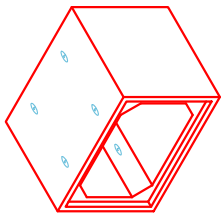
Job Name: 25-2898 - Hunter's Ridge Ph.1
Job Location: Owensboro, KY
Contractor: Ernie Davis & Sons Mechanical, Inc.

Plant: 100
5/29/2026 8:41:15 AM

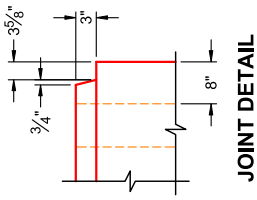
Tech: Jared - A
PC: A. Chambers

Structure ID: BC 6 x 4 (Sec D)

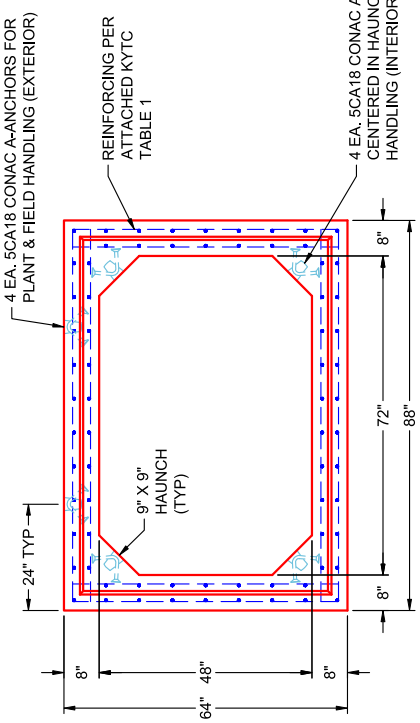
P1 **BC048072-08WLF-9H** **BOX CULVERT (08W/08F/08T) G/T**



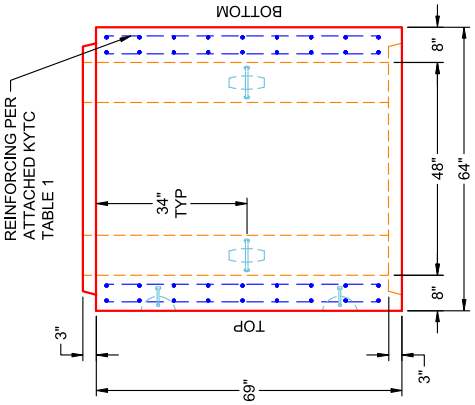
COMPONENT ISOMETRIC VIEW



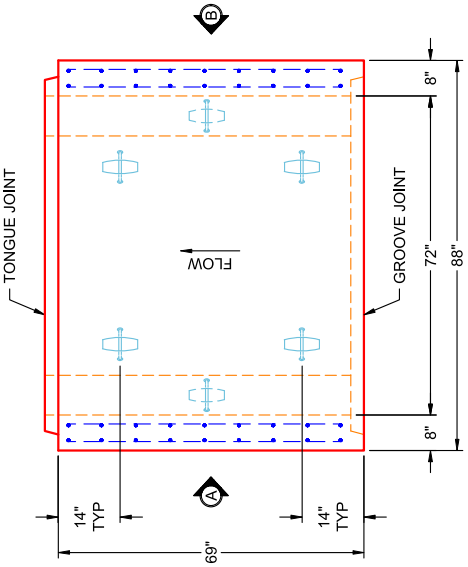
JOINT DETAIL (TYP) NTS



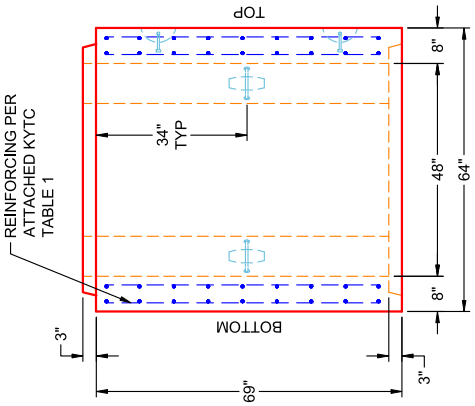
END VIEW TYPICAL



VIEW B SEC D (UPRIGHT IN MOLD)



PLAN VIEW SEC D (UPRIGHT IN MOLD)



VIEW A SEC D (UPRIGHT IN MOLD)

GENERAL NOTES:

1. PER SECTION 605 OF KYTC STANDARD SPECS FOR ROAD & BRIDGE CONSTRUCTION
2. LOAD REQUIREDMENTS: KY-HL93 (KY TABLE 1)
3. REINFORCEMENT PER ATTACHED KYTC TABLE 1
4. COVER DEPTH: 0' - 4'
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: 6' X 4' RCBC = 2,354 LBS / LF
   (5'-9" LONG SECTION = 13,537 LBS)

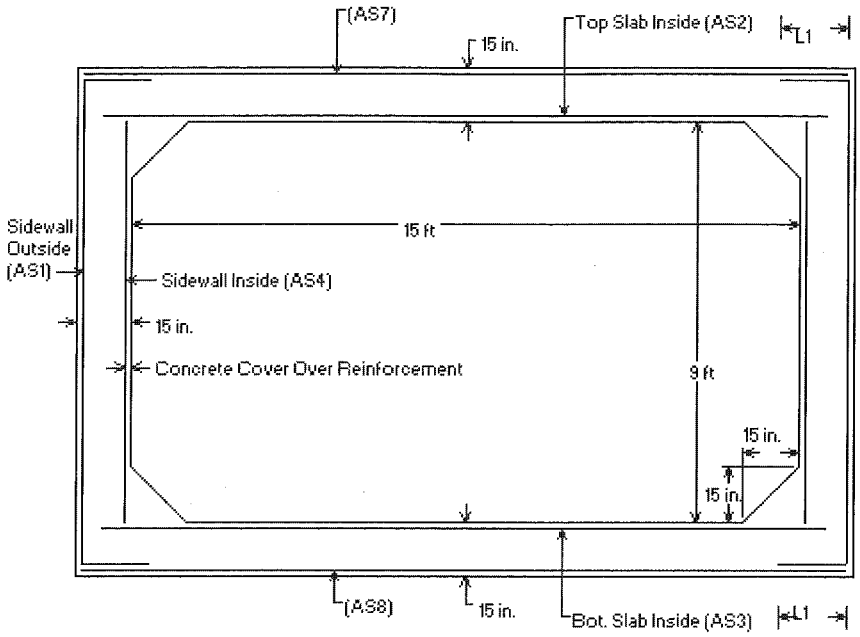
PRODUCTION WORK ORDER

PRODUCT I.D.:	BC048072-08WLF-9H
PRODUCT VIEW:	RIGHT SIDE UP
PLANT:	BEAVER DAM, KY
WEIGHT:	13,537 LBS
TOP SECTION JOINT:	TONGUE
BASE SECTION JOINT:	GROOVE
QC CHECK INITIALS:	

DESCRIPTION: 72" X 48" X 69" BOX CULVERT (8" WALLS & 9" HAUNCH)
CUSTOMER: ERNIE DAVIS & SONS MECHANICAL, INC.
PROJECT: HUNTER'S RIDGE PH 1
STRUCTURE: BC 6 X 4 (SEC D)
ORDER NO: 25-2898
PE: J.H. ROSS | DRAWING: K. CARDWELL
DATE: 05/29/26 | SCALE: NTS | PG. 1 OF 1

QUALITY CONTROL CHECKLIST

- ☐ ☐ ALL DIMENSIONS CORRECT.
- ☐ ☐ LIFTERS INSTALLED INSIDE.
- ☐ ☐ RECESS WITH HAUNCHES CORRECT.
- ☐ ☐ REINFORCING CORRECT.
- ☐ ☐ SURFACE QUALITY ACCEPTABLE.
- ☐ ☐ LIFTERS INSTALLED OUTSIDE.
- ☐ ☐ PRODUCT SQUARE.



* <L1> is Splice Length
* (AS7) is Top Slab Outside
* (AS8) is Bottom Slab Outside
* See Box Culvert Design Summary Sheet for transverse and distribution reinforcement, as required.
* For sidewall thicknesses of 6 in. and above, extend AS2 and AS3 a min. of 4 in. beyond the inside face of the sidewall. For thicknesses less than 6 in., extend AS2 and AS3 at least to within 1-1/2 in. of the outside face of the sidewall.

Notes:

1) Other reinforcement schemes that provide the required reinforcement areas at all locations identified in the program output are acceptable.
2) Longitudinal reinforcement is not shown for clarity, see AASHTO M259 for longitudinal reinforcement and for additional requirements.

KY Table 1

Precast Culvert KYHL-93 Design Table

	Design Earth Cover, ft	As1	As2	As3	As4	As7	As8	As5	As6
6x4x7	0<2*	0.202	0.421	0.266	0.168	0.192	0.168	0.192	0.192
	2<3	0.251	0.368	0.288	0.168	0.168	0.168		
	3-5	0.19	0.271	0.24	0.168	0.168	0.168		
	10	0.168	0.228	0.234	0.168	0.168	0.168		
	15	0.216	0.306	0.313	0.168	0.168	0.168		
	20	0.275	0.391	0.398	0.168	0.168	0.168		
	25	0.338	0.479	0.487	0.168	0.168	0.168		
	30	0.404	0.571	0.579	0.168	0.168	0.168		
	35	0.473	0.667	0.675	0.168	0.168	0.168		

*top slab 8"

	Design Earth Cover, ft	As1	As2	As3	As4	As7	As8	As5	As6
6x5x7	0<2*	0.192	0.449	0.291	0.168	0.192	0.168	0.192	0.192
	2<3	0.22	0.398	0.316	0.168	0.168	0.168		
	3-5	0.168	0.294	0.262	0.168	0.168	0.168		
	10	0.168	0.243	0.252	0.168	0.168	0.168		
	15	0.188	0.326	0.336	0.168	0.168	0.168		
	20	0.238	0.417	0.427	0.168	0.168	0.168		
	25	0.291	0.512	0.522	0.168	0.168	0.168		
	30	0.347	0.611	0.622	0.168	0.168	0.168		
	35	0.406	0.714	0.725	0.168	0.168	0.168		

*top slab 8"

	Design Earth Cover, ft	As1	As2	As3	As4	As7	As8	As5	As6
6x6x7	0<2*	0.192	0.47	0.311	0.168	0.192	0.168	0.192	0.192
	2<3	0.195	0.421	0.337	0.168	0.168	0.168		
	3-5	0.168	0.311	0.277	0.168	0.168	0.168		
	10	0.168	0.252	0.263	0.168	0.168	0.168		
	15	0.168	0.338	0.349	0.168	0.168	0.168		
	20	0.212	0.432	0.444	0.168	0.168	0.168		
	25	0.259	0.531	0.543	0.168	0.168	0.168		
	30	0.308	0.634	0.647	0.168	0.168	0.168		
	35	0.359	0.741	0.755	0.168	0.168	0.168		

*top slab 8"

Default Configuration (page 1)

Default Parameters

Data Directory: c:

Jeremiah.Littleton
Documents
BOXCAR3.1

SI Unit File Customary US Unit File

Section Length 3 ft

Box Geometry

	SPAN ≤ / ft				SPAN > / ft			
Top Slab Thickness	(Span/	12	+ 1	in.	(Span/	12	+ 0	in.
Bottom Slab Thickness	(Span/	12	+ 1	in.	(Span/	12	+ 0	in.
Sidewall Thickness	(Span/	12	+ 1	in.	(Span/	12	+ 0	in.
Horizontal Haunch Length	(Span/	12	+ 1	in.	(Span/	12	+ 0	in.
Vertical Haunch Length	(Span/	12	+ 1	in.	(Span/	12	+ 0	in.

Clear Concrete Covers

Top Slab Outside Face	2	in. (MINIMUM DEPTH OF FILL < 2 ft)
Top Slab Outside Face	1	in. (MINIMUM DEPTH OF FILL >= 2 ft)
Bottom Slab Outside Face	1	in.
Sidewall Outside Face	1	in.
Top Slab Inside Face	1	in.
Bottom Slab Inside Face	1	in.
Sidewall Inside Face	1	in.

Reinforcement Type: Welded Wire

Material Properties

Main Reinforcement Yield Strength	65000	psi
Design Concrete Strength	5000	psi
Concrete Unit Weight	150	pcf
Stirrup Reinforcement Developable Yield Stress	60000	psi
Total Service Stress Limit	100	%

Restore Default Settings

Next Page >> Return to Main Menu

Default Configuration (page 2)

Design Code: AASHTO - LRFD

Strength Reduction Factors

Design Code

Flexure	1
Shear	0.9

Axial Thrust Load Factor: User Specified 1

Crack Width (CHBDC Only) 0.25 mm

Reinforcement Diameter

		Diameter			Maximum Spacing	
Sidewall Outside	(AS1)	0.05 * Sidewall Thickness + 0	in.		4	in.
Top Inside	(AS2)	0.05 * Top Slab Thickness + 0	in.		4	in.
Bottom Inside	(AS3)	0.05 * Bottom Slab Thickness + 0	in.		4	in.
Sidewall Inside	(AS4)	0.05 * Sidewall Thickness + 0	in.		4	in.
Top Outside	(AS7)	0.05 * Top Slab Thickness + 0	in.		4	in.
Bottom Outside	(AS8)	0.05 * Bottom Slab Thickness + 0	in.		4	in.

Soil Load Data

Soil Unit Weight	120	pcf
Minimum Lateral Pressure Coefficient	0.25	
Maximum Lateral Pressure Coefficient	0.5	

Vertical Arching Factor: Embankment/Compacted

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Boxcar - Default (page 3) [Interstate/Tandem]

Live Load Data

Live Load Type (Max 2)	Magnitude (N)		Footprint	User Specified (Not by Code) Length		Width	
HS-Series	25	tons	By Code	10	in.	20	in.
Interstate/Tandem	25	kips	By Code	10	in.	20	in.
Cooper Series	80	kips	By Code	0	in.	0	in.
CHBDC Truck	140	kips	By Code	10	in.	24	in.
Tandem/Tridem	140	kips	By Code	10	in.	20	in.
Other	10	kips	By Code	10	in.	20	in.
None							

Direction of Traffic: Parallel To Span

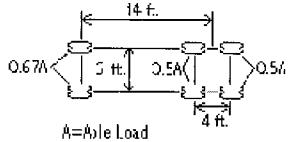
Impact Factor Options: Design Code

Impact Factor (User Def) 1

Lane Load 0 lb/ft

Live Load Distribution Factor (LLDF): Design Code 1.15

Interstate/Tandem Truck Wheel Layout



A=Axle Load

Fluid Loads

Depth of Fluid 1 * Rise

Fluid Unit Weight 62.5 pcf

Surcharge Loads

Uniform Vertical	0	lb/ft
Lateral - Top of Culvert (LLTC)	90	lb/ft
Lateral - Bottom of Culvert (LLBC)	90	lb/ft

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