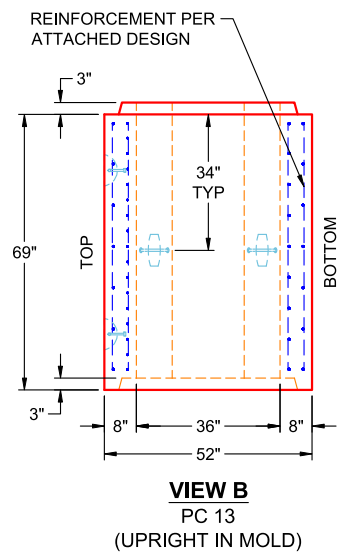
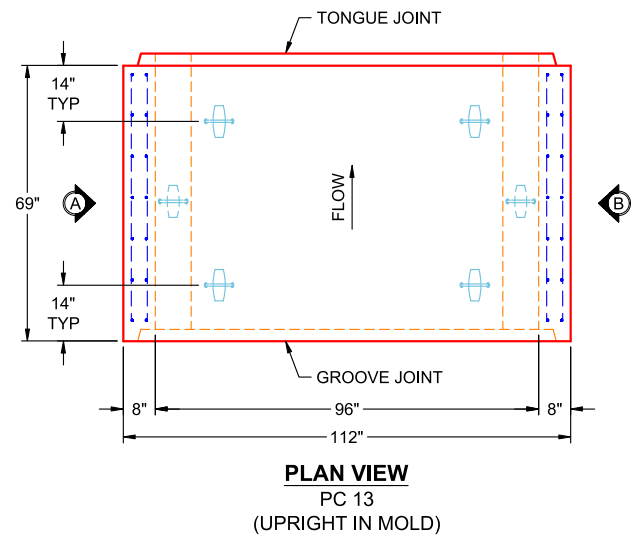
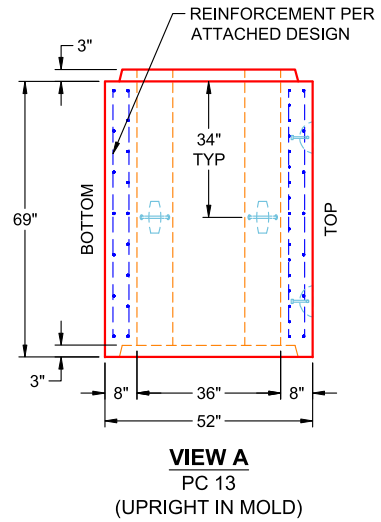
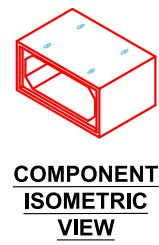
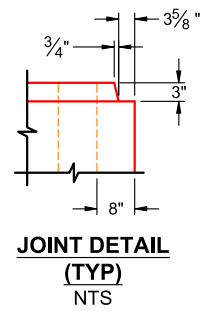
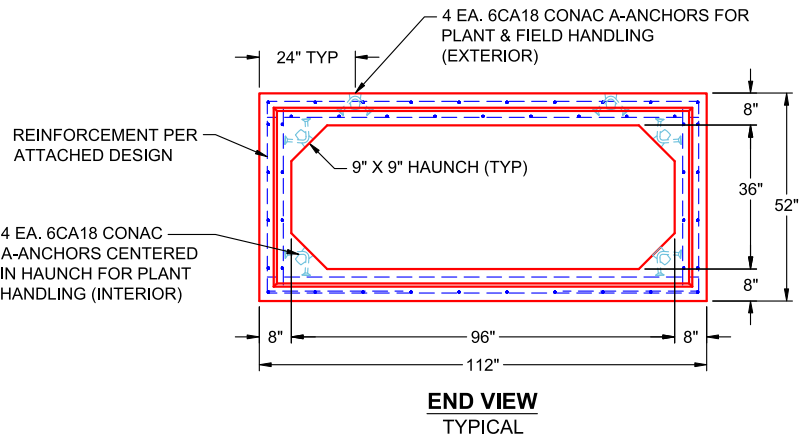



**Structure ID: BC 8 x 3 (PC 13)**  
**P1 BC096036-08WLF-9H**

**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 13)
	<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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# INFRASTRUCTURE PRECAST (ICAST)

Sht \_\_\_\_\_ of \_\_\_\_\_

By: J. Horsley

Ck: \_\_\_\_\_

4/17/2026 8:47:34 AM

p. 1 of 4

Project : Alcoa Outfall

Task :

Client: Bowen Engineering

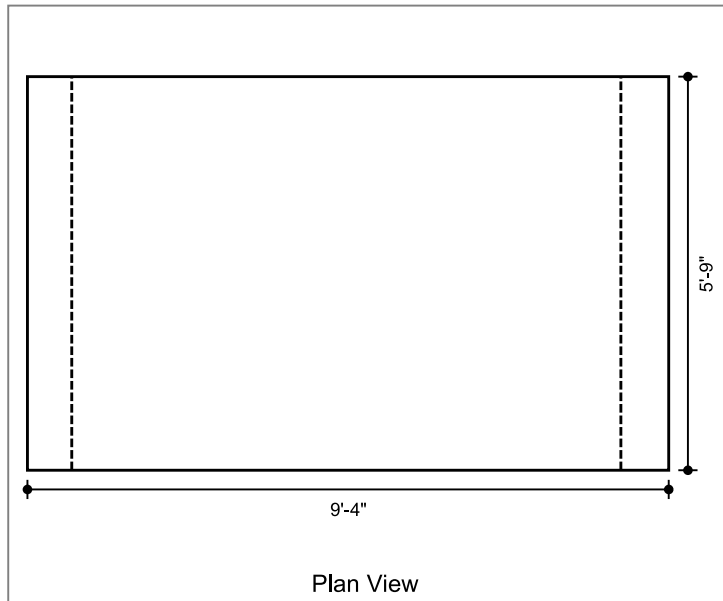
Job No. : 25-2073

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

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

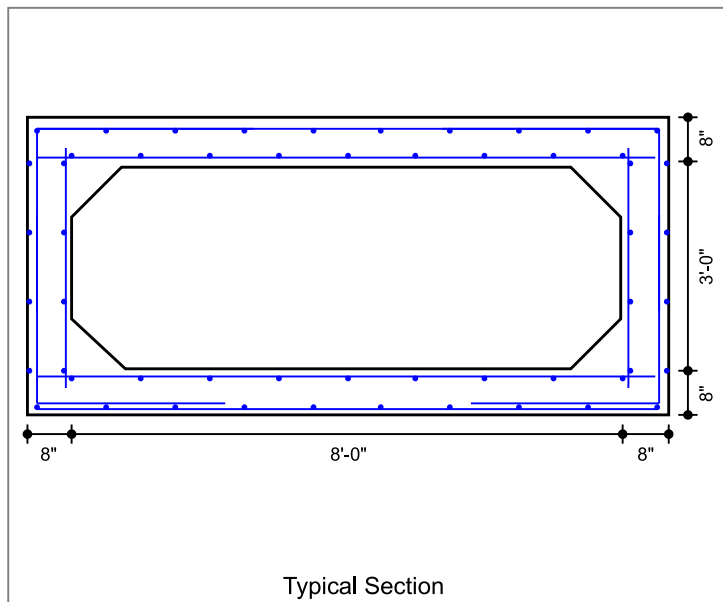
## Physical Dimensions

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

<b>Concrete</b>	
Strength, f <sub>c</sub> :	5.000 ksi
Density:	0.150 kcf
Elasticity, E <sub>c</sub> :	3834 ksi
Type:	Normal wt
<b>Steel</b>	
Yield, f <sub>y</sub> :	60 ksi
Allow Stress:	36 ksi
Elasticity, E <sub>s</sub> :	29000 ksi
<b>Soil</b>	
Density:	0.120 kcf
Exposure Factor	Class 2 Exposure
<b>Reinforcement Covers</b>	
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

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

<b>Lateral Soil Loads</b>	
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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Ck: \_\_\_\_\_

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Project : Alcoa Outfall

Task :

Client: Bowen Engineering

Job No. : 25-2073

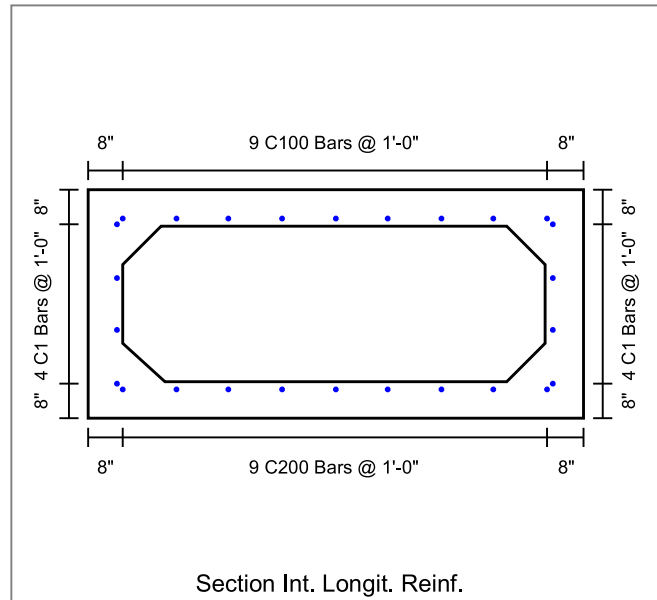
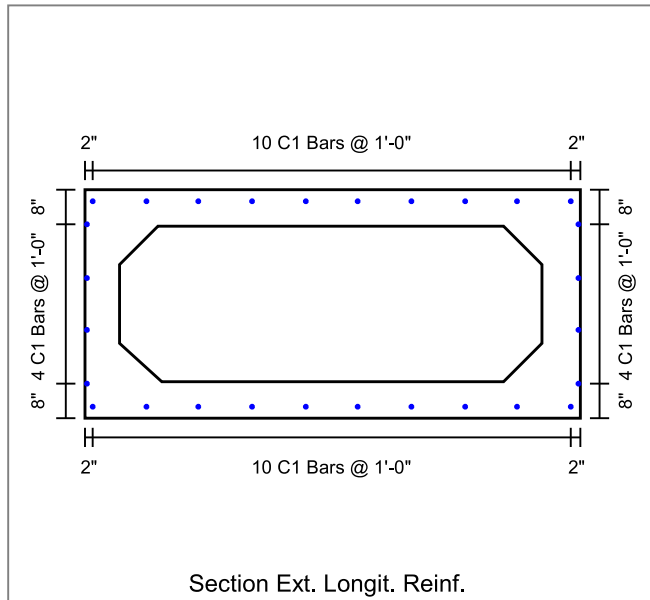
File: 8x3 BC Four Sided - 25-2073 Alcoa Outfall.etcx

## 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
									602



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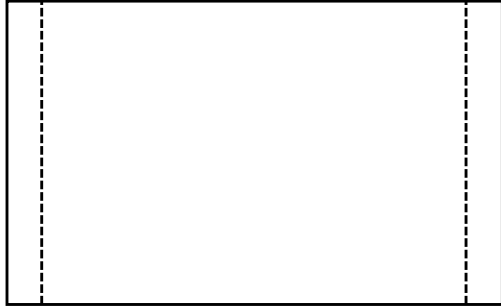
Project : Alcoa Outfall

Task :

Job No. : 25-2073

Client: Bowen Engineering

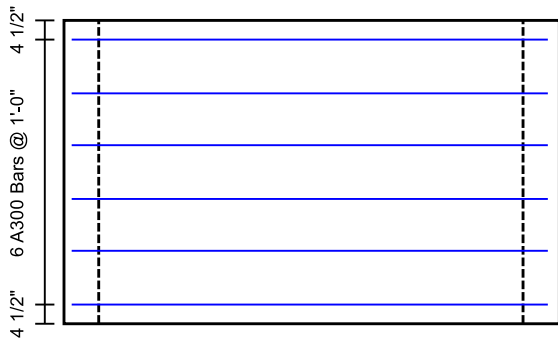
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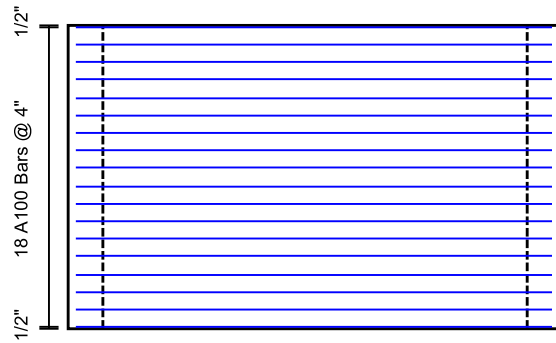
Ext. Wall Reinf.



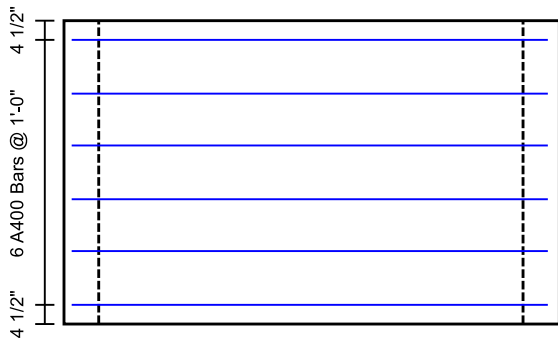
Int. Wall Reinf.



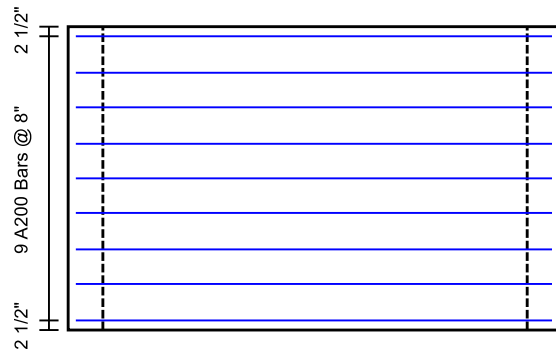
Top Slab Ext. Reinf.



Top Slab Int. Reinf.



Bottom Slab Ext. Reinf.



Bottom Slab Int. Reinf.

# INFRASTRUCTURE PRECAST (ICAST)

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Project : Alcoa Outfall

Task :

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