

Job Name: 25-2073 - Alcoa Outfall
Job Location: Newburgh, IN
Contractor: Bowen Engineering Corporation

Plant: 100
7/11/2026 9:06:20 AM

Tech: J. Horsley
PC: A. Chambers



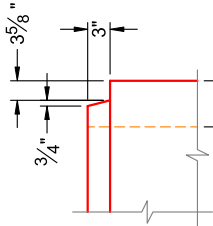
Structure ID: BC 4 x 2 (PC 11)

P1 BC0480024-08WLF

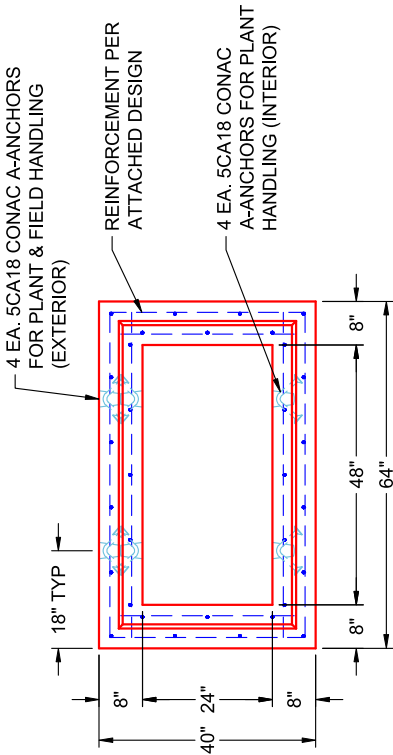
BOX CULVERT (08W/08F/08T) No Haunch & Tongue



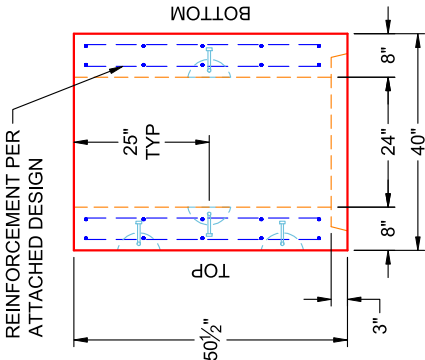
COMPONENT
ISOMETRIC VIEW



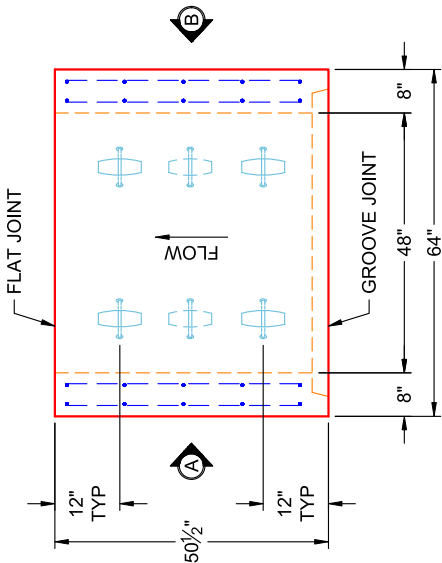
JOINT DETAIL
(TYP)
NTS



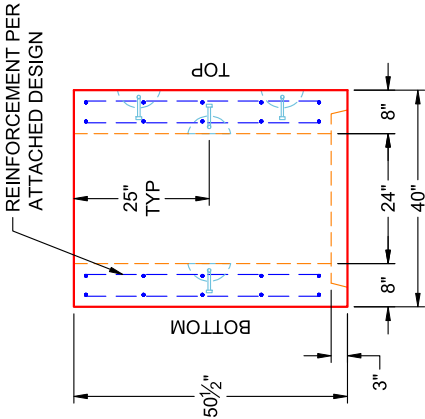
END VIEW
TYPICAL



VIEW B
PC 11
(UPRIGHT IN MOLD)



PLAN VIEW
PC 11
(UPRIGHT IN MOLD)



VIEW A
PC 11
(UPRIGHT IN MOLD)

- GENERAL NOTES:**
- MANUFACTURED TO ASTM C-1577 & SECTION 714 OF INDOT STANDARD SPECIFICATIONS FOR REINFORCED CONCRETE BOX STRUCTURES
 - LOAD REQUIREMENTS: HL93
 - REINFORCEMENT PER ATTACHED DESIGN
 - COVER DEPTH: 4'-8"
 - CONCRETE: 5,000 PSI AT 28 DAYS
 - JOINT SEALANT: 1" BUTYL MASTIC (CS-102) EXTERIOR JOINT WRAP: 12" WIDE (CS-212)
 - WEIGHT: 4' X 2' (48" X 24") RCBC = 1,418 LBS / LF (50 1/2" LONG SECTION = 5,967 LBS)

INFRASTRUCTURE PRECAST (ICAST)

Project : Alcoa Outfall

Task :

Job No. : 25-2073

Client: Bowen Engineering Co

File: 4x2 BC Four Sided (no haunch) - 25-2073 Alcoa Outfall

Sht _____ of _____

By: J. Horsley

Ck: _____

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

Physical Dimensions

Clear Span: 4'-0"
Clear Height: 2'-0"
Top Slab: 8"
Bottom Slab: 8"
Ext. Wall: 8"
Fill Depth Range
Maximum: 7.99 ft
Minimum: 4.00 ft
Increment: 0.50 ft
Length: 5'-9"
Skew Angle: 0.00 deg
Bottom Slab Support: Full Slab
Top Haunch, Width: 0"
Top Haunch, Height: 0"
Bottom Haunch, Width: 0"
Bottom Haunch, Height: 0"

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"
Int. Cover Walls: 1"
Int. Cover Top Slab: 1"
Int. Cover Bottom Slab: 1"

Controlling Ratings

Inventory Rating: NaN
Operating Rating: NaN

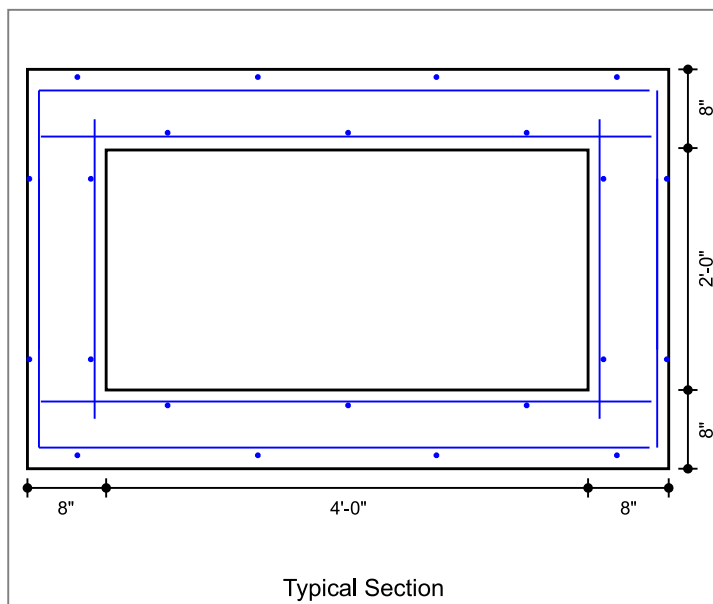
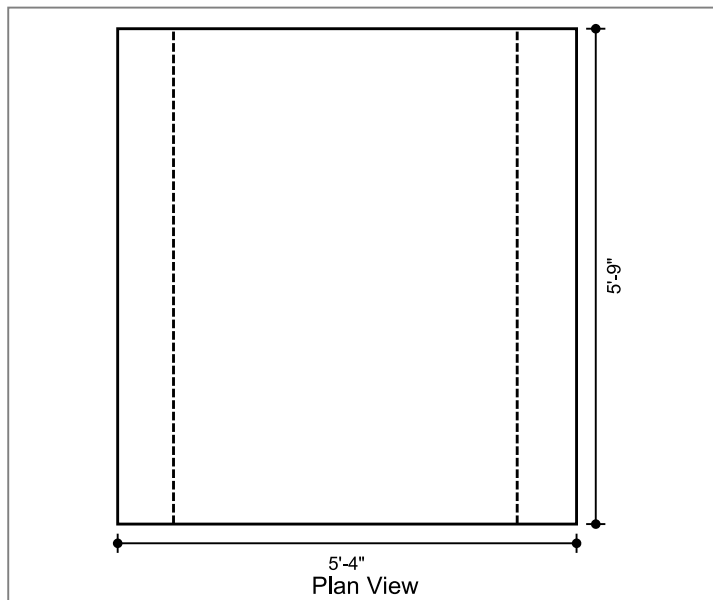
Loads

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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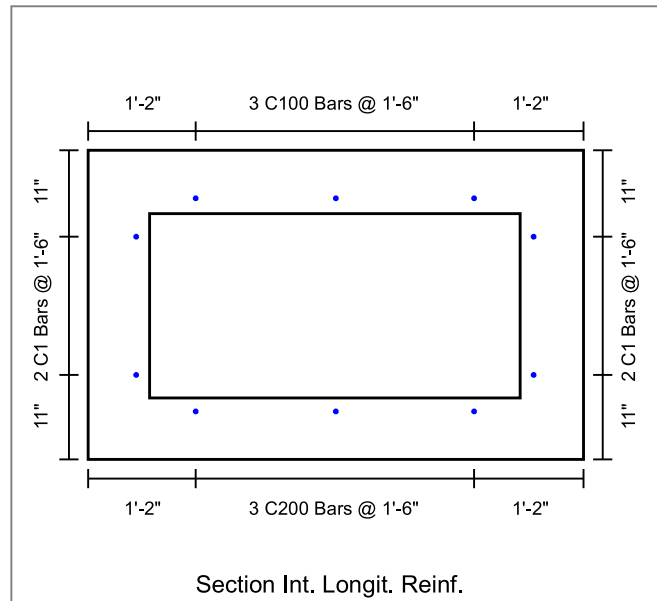
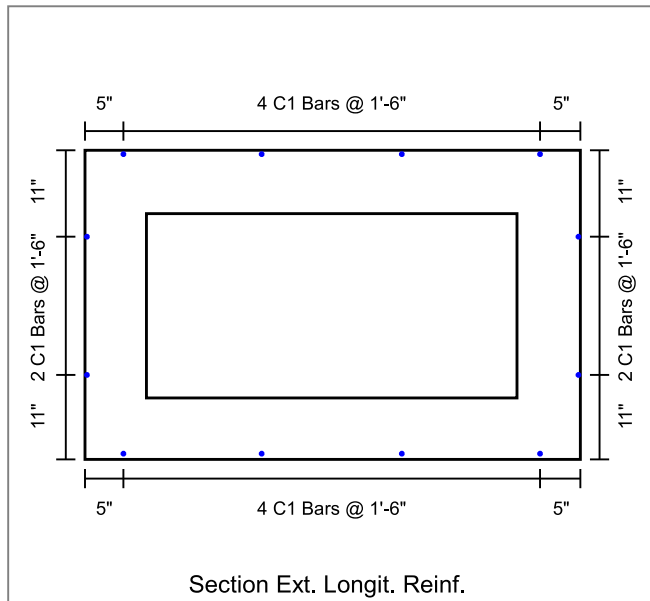
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Concrete Summary

Volume of Concrete: 0.362 cy/ft Total Volume of Concrete: 2.082 cy

Reinforcing Steel Bar Schedule (lb)

Location	Mark	Qty	Size	Spacing	Type	Length	Center	Ver. Leg	Tot. Weight
Top Slab(Int)	A100 (AS2)	6	4	1'-0"	S	5'-1"	--	--	20.0
Bot Slab(Int)	A200 (AS3)	6	4	1'-0"	S	5'-1"	--	--	20.0
Corner(Top)	A1 (AS1)	6	4	1'-0"	U	9'-5"	5'-1"	2'-2"	38.0
Corner(Bot)	A2 (AS1)	6	4	1'-0"	U	9'-7"	5'-1"	2'-3"	38.0
Wall(Int)	B1 (AS4)	12	4	1'-0"	S	2'-6"	--	--	20.0
Longit. Top (Int)	C100 (AS5)	3	3	1'-6"	S	5'-8"	--	--	6.0
Longit. Bot (Int)	C200	3	3	1'-6"	S	5'-8"	--	--	6.0
Longit. Top (Ext)	C1 (AS6)	4	3	1'-6"	S	5'-8"	--	--	8.6
Longit. Bot (Ext)	C1 (AS6)	4	3	1'-6"	S	5'-8"	--	--	8.6
Longit. Wall (Ext)	C1 (AS6)	4	3	1'-6"	S	5'-8"	--	--	8.6
Longit. Wall (Int)	C1 (AS6)	4	3	1'-6"	S	5'-8"	--	--	8.6
									182

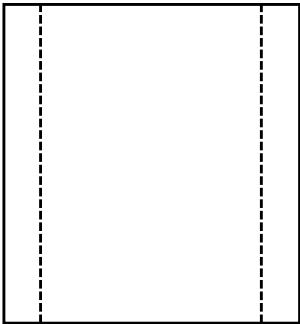


INFRASTRUCTURE PRECAST (ICAST)

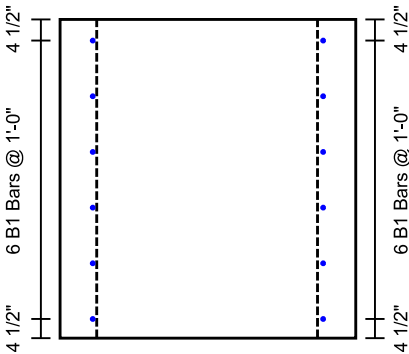
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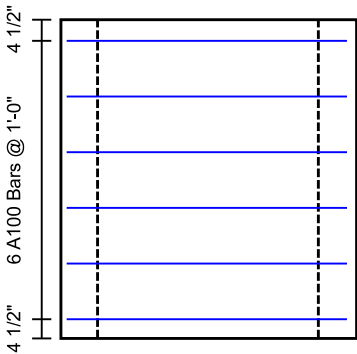
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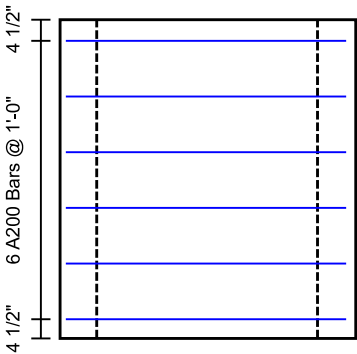
Ext. Wall Reinf.



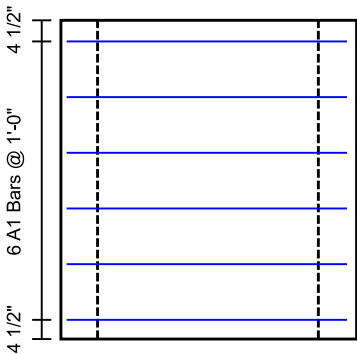
Int. Wall Reinf.



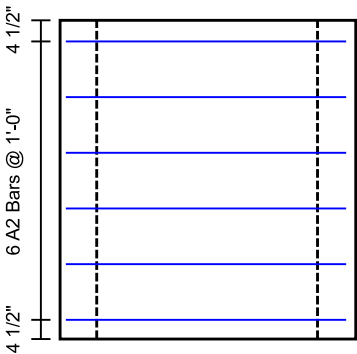
Top Slab Int. Reinf.



Bottom Slab Int. Reinf.



Top Slab Corner Reinf.



Bottom Slab Corner Reinf.