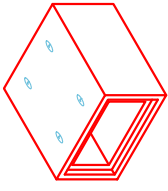




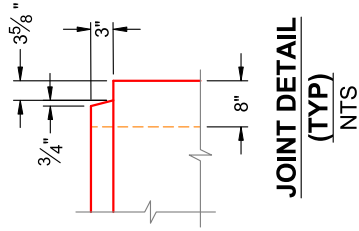
Structure ID: BC 4 x 2 (PC 19)

P1 BC048024-08WLF

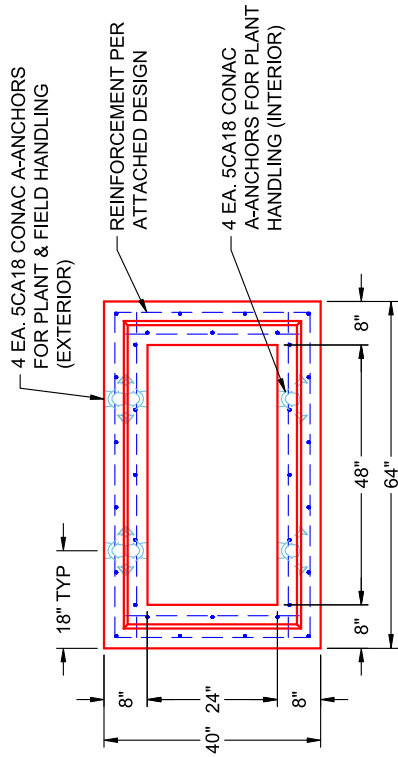
BOX CULVERT (08W/08F/08T) No Haunch G/T



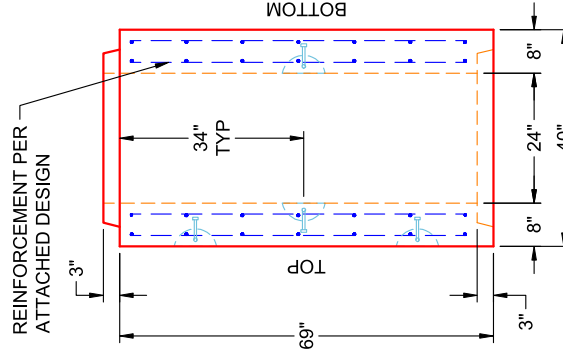
COMPONENT ISOMETRIC VIEW



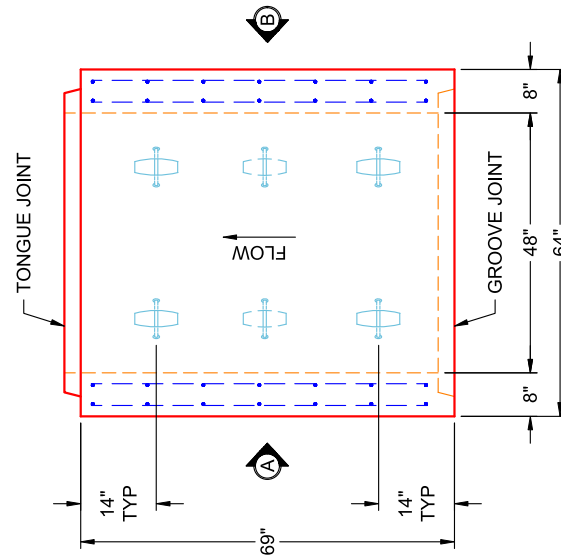
JOINT DETAIL (TYP) NTS



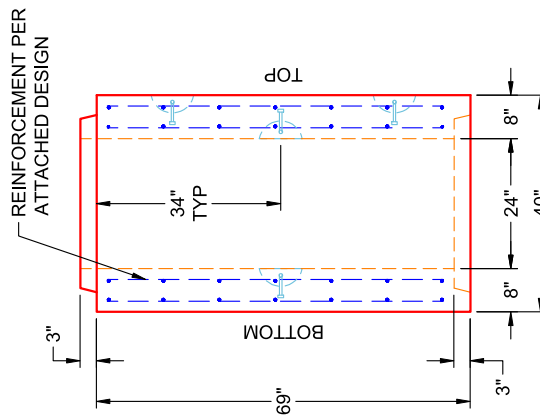
END VIEW TYPICAL



VIEW B PC 19 (UPRIGHT IN MOLD)



PLAN VIEW PC 19 (UPRIGHT IN MOLD)



VIEW A PC 19 (UPRIGHT IN MOLD)

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: 4'-8"
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: 4' X 2' (48" X 24") RCBC = 1,418 LBS / LF (69" LONG SECTION = 8,152 LBS)

INFRASTRUCTURE PRECAST (ICAST)

Sht _____ of _____
 By: J. Horsley
 Ck: _____
 5/11/2026 4:10:17 PM
 p. 1 of 3

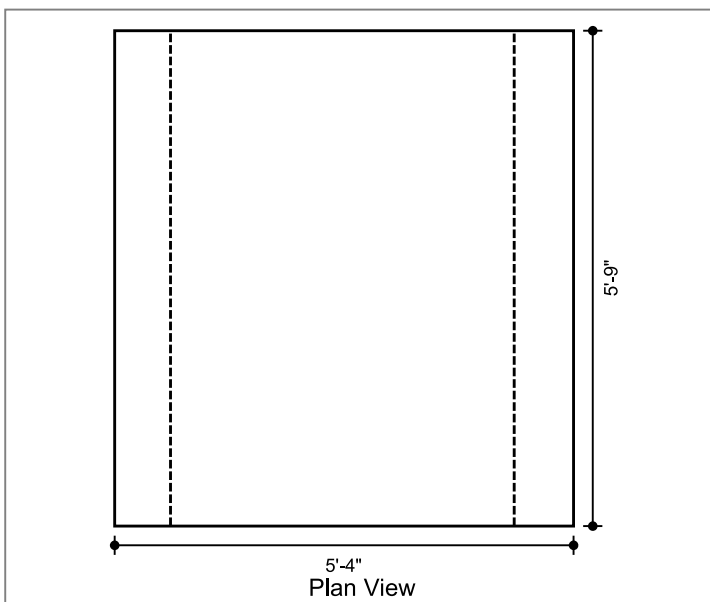
Project : Alcoa Outfall
 Task :
 Job No. : 25-2073

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

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

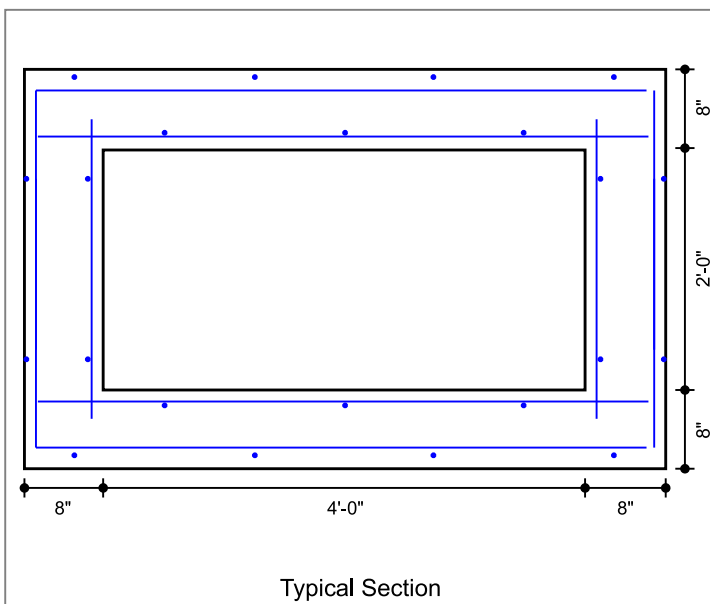
Physical Dimensions

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

INFRASTRUCTURE PRECAST (ICAST)

Sht _____ of _____

By: J. Horsley

Ck: _____

5/11/2026 4:10:17 PM

etc of 3

Project : Alcoa Outfall

Task :

Client: Bowen Engineering Co

Job No. : 25-2073

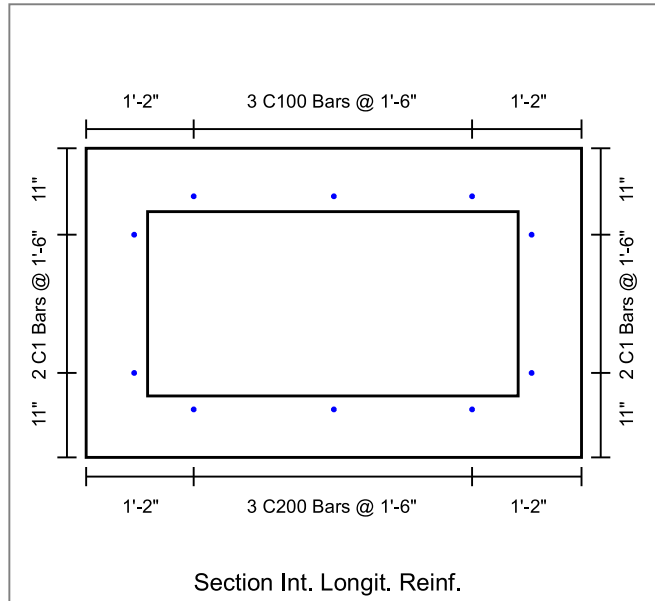
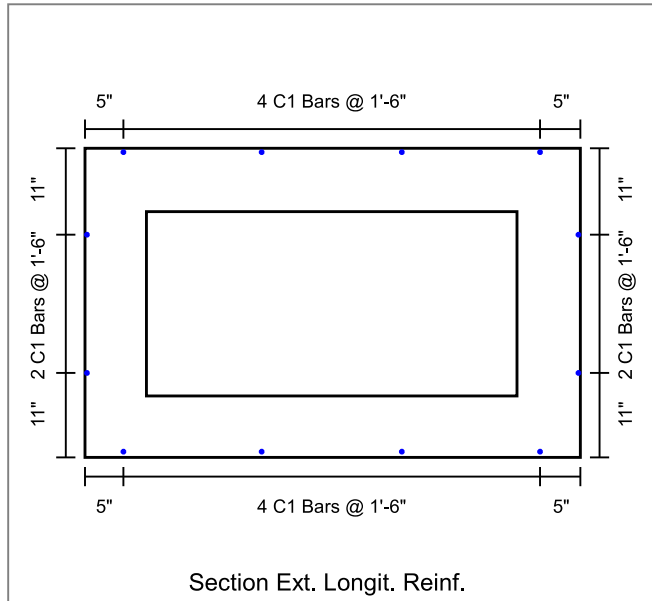
File: 4x2 BC Four Sided (no haunch) - 25-2073 Alcoa Outfall

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)

Sht _____ of _____

By: J. Horsley

Ck: _____

5/11/2026 4:10:17 PM

Project : Alcoa Outfall

Client: Bowen Engineering Co

Task :

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

Page 3 of 3

