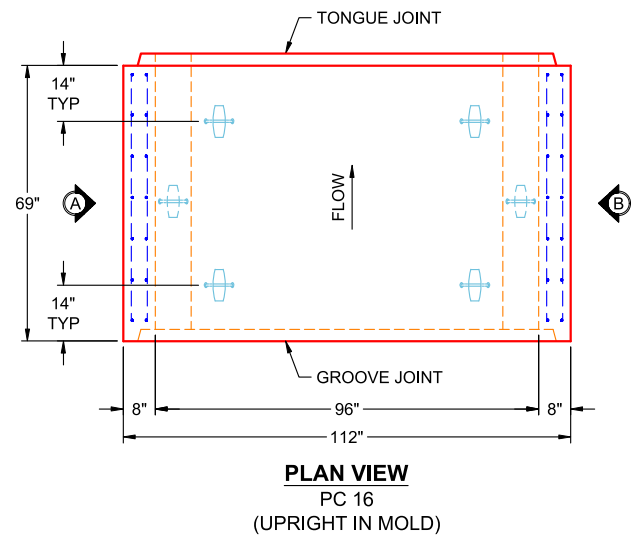
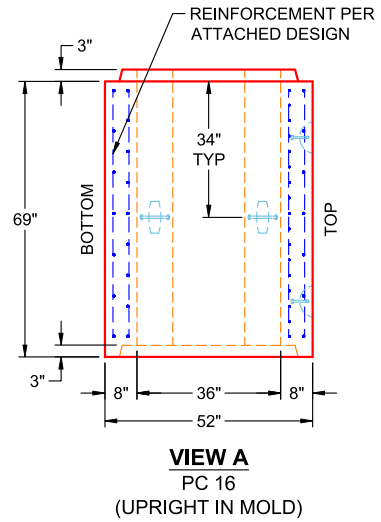
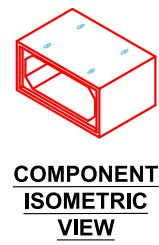
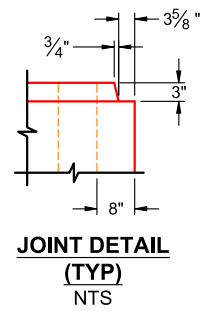
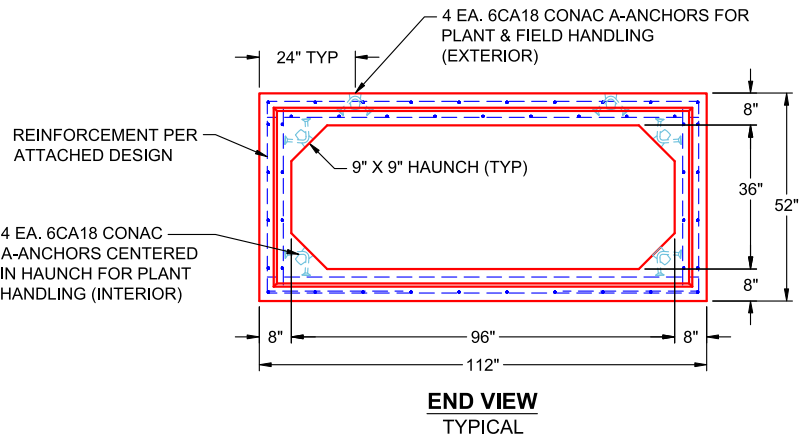



Structure ID: BC 8 x 3 (PC 16)
P1 BC096036-08WLF-9H

BOX CULVERT (08W/08F/08T) G/T

- GENERAL NOTES:**
1. MANUFACTURED TO ASTM C-1577 & SECTION 714 OF INDOT STANDARD SPECIFICATIONS FOR REINFORCED CONCRETE BOX STRUCTURES
 2. LOAD REQUIREMENTS: HL93
 3. REINFORCEMENT PER ATTACHED DESIGN
 4. COVER DEPTH: 0'-5"
 5. CONCRETE: 5,000 PSI AT 28 DAYS
 6. JOINT SEALANT: 1" BUTYL MASTIC (CS-102)
EXTERIOR JOINT WRAP: 12" WIDE (CS-212)
 7. WEIGHT: 8' X 3' RCBC = 2,548 LBS / LF
(5'-9" LONG SECTION = 14,649 LBS)



PRODUCTION WORK ORDER		PRODUCT I.D.: BC096036-08WLF-9H	DESCRIPTION: 96" X 36" X 69" BOX CULVERT (8" WALLS & 9" HAUNCH)
	QUALITY CONTROL CHECKLIST	PRODUCT VIEW: RIGHT SIDE UP	CUSTOMER: BOWEN ENGINEERING CORPORATION
	<input type="checkbox"/> ALL DIMENSIONS CORRECT.	PLANT: BEAVER DAM, KY	PROJECT: ALCOA OUTFALL
	<input type="checkbox"/> LIFTERS INSTALLED INSIDE.	WEIGHT: 14,649 LBS	STRUCTURE: BC 8 X 3 (PC 16)
	<input type="checkbox"/> RECESS WITH HAUNCHES CORRECT.	TOP SECTION JOINT: TONGUE	ORDER NO: 25-2073
	<input type="checkbox"/> REINFORCING CORRECT.	BASE SECTION JOINT: GROOVE	PE: J.H. ROSS
	<input type="checkbox"/> SURFACE QUALITY ACCEPTABLE.	QC CHECK INITIALS:	DRAWING: K. CARDWELL
	<input type="checkbox"/> LIFTERS INSTALLED OUTSIDE.		DATE: 04/17/26
<input type="checkbox"/> PRODUCT SQUARE.		SCALE: NTS	
			PG. 1 OF 1

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p. 1 of 4

Project : Alcoa Outfall

Task :

Client: Bowen Engineering

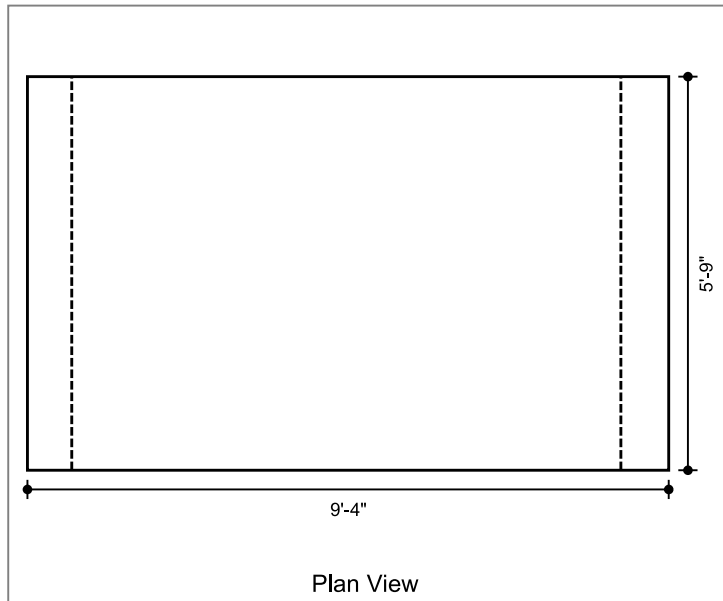
Job No. : 25-2073

File: 8x3 BC Four Sided - 25-2073 Alcoa Outfall.etcx

Spec.: LRFD 9th ed.
Type of Culvert: Precast

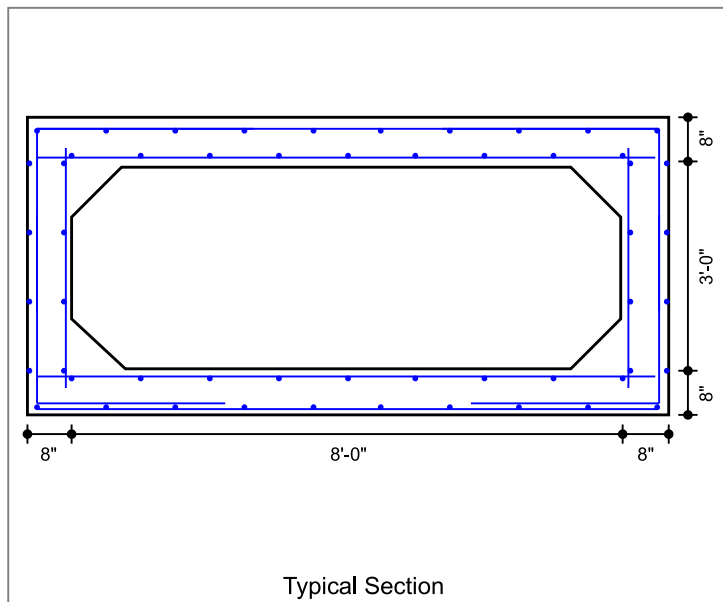
Physical Dimensions

Clear Span:	8'-0"
Clear Height:	3'-0"
Top Slab:	8"
Bottom Slab:	8"
Ext. Wall:	8"
Fill Depth Range	
Maximum:	5.00 ft
Minimum:	2.00 ft
Increment:	1.00 ft
Length:	5'-9"
Skew Angle:	0.00 deg
Bottom Slab Support:	Full Slab
Top Haunch, Width:	9"
Top Haunch, Height:	9"
Bottom Haunch, Width:	9"
Bottom Haunch, Height:	9"



Material Properties

Concrete	
Strength, f _c :	5.000 ksi
Density:	0.150 kcf
Elasticity, E _c :	3834 ksi
Type:	Normal wt
Steel	
Yield, f _y :	60 ksi
Allow Stress:	36 ksi
Elasticity, E _s :	29000 ksi
Soil	
Density:	0.120 kcf
Exposure Factor	Class 2 Exposure
Reinforcement Covers	
Ext. Cover Top Slab:	2"
Ext. Cover Bottom Slab:	1"
Ext. Cover Walls:	1 1/2"
Int. Cover Walls:	1"
Int. Cover Top Slab:	1"
Int. Cover Bottom Slab:	1"



Controlling Ratings

Inventory Rating: 1.14
Operating Rating: 1.48

Loads

Live Load	
Vehicle Names:	HL-93
Traffic Direction:	Parallel
Eq. Height of Soil:	Calculated
Dead Load	
Future Wearing Surface:	0.000 klf
Additional Dead Load:	0.000 klf
Concentrated Loads:	none

Lateral Soil Loads	
Eq. Fluid Press. Max:	60.00 pcf
Eq. Fluid Press. Min:	30.00 pcf

Interior Water Pressure: yes, head pressure = 0 ft
Exterior Water Pressure: no

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Project : Alcoa Outfall

Task :

Client: Bowen Engineering

Job No. : 25-2073

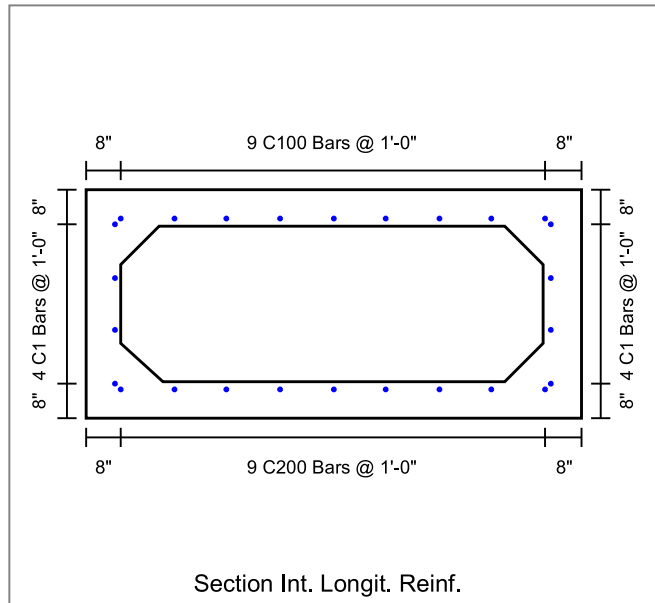
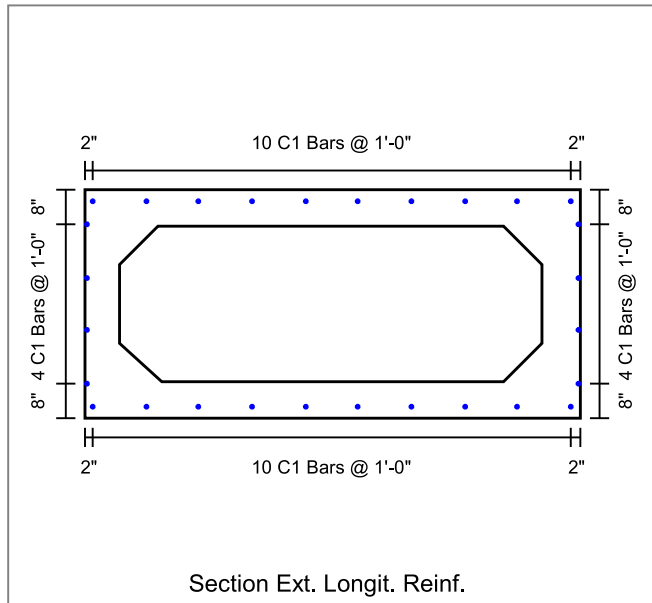
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Concrete Summary

Volume of Concrete: 0.651 cy/ft Total Volume of Concrete: 3.742 cy

Reinforcing Steel Bar Schedule (lb)

Location	Mark	Qty	Size	Spacing	Type	Length	Hor.Leg	Ver.Leg	Tot.Weight
Top Slab(Int)	A100 (AS2)	18	3	4"	S	9'-0"	--	--	61.0
Bot Slab(Int)	A200 (AS3)	9	4	8"	S	9'-0"	--	--	54.0
Top Slab(Ext)	A300 (AS7)	6	4	1'-0"	S	9'-0"	--	--	36.0
Bot Slab(Ext)	A400 (AS8)	6	4	1'-0"	S	9'-0"	--	--	36.0
Corner(Top)	A1 (AS1)	24	4	6"	L	5'-10"	3'-2"	2'-8"	94.0
Corner(Bot)	A2 (AS1)	24	4	6"	L	5'-6"	2'-9"	2'-9"	88.0
Wall(Int)	B1 (AS4)	12	4	1'-0"	S	3'-6"	--	--	28.0
Longit. Top (Int)	C100 (AS5)	9	4	1'-0"	S	5'-8"	--	--	34.0
Longit. Bot (Int)	C200	9	4	1'-0"	S	5'-8"	--	--	34.0
Longit. Top (Ext)	C1 (AS6)	10	4	1'-0"	S	5'-8"	--	--	37.9
Longit. Bot (Ext)	C1 (AS6)	10	4	1'-0"	S	5'-8"	--	--	37.9
Longit. Wall (Ext)	C1 (AS6)	8	4	1'-0"	S	5'-8"	--	--	30.4
Longit. Wall (Int)	C1 (AS6)	8	4	1'-0"	S	5'-8"	--	--	30.4
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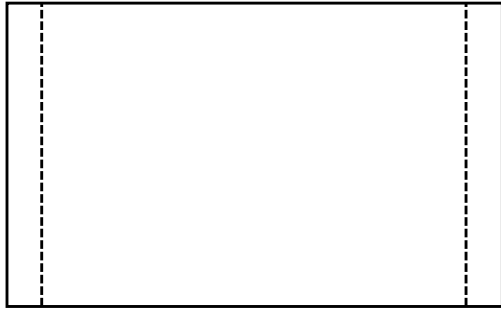
Project : Alcoa Outfall

Task :

Job No. : 25-2073

Client: Bowen Engineering

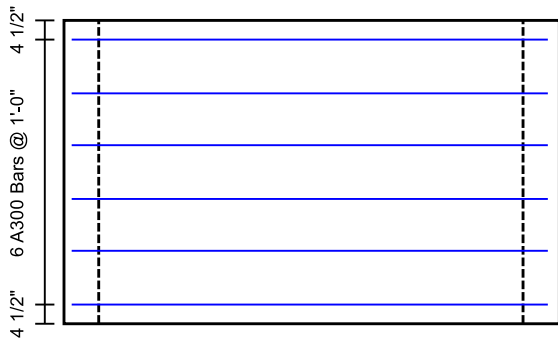
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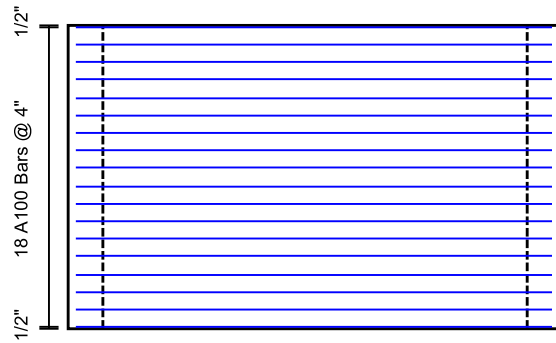
Ext. Wall Reinf.



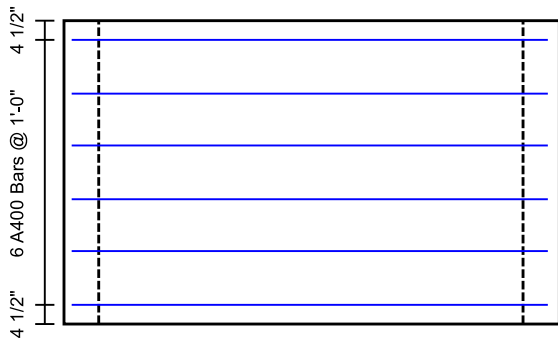
Int. Wall Reinf.



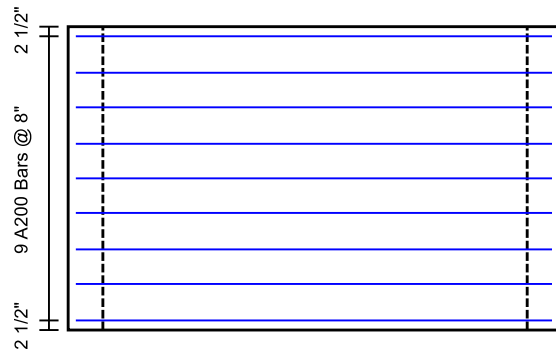
Top Slab Ext. Reinf.



Top Slab Int. Reinf.



Bottom Slab Ext. Reinf.



Bottom Slab Int. Reinf.

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Project : Alcoa Outfall

Task :

Client: Bowen Engineering

Job No. : 25-2073

File: 8x3 BC Four Sided - 25-2073 Alcoa Outfall.etcx

