

Job Name: 26-1508BC - Ferdinand State Park Culverts Replacement
 Job Location: Ferdinand, IN
 Contractor: WB Koester Construction, LLC

Plant: 100

9/15/2026 1:35:33 PM

Tech: Jared - F
 PC: E. Bradley



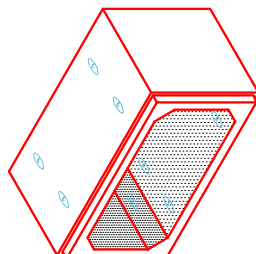
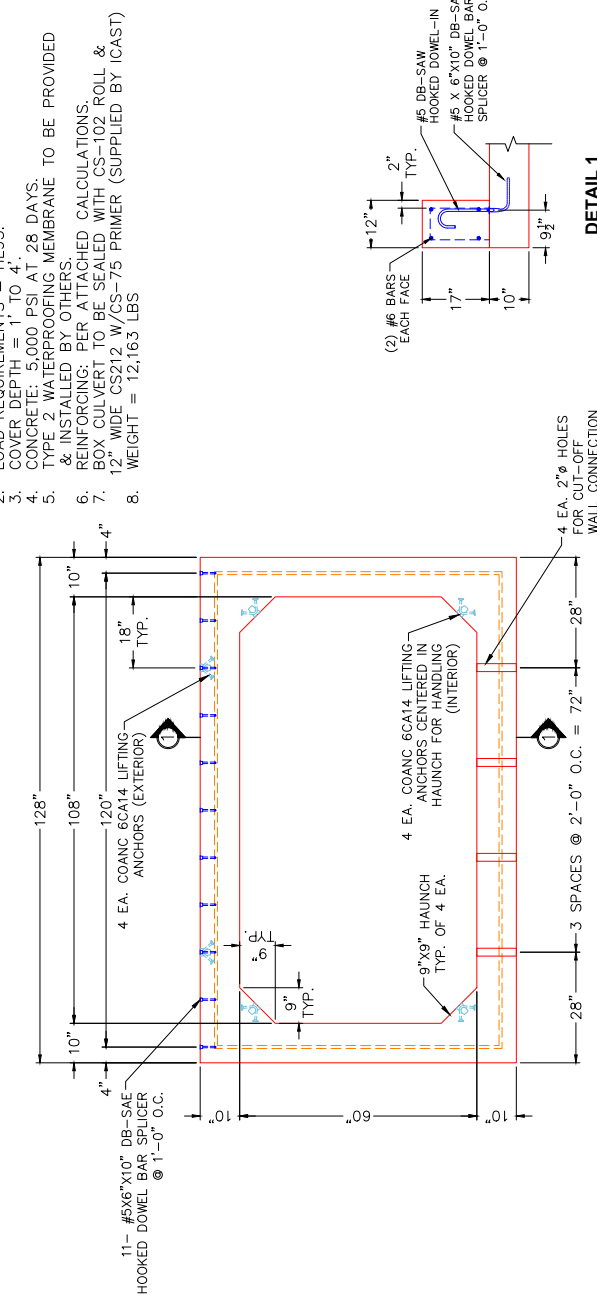
Structure ID: CV-3 Box Culvert

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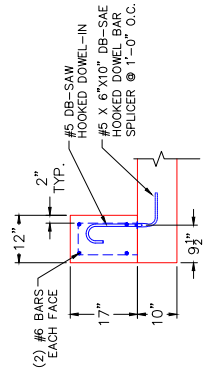
BOX CULVERT (10W/10F/10T) F/G F/G

NOTES:

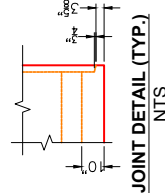
- BOX CULVERT IS DESIGNED PER INDOT STANDARD SPECIFICATION IN ACCORDANCE W/ AASHTO LRFD 9TH EDITION
- LOAD REQUIREMENTS = HL93.
- COVER DEPTH = 1' TO 4'.
- CONCRETE: 5,000 PSI AT 28 DAYS.
- TYPE 2 WATERPROOFING MEMBRANE TO BE PROVIDED & INSTALLED BY OTHERS.
- REINFORCING: PER ATTACHED CALCULATIONS.
- BOX CULVERT TO BE SEALED WITH CS-102 ROLL & 12" WIDE CS212 W/CS-75 PRIMER (SUPPLIED BY ICAST)
- WEIGHT = 12,163 LBS



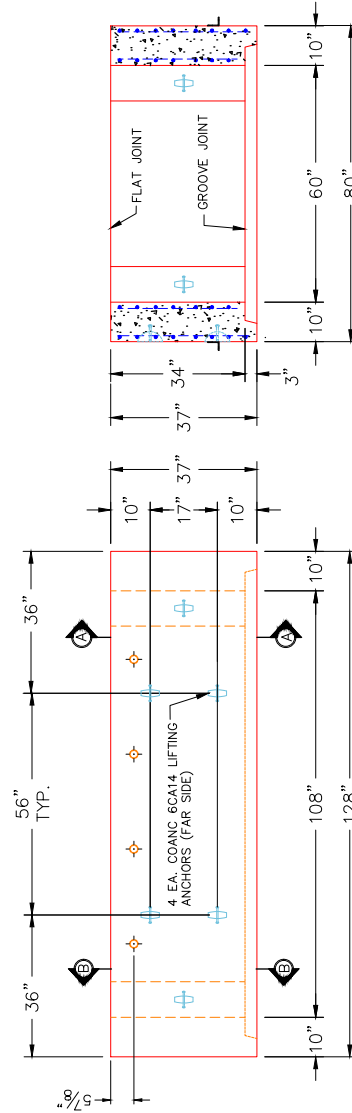
COMPONENT ISOMETRIC VIEW



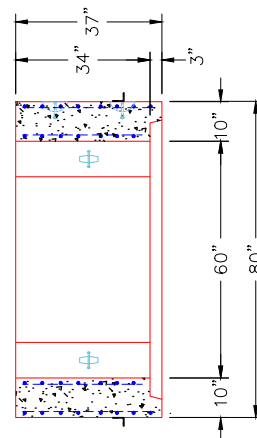
DETAIL 1
TYP. HEADWALL REINFORCING
NTS



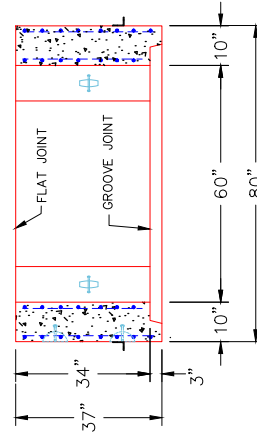
JOINT DETAIL (TYP.)
NTS



FRONT VIEW



SECTION A-A



SECTION B-B

Coating (Int):
Coating (Ext):

Seam Up: Flat
Seam Dn: Groove

Wall Thickness: 10"
Floor Height: 0"

Height (Int): 37"
Height (Ext): 37"

Weight (Net): 15139 lb
Volume (Net): 3.87cu.yd

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INFRASTRUCTURE PRECAST (ICAST)

Project : Ferdinand State Forest Culvert

Task :

Job No. : 26-1508BC

Client: W.B. Koester

File: 9x5 BC Four Sided - 26-1508BC Ferdinand State Forest

Sht ____ of ____

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Ck: _____

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

Physical Dimensions

Clear Span: 9'-0"
Clear Height: 5'-0"
Top Slab: 10"
Bottom Slab: 10"
Ext. Wall: 10"
Fill Depth Range
Maximum: 1.99 ft
Minimum: 0.00 ft
Increment: 0.50 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: 6.000 ksi
Density: 0.150 kcf
Elasticity, Ec: 4877 ksi
Type: Normal wt
Steel
Yield, fy: 60 ksi
Allow Stress: 36 ksi
Elasticity, Es: 29000 ksi
Soil
Density: 0.120 kcf
Exposure Factor
User-Defined: 1.00
Reinforcement Covers
Ext. Cover Top Slab: 2"
Ext. Cover Bottom Slab: 1 1/2"
Ext. Cover Walls: 1 1/2"
Int. Cover Walls: 1 1/2"
Int. Cover Top Slab: 2"
Int. Cover Bottom Slab: 2"

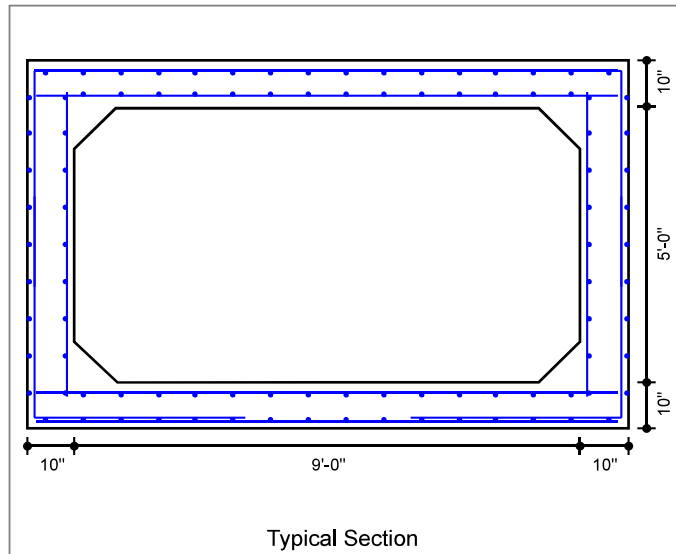
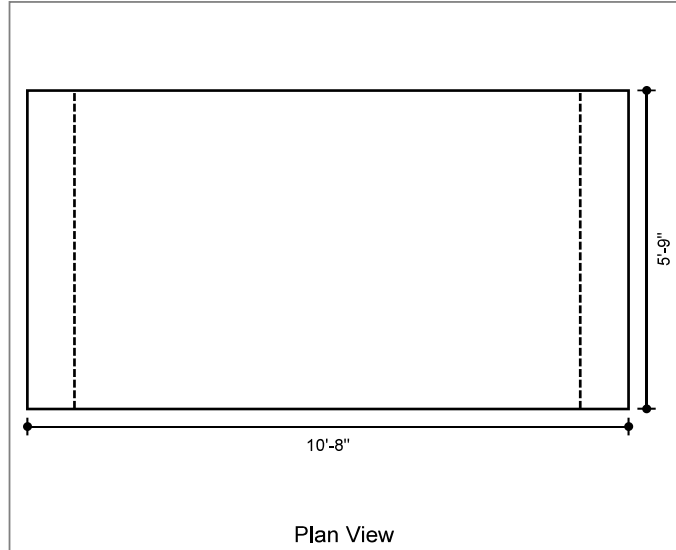
Controlling Ratings

Inventory Rating: 1.14
Operating Rating: 1.48

Loads

Live Load
Vehicle Names: KY 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

Interior Water Pressure: no
Exterior Water Pressure: no



Lateral Soil Loads

Eq. Fluid Press. Max: 60.00 pcf
Eq. Fluid Press. Min: 30.00 pcf

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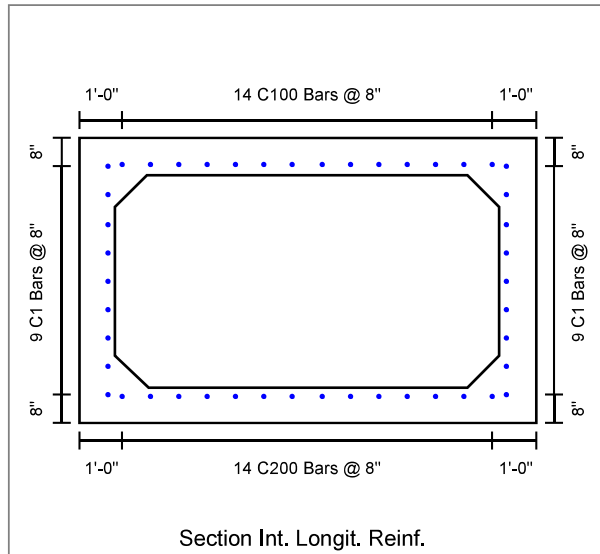
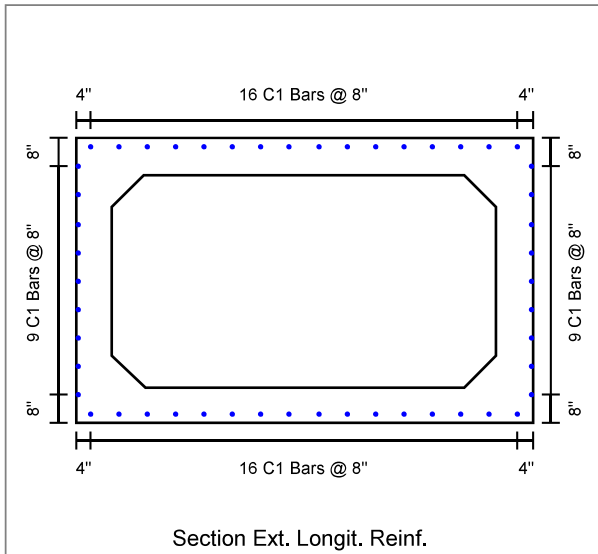
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Concrete Summary

Volume of Concrete: 1.009 cy/ft Total Volume of Concrete: 5.800 cy

Reinforcing Steel Bar Schedule (lb)

Location	Mark	Qty	Size	Spacing	Type	Length	Hor.Leg	Ver.Leg	Tot.Weight
Top Slab(Int)	A100 (AS2)	9	6	8"	S	10'-4"	--	--	140.0
Bot Slab(Int)	A200 (AS3)	9	6	8"	S	10'-4"	--	--	140.0
Top Slab(Ext)	A300 (AS7)	9	6	8"	S	10'-4"	--	--	140.0
Bot Slab(Ext)	A400 (AS8)	9	5	8"	S	10'-4"	--	--	97.0
Corner(Top)	A1 (AS1)	18	5	8"	L	8'-7"	4'-8"	3'-11"	161.0
Corner(Bot)	A2 (AS1)	18	5	8"	L	7'-9"	3'-9"	4'-0"	145.0
Wall(Int)	B1 (AS4)	18	5	8"	S	5'-6"	--	--	103.0
Longit. Top (Int)	C100 (AS5)	14	5	8"	S	5'-8"	--	--	83.0
Longit. Bot (Int)	C200	14	5	8"	S	5'-8"	--	--	83.0
Longit. Top (Ext)	C1 (AS6)	16	5	8"	S	5'-8"	--	--	94.5
Longit. Bot (Ext)	C1 (AS6)	16	5	8"	S	5'-8"	--	--	94.5
Longit. Wall (Ext)	C1 (AS6)	18	5	8"	S	5'-8"	--	--	106.4
Longit. Wall (Int)	C1 (AS6)	18	5	8"	S	5'-8"	--	--	106.4
									1494



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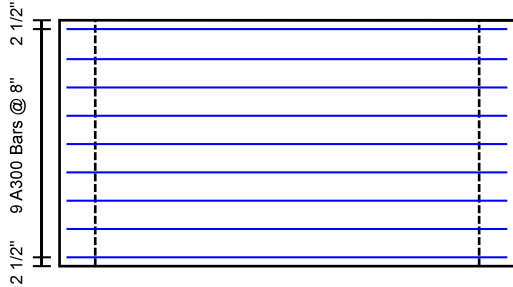
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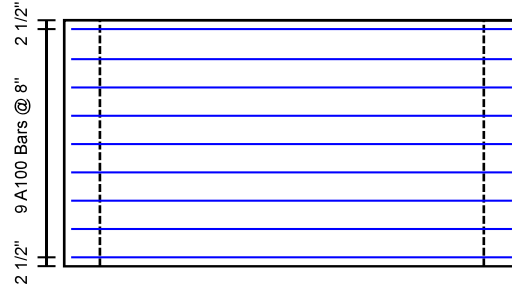
Ext. Wall Reinf.



Int. Wall Reinf.



Top Slab Ext. Reinf.



Top Slab Int. Reinf.



Bottom Slab Ext. Reinf.



Bottom Slab Int. Reinf.

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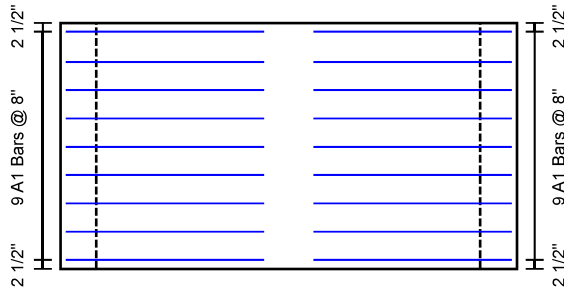
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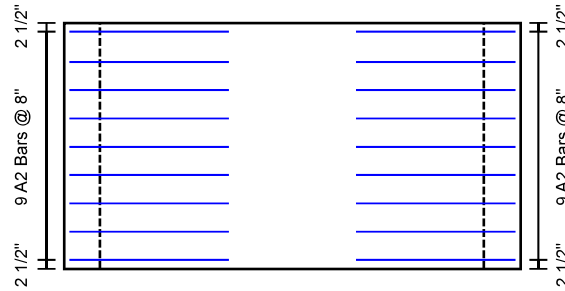
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Top Slab Corner Reinf.



Bottom Slab Corner Reinf.