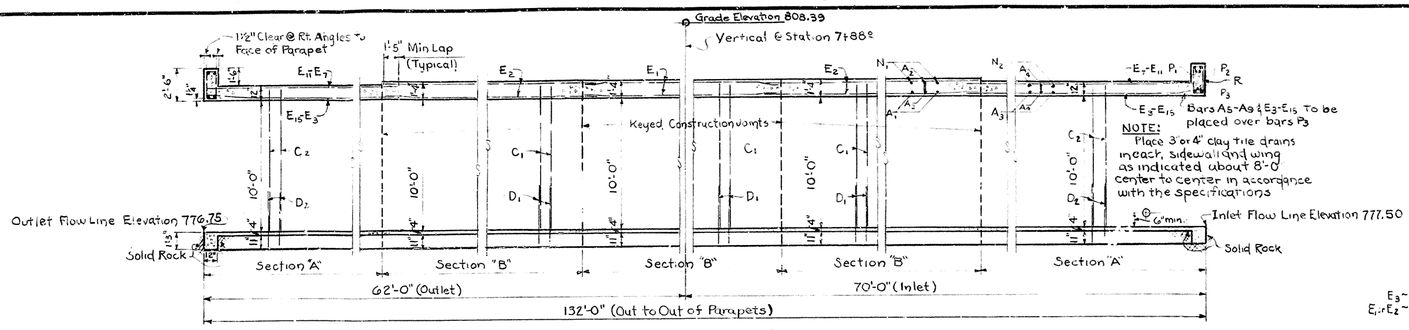
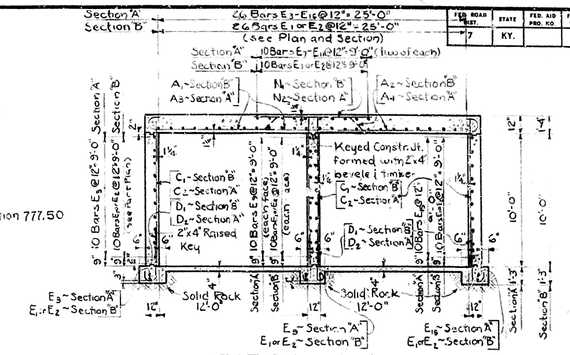
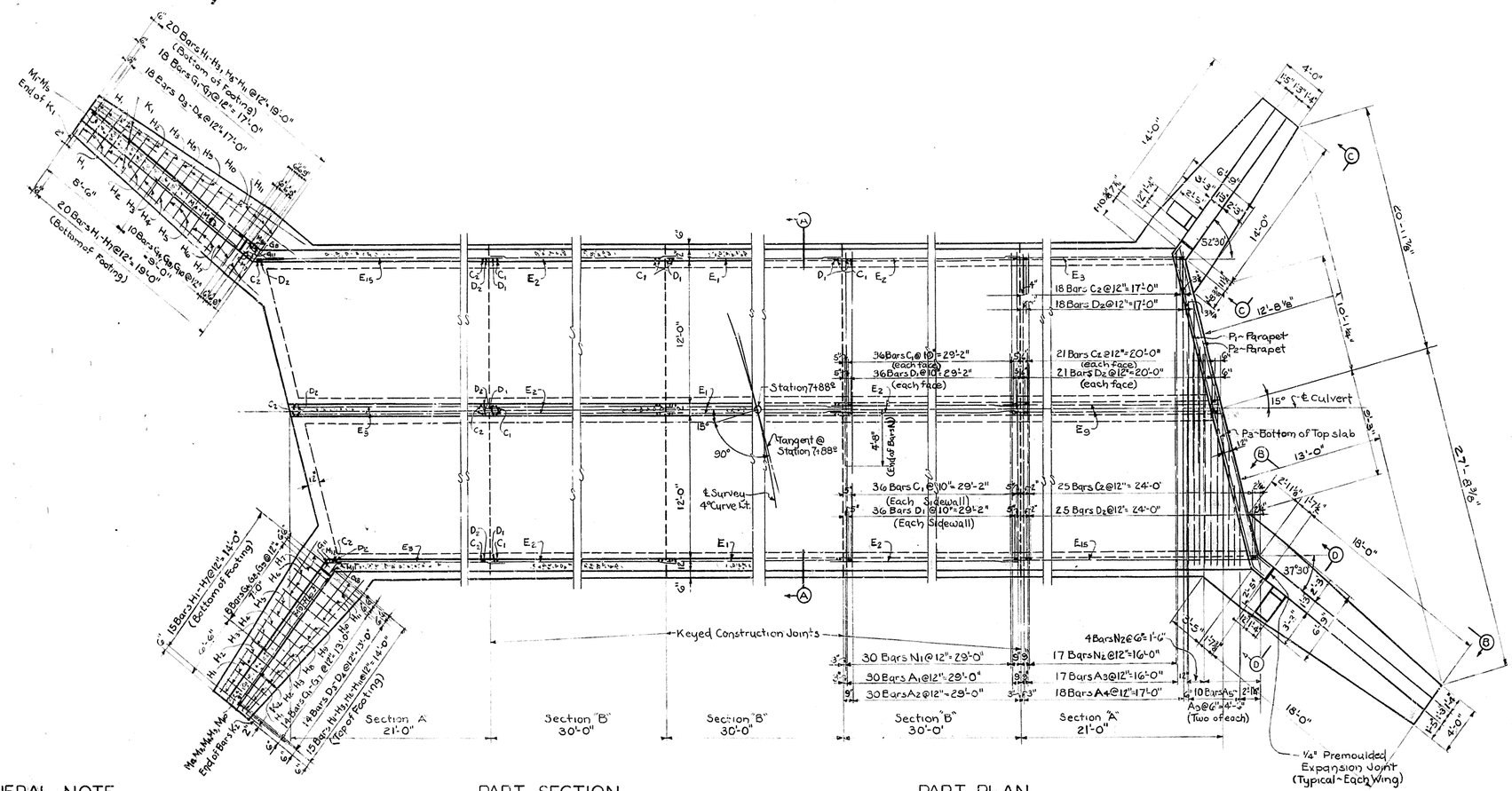
FED. ROAD DIST.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY.			170	227



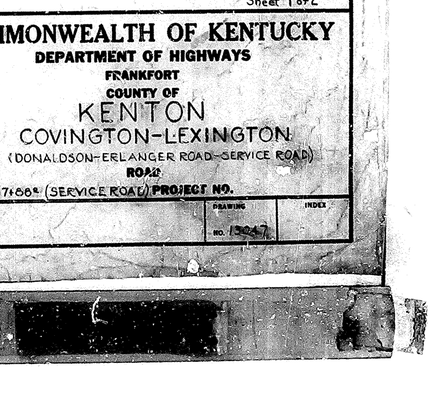
SECTION ON ℄



SECTION A-A



PART PLAN



END ELEVATION

GENERAL NOTE

SPECIFICATIONS: Kentucky Department of Highways, Standard Specifications, 1956, with Amendments.
DESIGN LOAD: Culvert designed for H20-S16-44 loading as specified in AASHO Specifications, 1953.
DESIGN STRESSES: fs = 18,000 lbs. per sq. in. fc = 1200 lbs per sq. in. n = 10
CONCRETE: All concrete to be Class "A".
REINFORCEMENT: Distances shown from face of concrete to bars are clear distances. Bar spacing dimensions are center to center of bars.
BEVELED EDGES: All exposed edges shall be beveled ⅞" unless otherwise specified.

PART SECTION

Double 12'-0" x 10'-0" x 132'-0" R.C. Culvert @ 15° Skew Right
2:1 Fill Slopes - 44'-0 Shoulders

BILL OF INCIDENTIAL MATERIAL

Item	No. of Pieces	Size	Location
Premoulded Expansion Joint Material	4	½" x 1'-3" x 12'-0"	Wing Stems

NOTE: Quantities shown in Bill of Incidential Material are approximate only; and the contractor is responsible for furnishing enough material to complete the work according to plans and specifications.

ESTIMATE OF QUANTITIES

Concrete, Class "A"	436.8	Cu. Yds.
Reinforcement	56270	Lbs.
Structure Excavation, Common	40	Cu. Yds.
Structure Excavation, Solid Rock	180	Cu. Yds.
Channel Change	See Road Plans	

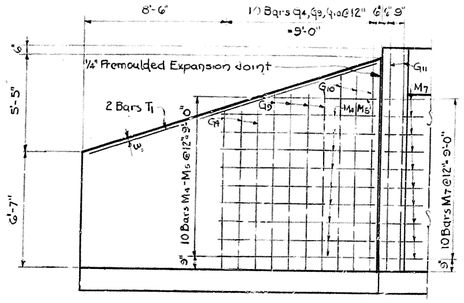
Sheet 1 of 2

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
FRANKFORT
COUNTY OF
KENTON
COVINGTON-LEXINGTON
(DONALDSON-ERLANGER ROAD-SERVICE ROAD)
ROAD
STATION 7+88 (SERVICE ROAD) **PROJECT NO.**

BRIDGE NUMBER	DRAWING NO. 13047	INDEX

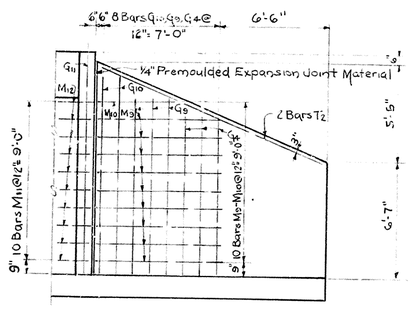
DESIGNED BY	DATE	REVISED	DATE
CHECKED BY	DATE	REVISED	DATE
DETAILED BY	DATE	REVISED	DATE
TRACED BY	CHECKED BY		

FED. ROAD DIST.	STATE	FED. AID PRO. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY.			178	527



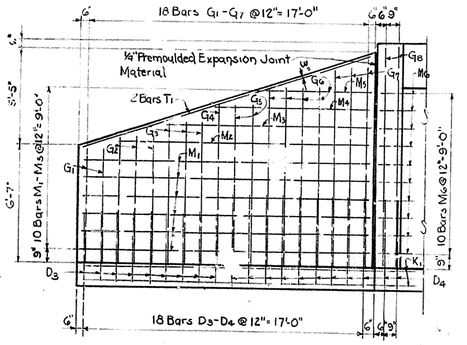
ELEVATION B-B

(Showing Reinforcement in Front Face & Top of Stem)



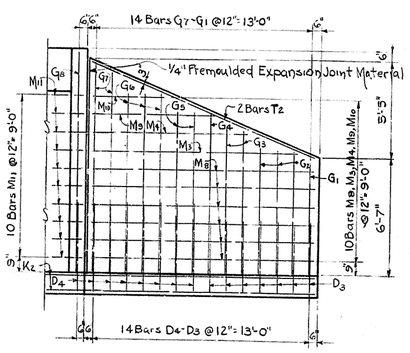
ELEVATION C-C

(Showing Reinforcement in Front Face & Top of Stem)



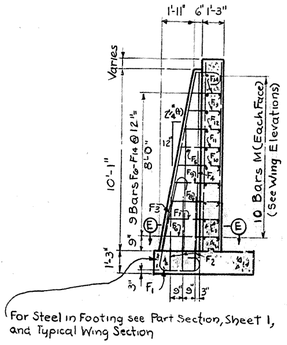
ELEVATION B-B

(Showing Reinforcement in Back Face & Top of Stem)



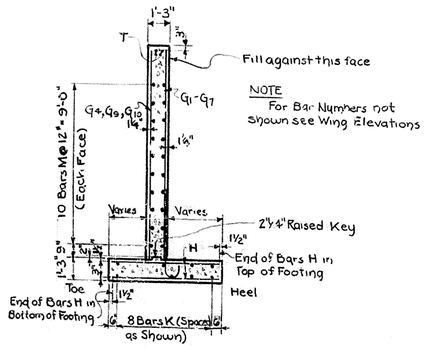
ELEVATION C-C

(Showing Reinforcement in Back Face & Top of Stem)

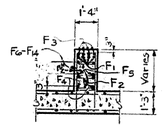


SECTION D-D

(Showing Counterfort - One for each Wing)



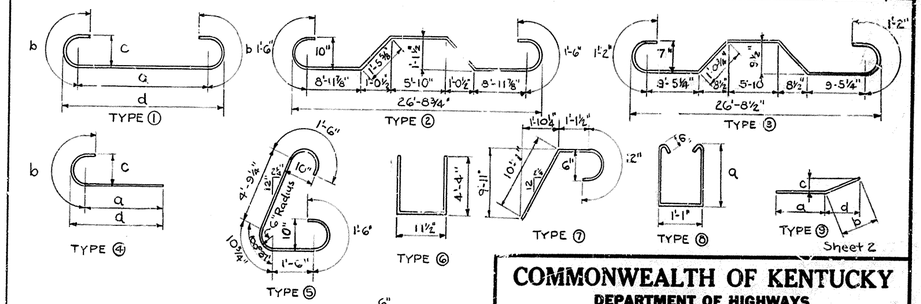
TYPICAL WING SECTION



SECTION E-E

BILL OF REINFORCEMENT

MARK	TYPE	NO.	SIZE	LENGTH FT.	LENGTH IN.	LOCATION	a FT.	a IN.	b FT.	b IN.	c FT.	c IN.	d FT.	d IN.
A1	①	90	#6	28	3	Top Slab	26	3	1	0	0	6	26	9
A2	⑥	90	8	29	9	" "	—	—	—	—	—	—	—	—
A3	①	34	5	28	0	" "	26	4	0	10	0	5	26	9
A4	⑤	36	7	29	2	" "	—	—	—	—	—	—	—	—
A5	①	4	5	24	4	" "	22	8	0	10	0	5	2	1
A6	"	4	"	20	8	" "	18	0	0	10	0	5	19	5
A7	"	4	"	16	11	" "	15	5	0	10	0	5	15	5
A8	Str.	4	"	11	11	" "	—	—	—	—	—	—	—	—
A9	"	4	"	8	2	" "	—	—	—	—	—	—	—	—
C1	"	432	8	11	2	Sidewalls	—	—	—	—	—	—	—	—
C2	"	170	7	10	10	"	—	—	—	—	—	—	—	—
D1	④	432	8	4	10	"	3	4	1	6	0	10	3	9
D2	"	170	7	4	4	"	3	2	1	2	0	7	3	5½
D3	"	32	5	4	5	Wings	3	7	0	10	0	5	3	9½
D4	"	38	7	5	9	"	4	7	1	2	0	7	4	10½
E1	Str.	80	4	29	9	Barrel	—	—	—	—	—	—	—	—
E2	"	160	"	31	5	"	—	—	—	—	—	—	—	—
E3	"	26	"	19	4	"	—	—	—	—	—	—	—	—
E4	"	4	"	19	11	"	—	—	—	—	—	—	—	—
E5	"	4	"	20	5	"	—	—	—	—	—	—	—	—
E6	"	4	"	21	0	"	—	—	—	—	—	—	—	—
E7	"	8	"	21	6	"	—	—	—	—	—	—	—	—
E8	"	8	"	22	1	"	—	—	—	—	—	—	—	—
E9	"	52	"	22	7	"	—	—	—	—	—	—	—	—
E10	"	8	"	23	1	"	—	—	—	—	—	—	—	—
E11	"	8	"	23	8	"	—	—	—	—	—	—	—	—
E12	"	4	"	24	2	"	—	—	—	—	—	—	—	—
E13	"	4	"	24	9	"	—	—	—	—	—	—	—	—
E14	"	4	"	25	3	"	—	—	—	—	—	—	—	—
E15	"	26	"	25	10	"	—	—	—	—	—	—	—	—
F1	⑤	16	8	10	2	Counterforts	—	—	—	—	—	—	—	—
F2	⑥	12	6	9	5	"	—	—	—	—	—	—	—	—
F3	⑦	16	"	12	1	"	—	—	—	—	—	—	—	—
F4	Str.	8	5	9	11	"	—	—	—	—	—	—	—	—
F5	"	8	"	6	7	"	—	—	—	—	—	—	—	—
F6	⑤	4	"	8	5	"	3	3	—	—	—	—	—	—
F7	"	4	"	8	0	"	3	0½	—	—	—	—	—	—
F8	"	4	"	7	8	"	2	10½	—	—	—	—	—	—
F9	"	4	"	7	3	"	2	8¼	—	—	—	—	—	—
F10	"	4	"	6	10	"	2	5¾	—	—	—	—	—	—
F11	"	4	"	6	6	"	2	3½	—	—	—	—	—	—
F12	"	4	"	6	1	"	2	1¼	—	—	—	—	—	—
F13	"	4	"	5	9	"	1	11	—	—	—	—	—	—
F14	"	4	"	5	4	"	1	8⅜	—	—	—	—	—	—
G1	Str	6	4	6	5	Wings-Stem	—	—	—	—	—	—	—	—
G2	"	12	"	6	11	" "	—	—	—	—	—	—	—	—
G3	"	10	"	7	11	" "	—	—	—	—	—	—	—	—
G4	"	16	"	8	11	" "	—	—	—	—	—	—	—	—
G5	"	8	5	8	11	" "	—	—	—	—	—	—	—	—
G6	"	14	"	9	11	" "	—	—	—	—	—	—	—	—
G7	"	10	"	11	1	" "	—	—	—	—	—	—	—	—
G8	Str	6	#5	12	4	Wings-Stem	—	—	—	—	—	—	—	—
G9	"	14	4	9	11	" "	—	—	—	—	—	—	—	—
G10	"	10	"	11	1	" "	—	—	—	—	—	—	—	—
G11	"	6	"	12	4	" "	—	—	—	—	—	—	—	—
H1	"	24	"	3	9	" -Footing	—	—	—	—	—	—	—	—
H2	"	24	"	4	3	"	—	—	—	—	—	—	—	—
H3	"	16	"	4	9	"	—	—	—	—	—	—	—	—
H4	"	4	#5	4	3	"	—	—	—	—	—	—	—	—
H5	"	10	"	5	3	"	—	—	—	—	—	—	—	—
H6	"	12	"	5	9	"	—	—	—	—	—	—	—	—
H7	"	12	"	6	3	"	—	—	—	—	—	—	—	—
H8	"	4	7	4	9	"	—	—	—	—	—	—	—	—
H9	"	10	"	5	3	"	—	—	—	—	—	—	—	—
H10	"	12	"	5	9	"	—	—	—	—	—	—	—	—
H11	"	12	"	6	3	"	—	—	—	—	—	—	—	—
K1	"	16	4	20	6	"	—	—	—	—	—	—	—	—
K2	"	16	"	15	8	"	—	—	—	—	—	—	—	—
M1	"	12	"	17	8	" Stem	—	—	—	—	—	—	—	—
M2	"	2	"	15	6	" "	—	—	—	—	—	—	—	—
M3	"	4	"	12	6	" "	—	—	—	—	—	—	—	—
M4	"	22	"	9	6	" "	—	—	—	—	—	—	—	—
M5	"	4	"	6	6	" "	—	—	—	—	—	—	—	—
M6	⑨	20	"	3	7	" "	2	6	1	1	0	7⅞	0	10½
M7	"	20	"	2	6	" "	1	5	1	1	0	7⅞	0	10½
M8	Str	12	"	13	8	" "	—	—	—	—	—	—	—	—
M9	"	20	"	7	6	" "	—	—	—	—	—	—	—	—
M10	"	4	"	4	6	" "	—	—	—	—	—	—	—	—
M11	⑨	20	"	2	6	" "	1	8	1	1	0	10¼	0	7⅛
M12	"	20	"	1	9	" "	0	8	1	1	0	10¼	0	7⅛
N1	Str	90	10	9	4	Top Slab	—	—	—	—	—	—	—	—
N2	"	42	9	9	4	" "	—	—	—	—	—	—	—	—
P1	⑩	2	"	29	6	Parapet	—	—	—	—	—	—	—	—
P2	⑨	2	"	28	6	"	27	1	1	5	0	10¾	1	1½
P3	Str	4	5	27	7	Top Slab	—	—	—	—	—	—	—	—
R	⑪	56	"	6	9	Parapet	—	—	—	—	—	—	—	—
T1	Str	4	6	18	5	Wings-Top of Stem	—	—	—	—	—	—	—	—
T2	"	4	"	14	8	" "	—	—	—	—	—	—	—	—



Sheet 2

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
FRANKFORT
COUNTY OF
KENTON
COVINGTON - LEXINGTON
(DONALDSON-ERLANGER ROAD - SERVICE ROAD)
ROAD

STATION 7+88⁴ (SERVICE ROAD) **PROJECT NO.**

BRIDGE NUMBER | DRAWING NO. 1304 | INDEX

DESIGNED BY CEB DATE
DETAILED BY DAP DATE
TRACED BY DATE
CHECKED BY DAP DATE
CHECKED BY ZZ DATE
CHECKED BY DATE
REVISED DATE
REVISED DATE
REVISED DATE

Bridge Inspection Report

059C00071N
Inspector: Greg Cady
Entered by: GCADY
06/25/2018
Standard (24 months)

IDENTIFICATION

Structure Num (8):	059C00071N
NBI Number:	059C00071N
Structure Name:	
Location (9):	764 FT NE OF KY236
Carries (7):	HARTMAN RD
Type of Service (42A):	1 Highway
Feature Crossed (6):	VIOX CREEK
Type of Service (42B):	5 Waterway
Placecode (4):	Not Applicable
County (3):	Kenton (059)
State (1):	21 Kentucky
Admin Area:	Inventory
District:	District 6
Latitude (16):	39° 1.' 50"
Longitude (17):	84° 36' 54"
Owner (22):	City/Municipal Hwy Agenc
Maint. Resp. (21):	City/Municipal Hwy Agenc
Year Built (27):	1961
Year Recon (106):	
Border State (98A):	Not Applicable (P)
Border Number (99):	_
% Responsibility (98B):	

Poor **Heath Index:** 76.55

SubStd: No **SubStd Reason:** Not Sub-Standa

Inspection Type	Freq (92)	Last Insp (93)	Next Insp
Routine	24	6/25/2018	6/25/2020
Element	24	6/25/2018	6/25/2020
Fracture Critical (A)		1/1/1901	1/1/1901
Underwater (B)		1/1/1901	1/1/1901
Special Insp (C)		12/21/2017	1/1/1901

LOAD RATING AND POSTING

Posting Status(41):	A Open, no restriction
Posting (70):	5 At/Above Legal Loads
Signs Posted Cardinal:	No
Signs Posted Non-Cardinal:	No
Recmd Date:	
Posted Date:	

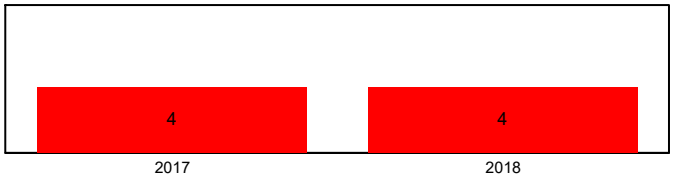
Required Postings (Tons.)	Field Postings (Tons.)
Gross:	**Gross:**
Truck Type 1:	**Truck Type 1**
Truck Type 2:	**Truck Type 2**
Truck Type 3:	**Truck Type 3**
Truck Type 4:	**Truck Type 4**
SUV 5:	**SUV 5:**
SUV 6:	**SUV 6:**
SUV 7:	**SUV 7:**
EV2:	
EV3:	

DECK GEOMETRY

Deck Geometry (68):	N Not applicable (NBI)
Deck Area:	777.68 ft²
Deck Type (107):	N N/A (NBI)
Wearing Surface (108A):	N N/A (no deck (NBI))
Membrane (108B):	N N/A (no deck (NBI))
Approach Roadway width (32):	27.89 ft.
Width Curb to Curb (51):	0.00 ft.
Deck Protection (108C):	N N/A (no deck (NBI))
O. to O. Width (52):	0.00 ft.
Curb / Sidewalk Width L (50A):	0.00 ft.
Curb / Sidewalk Width R (50B):	0.00 ft.
Median (33):	0 No median

SUPERSTRUCTURE GEOMETRY

# of Main Spans (45):	2
# of Approach Spans (46):	0
Main Material (43 A):	1 Concrete
Main Design (43 B):	19 Culvert
Max Span Length (48):	12.14 ft.
Structure Length (49):	27.89 ft.
NBIS Length (37):	Long Enough
Temp Structure (103):	Not Applicable (P)
Skew (34):	15°
Structure Flared (35):	0 No flare
Parallel Structure (101):	No || bridge exists
Approach Alignment (72):	6 Equal Min Criteria



CULVERT CONDITION

Culvert Rating (62):	4 Considerable Damage
Channel Rating (61):	5 Bank Prot Eroded
Bridge Rail (36A):	N N/A or not required
Transition (36B):	N N/A or not required
Approach Rail (36C):	N N/A or not required
Approach Rail Ends (36D):	N N/A or not required
Structure Evaluation (67):	4 Minimum Tolerable

SUBSTRUCTURE GEOMETRY

Navigation Control (38):	Permit Not Required
Vertical Clearance (39):	
Horizontal Clearance (40):	
Pier Protection (111):	Not Applicable (P)
Lift Bridge Vertical Clearance (116):	
Scour Rating (113):	8 Stable Above Footing
Waterway Adequacy (71):	6 Equal Minimum
Channel Rating (61):	5 Bank Prot Eroded

KYTC FIELDS

Overlay:	No	**Scour Observed:**	Minor Scour
Overlay Type:	None	**Scour Risk :**	Low Risk
Overylay Thickness:		**Scour Analysis/Assessment :**	Assessment Performed
Overlay Year:		**Scour POA :**	Not Required
Cross Section:	Yes	**Scour POA Date :**	
Cross Section Date:	03/03/2017	**Next Cross Section Due Date :**	06/25/2026

ROUTE ON STRUCTURE: HARTMAN RD

ROADWAY LOCATION

Pos Prefix (5A):	Route On Structure
Kind of Hwy (5B):	5 City Street
Route Num (5D):	03000
LRS Route (13A/B):	
Milepost (11):	0.15 mi
Suffix (5E):	0 N/A (NBI)
Lanes On (28A):	1
Detour Length (19):	1.86 mi

ROADWAY CLASSIFICATION

Funct Class (26):	19 Urban Local
Level Service (5C):	1 Mainline
NHS (104):	0 Not on NHS
Defense Hwy (100):	0 Not a STRAHNET hwy
Toll Facility (20):	3 On free road
ADT (29):	2,535 Cars/Day
Pct Trucks (109):	6.00%
ADT Year (30):	2018

CLEARANCES

Vertical (10):	99.99 ft.
Min Vert Over (53):	99.99 ft.
Vert Ref (54A):	N Feature not hwy or RR
Undrclearnce (54B):	0.00 ft.
Horizontal (47):	14.76 ft.
Min Lat Left (56):	0.00 ft.
Min Lat Right (55B):	0.00 ft.
Horiz Ref (55A):	N Feature not hwy or RR
Underclearance (69):	N Not applicable (NBI)

STRUCTURE NOTES

STRUCTURE STAMPED 1958

This structure used to be a state structure named 059B00019N and was converted to a city (Erlanger) structure and is now 059C00071N. 03/03/2017 GTC

INSPECTION NOTES

Inspected by gcady

SCOUR NOTES

See media tab for scour assessment and scour risk assessment for scour analysis. EDV 7/20/2017

LOAD RATING NOTES

12/21/2017 Posting was rescinded based on review of the culvert and location of roadway over structure. Michael Edwards, Nick Reis, and myself visited structure and took measurements to verify location of roadway in relation to the original structure and the extension that contains both a steel an concrete portion. Roadway is located over original structure, which is what the load rating is in relation to. The load rating is controlled by flexure in the bottom slab, at either side of the interior wall Analysis by Kentucky Transportation Center (KTC) under Research Project “FRT 198, Load Rating of Bridge Size Culverts” RTB

11/17/2017 Post at roadway limits due to engineering judgement based on condition of the culvert and consultant load ratings. RTB

COMPLIANCE NOTES

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
240	**Steel Culvert**	**3**	**06/25/2018**	**218.00**	**ft**	**93.00**	**50.00**	**75.00**	**0.00**

Steel Culvert*
Portion of culvert structure that is of Corrugated Metal Pipe design is along center in between concrete sections of structure.
Note that access to enter completely through this portion of structure (CMP) was found to be limited at this time, due to depth of channel, as well as drift debris buildup during time of inspection. Metal pipe section was entered into several feet along both the inlet and outlet ends for inspection review.
Metal culvert pipe section of structure was found to have multiple large areas of bulging conditions (significant amount) at this time, showing poor shape (wavy) randomly throughout. Areas of bulging conditions were found randomly throughout both sides and top of culvert pipe.
Areas of rusting conditions have started to become exposed in random locations throughout interior portion of pipe along stream flow line.
Random areas of splice connection bolts were found showing signs of leaching, which has caused light rusting conditions and dark staining to occur in areas.
Note that jointed connection between concrete culvert and metal culvert is of very poor design, with fill material over concrete portion of structure falling through and draining into metal pipe in area of joint.
(See Photos)

1000	Corrosion	3	06/25/2018	38.00	ft	0.00	0.00	38.00	0.00

Corrosion*
Areas of rusting conditions have started to become exposed in random locations throughout interior portion of pipe along stream flow line.
Random areas of splice connection bolts were found showing signs of leaching, which has caused light rusting conditions and dark staining to occur in areas.
(See Photos)

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
241	**Re Conc Culvert**	**3**	**06/25/2018**	**110.00**	**ft**	**62.00**	**34.00**	**14.00**	**0.00**

Re Conc Culvert*
Portion of culvert structure that is of Reinforced Concrete Double Box design is both the west/left most end and east/right most side of structure. Note that a single box design was used in area of joint between concrete double boxes to round corrugated pipe.
Random areas of both vertical and diagonal cracking conditions were found throughout walls of both barrels #1 and #2, along with areas of construction joints. Most areas of cracks, as well as construction joints were found showing leaching conditions, causing dark damp staining and efflorescence on walls.
Note that varying degrees of settlement was found in single concrete box portion of structure at connection to double box portion. Single box portion is approximately 30.0 feet in length, showing up to approximately 4.0 inches of settlement along connection to double box portion (up to approximately 4.0 inches at connection to barrel #1 and up to approximately 2.0 inches at connection to barrel #2).
Areas of both vertical and diagonal cracking were also found in single barrel portion of structure, with leaching conditions as well.
Deteriorating conditions with some exposed rusting reinforcing steel were found occurring in concrete material in areas of joints in between portions of structure, with opened joint showing moderate to heavy leakage during time of inspection.
(See Photos)

1220	Deterioration (Other)	3	06/25/2018	24.00	ft	0.00	10.00	14.00	0.00

Deterioration (Other)*
Deteriorating conditions with some exposed rusting reinforcing steel were found occurring in concrete material in areas of joints in between portions of structure, with opened joint showing moderate to heavy leakage during time of inspection.
(See Photos)

6000	Scour	3	06/25/2018	14.00	ft	0.00	14.00	0.00	0.00

Scour*
Scouring conditions were found occurring along the outlet end of structure, due to stream energy dispersal actions, which is forming a hole in channel bed at site.
(See Photos)

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
800	**Culv Wingwall**	**3**	**06/25/2018**	**34.00**	**(LF)**	**17.00**	**0.00**	**17.00**	**0.00**

Culv Wingwall*
Concrete wingwall elements of structure are located at the inlet of structure, which were found starting to showing a minor amount of settlement and displacement/misalignment; otherwise element were found to be performing as designed at this time.
Noted displacement starting to occur in wingwalls should remain closely watched during future inspections, only minor at this time.
(See Photos)

4000	Settlement	3	06/25/2018	17.00	(LF)	0.00	0.00	17.00	0.00

Settlement*
Concrete wingwall elements of structure are located at the inlet of structure, which were found starting to showing a minor amount of settlement and displacement/misalignment; otherwise element were found to be performing as designed at this time.

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
801	**Culv Headwall**	**3**	**06/25/2018**	**26.00**	**(LF)**	**26.00**	**0.00**	**0.00**	**0.00**

Culv Headwall*
Concrete headwall element of structure is located on the inlet end of structure only, which was found to be performing as designed at this time.

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
856	**Chan Drift**	**3**	**06/25/2018**	**1.00**	**(EA)**	**0.00**	**0.00**	**0.00**	**1.00**

Chan Drift*
Note that a heavy amount of channel drift debris was found hung on center curtain wall at the inlet of structure, with a heavy amount found hung and built up on center curtain wall at union between downstream end of metal pipe and downstream most double box culvert section.
All channel drift debris found hung or built up at site of structure needs to be removed as soon as possible. Removal of such drift debris buildup will help relieve stream flow and allow stream depth to recede through portions of structure (restriction of stream flow).
(See Photos)

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
858	**Channel Alignment**	**3**	**06/25/2018**	**1.00**	**(EA)**	**0.00**	**1.00**	**0.00**	**0.00**

Channel Alignment*
Note that aggradation debris buildup was found throughout channel bed at the inlet site of structure, along with random areas of buildup found throughout interior portions of barrels (silt, sand, stone, etc.).
(See Photos)

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
859	**Vegetation**	**3**	**06/25/2018**	**1.00**	**(EA)**	**1.00**	**0.00**	**0.00**	**0.00**

Vegetation*
Vegetation growth was found to be hanging over the headwalls

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Approach # 1

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Approach # 2

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Inlet end (right) of structure

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Vegetation growth hanging over
headwalls

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Stream drift hung at the inlet end of
the barrels

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Vertical misalignment/displacement
found occurring in both inlet
wingwall elements.

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Aggredation build up found
throughout the structure

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Light cracking with staining found in
the barrel roofs.

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Random transverse cracking with efflorescence staining found in the barrel roofs

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Jointed union between double box barrel and single box Note leaking conditions, deteriorating material and settlement occurring. Photo taken of joint in barrel #1

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Looking from barrel #1 through transition between box culvert and metal pipe

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Bulging found randomly in the single
barrel pipe portion of the culvert

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View through culvert, note stream drift bulid up at the beginning of the secont section of double barrel culvert, at outlet end of structure.

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Outlet (left) end of structure

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Poured concrete in place at the outlet
end of barrel # 2

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Heavy deterioration at the outlet end
of the structure

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Erosion control in place downstream
from the structure

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Deterioration of outlet center curtain wall

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Veiw through barrel # 2 from outlet

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View through barrel # 1 from outlet

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Pipe cast into wall of barrel # 1 near
outlet end of structure.

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Debris build up in at union of single
barrel to double barrel outlet portion.