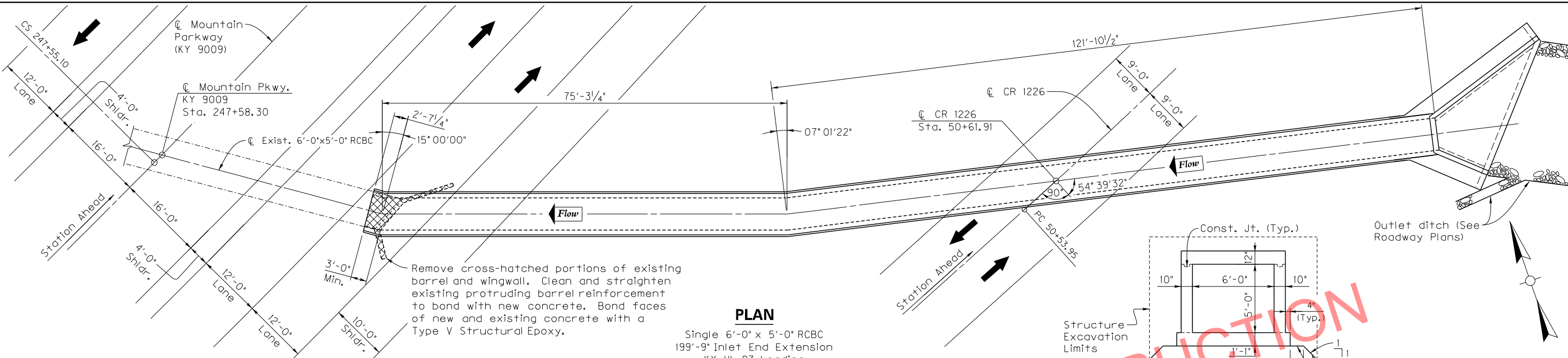
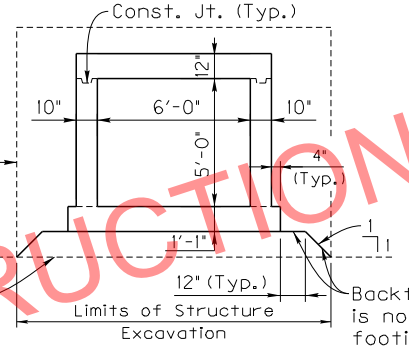


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 USER: dsmithson
 DATE PLOTTED: June 30, 2016
 E-SHEET NAME:
 MicroStation v8.11.9.459



PLAN

Single 6'-0" x 5'-0" RCBC
 199'-9" Inlet End Extension
 KY HL-93 Loading
 54°39'32" Skew LT.
 Variable Fill Slope
 Fill Height 8.7'
 Non-Yielding Foundation



SECTION THROUGH BARREL

ESTIMATE OF QUANTITIES

BID CODE	ITEM	QUANTITY	UNIT
8100	Class "A" Concrete	207	C.Y.
8150	Reinforcement	12349	LB.
8003	Foundation Preparation	1	L.S.
8002	Structure Excavation, (Solid Rock)	6	C.Y.
2223	Granular Embankment	149	C.Y.
2403	Remove Concrete Masonry	3	C.Y.

GENERAL NOTES

SPECIFICATIONS: References to the Specifications are to the 2012 edition of Kentucky Department of Highways Standard Specifications For Road and Bridge Construction including any current Supplemental Specifications. All references to the AASHTO Specifications are to the sixth edition of the AASHTO LRFD Bridge Design Specifications.

DESIGN LOAD: This structure is designed for KY HL-93 live load. The KY HL-93 live load is arrived at by increasing the standard design truck and lane loads by 25%.

CONCRETE: Use Concrete, Class "A" throughout.

DESIGN STESSES:
 FOR CLASS "A" CONCRETE: F'C = 3500 PSI
 FOR STEEL REINFORCEMENT: FY = 60000 PSI

WEIGHT OF FILL MATERIAL: The assumed weight of fill material is 120 PSF.

BEVELED EDGES: Bevel all exposed edges 3/4", unless otherwise noted.

FOOTING PRESSURE: Foundation materials for wing footings are required to resist a maximum bearing pressure of 2,400 psf at the AASHTO Service I limit state.

SAWCUTTING EXISTING CONCRETE: Prior to the removal of the existing concrete masonry, cut the surface with a concrete saw to a depth of one inch to facilitate a neat line. The cost of cutting concrete shall be included in the unit price bid for Remove Concrete Masonry.

EXISTING REINFORCING STEEL: Existing horizontal reinforcing steel in the portion of the barrel to be removed shall be cleaned and straightened in order to bond with new concrete. The cost of cleaning and straightening existing reinforcing steel shall be incidental to the unit price bid for Remove Concrete Masonry.

REINFORCEMENT: Dimensions shown from the face of concrete to bars are to center of bars, unless otherwise shown. Spacing of bars is from center to center of bars. Clear distance to face of concrete is 2", unless otherwise noted.

DIMENSIONS: Dimensions are for a normal temperature of 60 degrees Fahrenheit. Layout dimensions are horizontal dimensions.

BEFORE YOU DIG: The contractor can call 1-800-752-6007 toll free a minimum of 2 business days prior to excavation for information on the location of existing utilities. Also, see utility plans.

TEMPORARY SHORING: Temporary sheeting, shoring, cofferdams, and/or a dewatering method may be required for installation of the culvert and footings. Payment for this work shall be included in the lump sum bid for Foundation Preparation.

CONSTRUCTION JOINTS: If construction joints are required, locate the construction joint in the field. Place the joint perpendicular to the barrel using either couplers, mechanical splices, or lap splices for the E Bars. Ensure couplers or mechanical splices are capable of transferring 125% of the design yield strength of the bar. Include the cost of couplers, mechanical splices, or additional rebar for lap splices in the bid for steel reinforcement. No construction joint in the barrel is to be located within 6 ft. of the end the culvert.

FLOWLINE REINFORCEMENT: Construct the 6-inch paved flowline using #4 steel reinforcement at 18-inch centers in each direction or 6"x6"-D7xD7 deformed welded wire steel fabric. Extend the bars a minimum of 12 inches into wing footings and/or bottom slab. Include the cost of this reinforcement in the bid for Class "A" Concrete.

BONDING TO EXISTING CONCRETE USING STRUCTURAL ADHESIVES: Bond proposed plastic concrete to existing hardened concrete in all locations using a Type V Epoxy Resin or other approved Structural Adhesive as prescribed in section 826 of the specifications. Follow the manufacturer's recommended application instructions. This work and material is incidental to the unit price bid for Class "A" Concrete.

GRANULAR EMBANKMENT: Excavate and replace soil with Granular Embankment within 2 feet below the bottom of the culvert slab. Granular replacement material shall consist of "Granular Embankment," non-erodible only, meeting the material requirements of Section 805 of the Standard Specifications. The maximum size limit for "Granular Embankment" is 4 inches. The excavation for the granular replacement shall extend a minimum width beyond the edges of the footings equal to the replacement depth. The granular replacement shall be placed on a 1H:1V slope or flatter beginning 12" from the base of the footing to the bottom of the excavation. Place Geotextile Fabrics Type IV as a separator between the soil and the granular replacement. The Geotextile Fabric shall be in accordance with Section 214 and 843 of the Standard Specifications for Road and Bridge Construction, current edition.

COMPLETION OF THE STRUCTURE: The Contractor is required to complete the structure in accordance with the plans and specifications. Material, labor or construction operations, not otherwise specified, are to be included in the bid item most appropriate to the work involved. This may include cofferdams, shoring, excavations, backfilling, removal of all or parts of existing structures, phase construction, incidental materials, labor or anything else required to complete the structure.

INDEX OF SHEETS

Sheet No.	Description
S1	Layout & General Notes
S2	Inlet Barrel Details (1 of 2)
S3	Inlet Barrel Details (2 of 2)
S4	Inlet Wing Details
S5	Bill of Reinforcement
S6	Subsurface Data

STANDARD DRAWINGS

BCX-006-10	Stencils for Structures
BCX-012-02	Geotechnical Legend

SPECIFICATIONS

2012 Standard Specifications for Road and Bridge Construction
2012 AASHTO LRFD Bridge Design Specifications, 6th Edition

Plans Prepared By:
H. W. LOCHNER, INC.

Bryan C. Reid, P.E.
 KY. No. 27998

REVISION	DATE	CHECKED BY

DATE: June, 2016
 DESIGNED BY: B. C. REID
 CHECKED BY: W. D. BURTON
 DETAILED BY: D.M. SMITHSON
 B.C. REID

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
WOLF-MORGAN

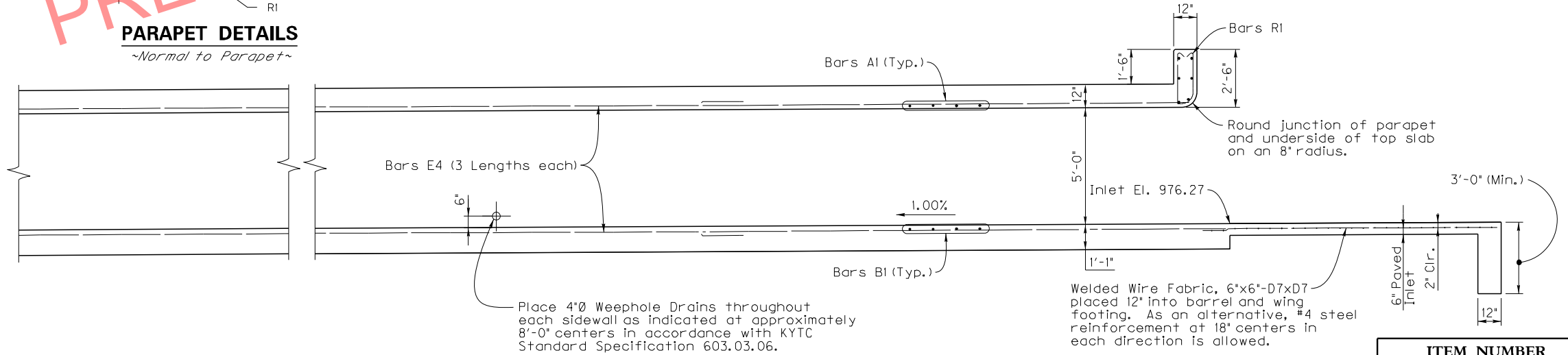
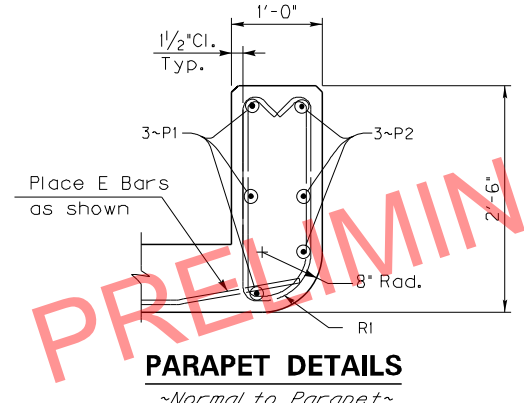
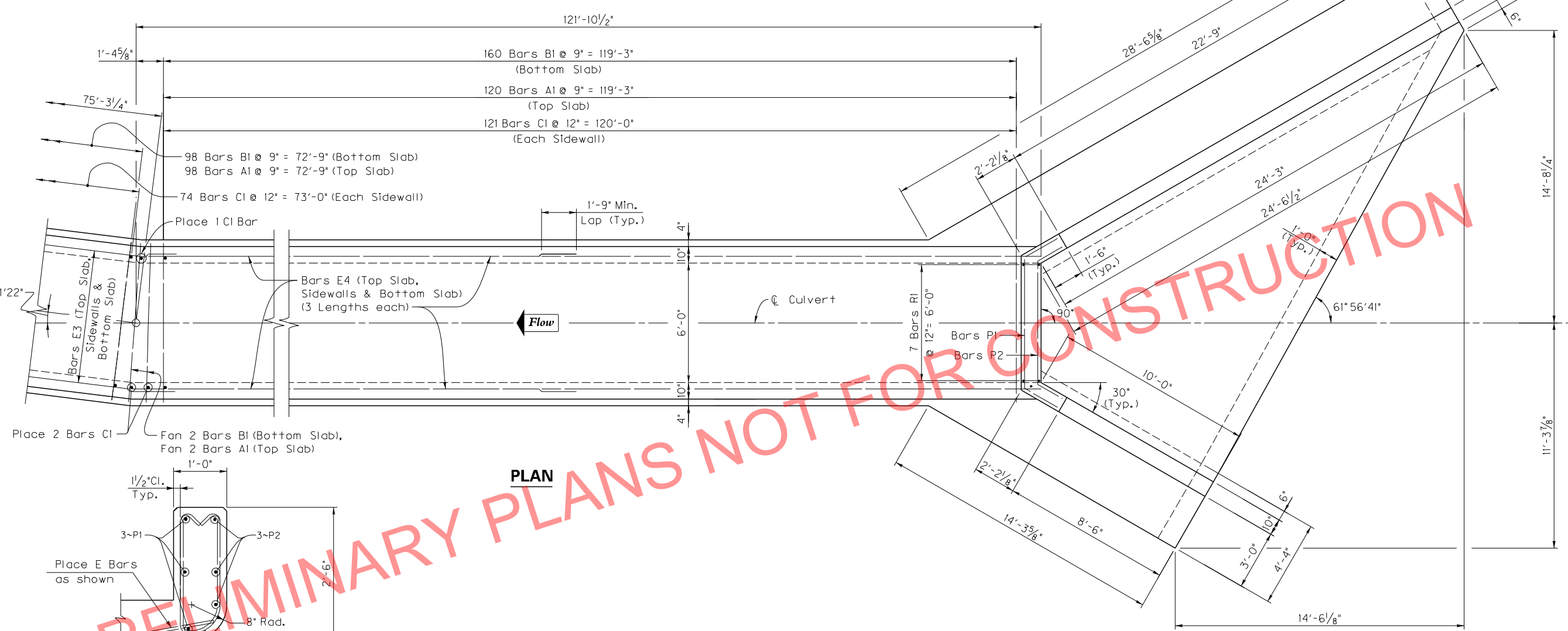
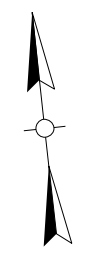
ROUTE CROSSING
CR 1226 STATE ROAD FORK

LAYOUT AND GENERAL NOTES

PREPARED BY
LOCHNER
 H. W. LOCHNER, INC.
 LEXINGTON, KENTUCKY

SHEET NO.
S1
 DRAWING NO.
27086

FILE NAME: I:\LEX\PRJ\000008298\DESIGN\STRUCTURES\FINAL DESIGN\CR1226 CULVERT EXT - 6X5 @ 50+66.DGN\S27086_003.DGN
 USER: dsmithson DATE PLOTTED: June 30, 2016
 E-SHEET NAME: MicroStation v8.11.9.459



SECTION ON C-C

ITEM NUMBER	10-126.70
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REVISION		DATE
DATE: June, 2016	CHECKED BY: W.D. BURTON	
DESIGNED BY: B.C. REID	DETAILED BY: D.M. SMITHSON	
Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS		
WOLF-MORGAN		
ROUTE CR 1226	CROSSING STATE ROAD FORK	
INLET BARREL DETAILS (2 of 2)		
PREPARED BY LOCHNER H.W. LOCHNER, INC. LEXINGTON, KENTUCKY		SHEET NO. S3 DRAWING NO. 27086

FILE NAME: I:\LEX\PRJ\000008298\DESIGN\STRUCTURES\FINAL DESIGN\CR1226 CULVERT EXT - 6x5 @ 50+66\DCNS\27086_005.DGN

USER: dsmithson
DATE PLOTTED: June 30, 2016

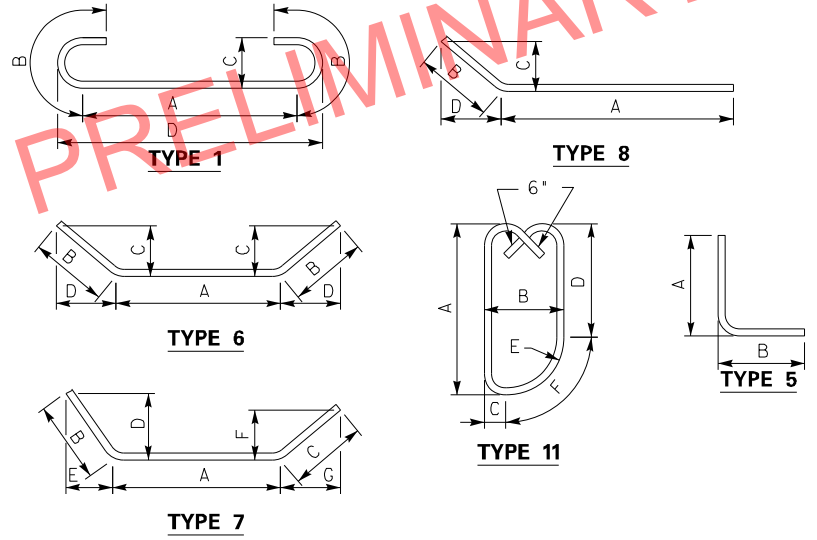
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MicroStation v8.11.9.459

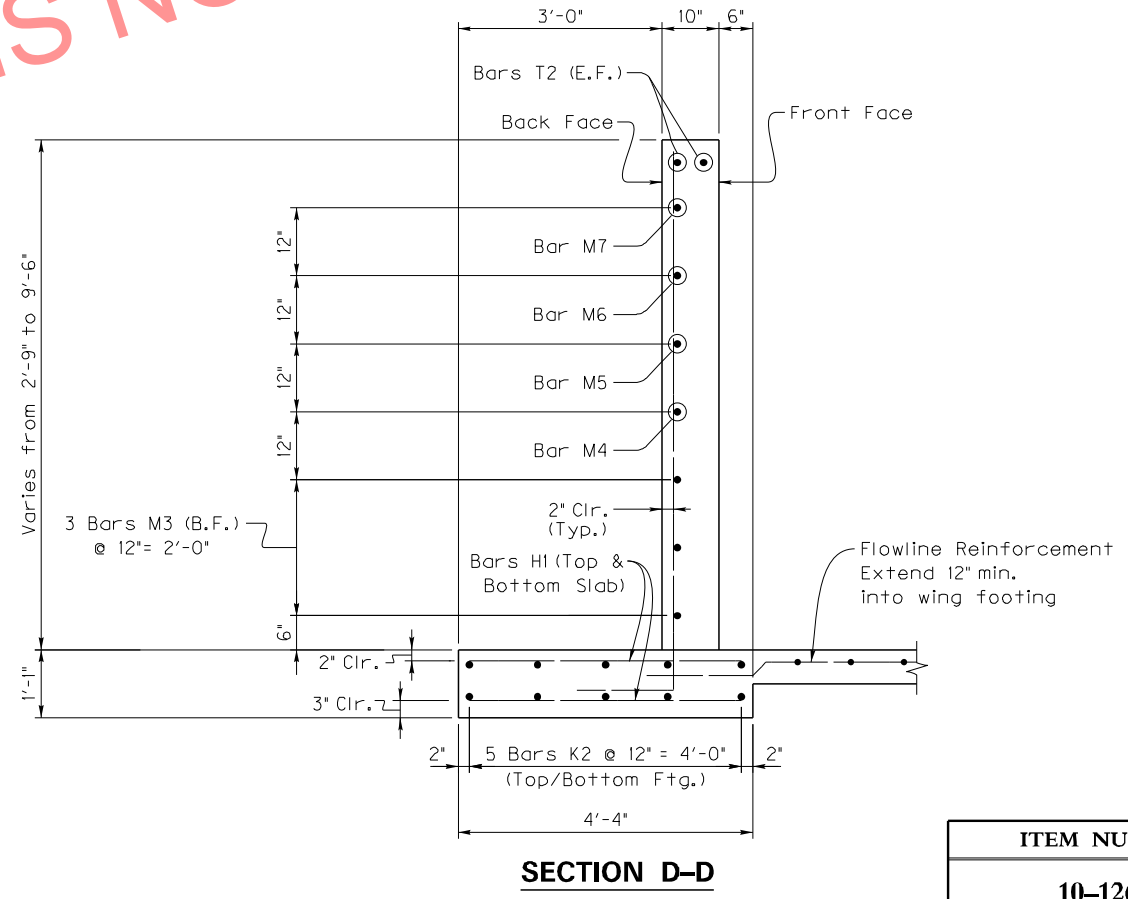
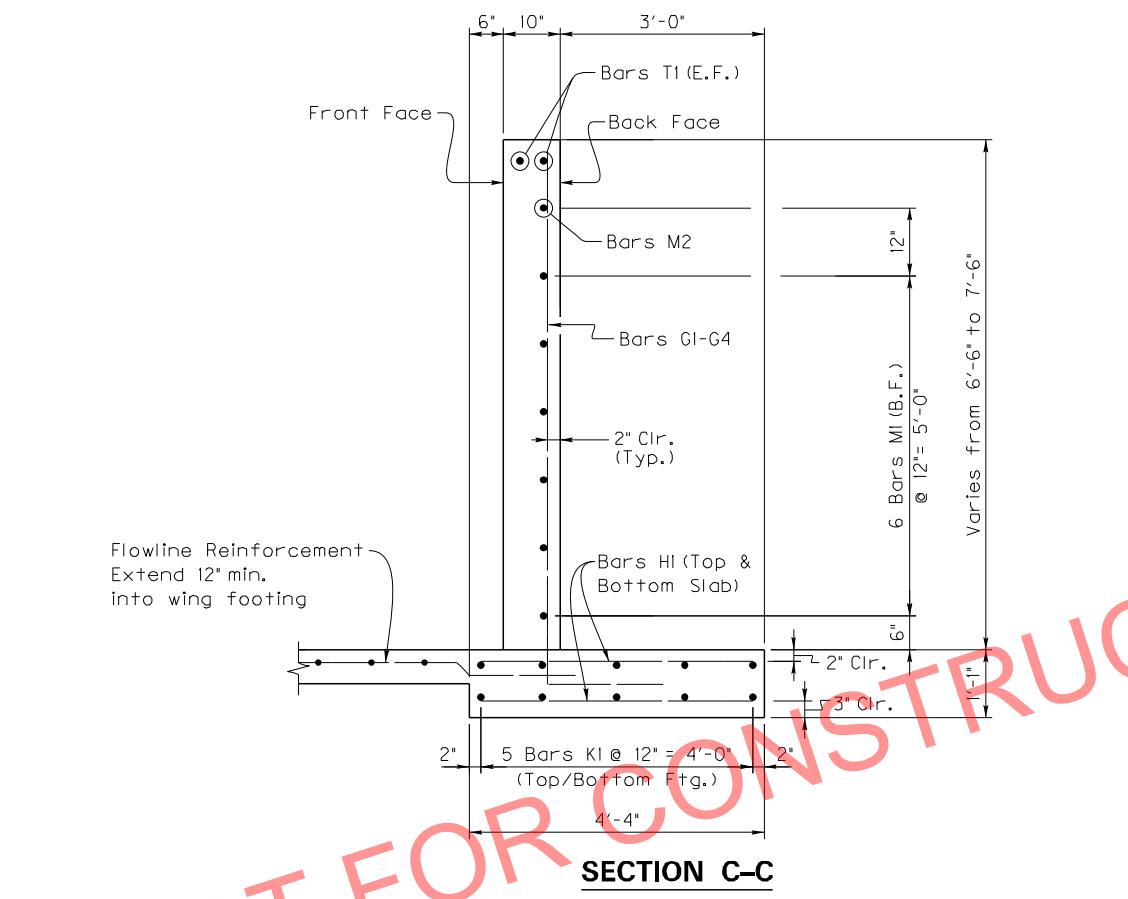
BILL OF REINFORCEMENT

MARK	TYPE	SIZE	NO.	LENGTH FT., IN.	LOCATION	A	B	C	D	E	F	G
						FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.
A1	1	5	261	8-7	Top Slab	6-11	0-10	0-5	7-4			
B1	1	5	261	9-3	Bottom Slab	7-7	0-10	0-5	8-0			
C1	Str.	5	401	6-8	Sidewalls							
E1	Str.	4	24	4-8	Barrel							
E2	Str.	4	24	48-8	Barrel							
E3	Str.	4	24	30-9	Barrel							
E4	Str.	4	72	41-11	Barrel							
G1	5	4	6	7-11	Long Wingwall	7-1	0-10					
G2	5	4	6	8-2	Long Wingwall	7-4	0-10					
G3	5	4	6	8-5	Long Wingwall	7-7	0-10					
G4	5	4	9	8-8	Long Wingwall	7-10	0-10					
G5	5	4	1	4-5	Short Wingwall	3-7	0-10					
G6	5	4	1	4-11	Short Wingwall	4-1	0-10					
G7	5	4	1	5-5	Short Wingwall	4-7	0-10					
G8	5	4	1	5-11	Short Wingwall	5-1	0-10					
G9	5	4	1	6-5	Short Wingwall	5-7	0-10					
G10	5	4	1	6-11	Short Wingwall	6-1	0-10					
G11	5	4	1	7-6	Short Wingwall	6-8	0-10					
G12	5	4	1	8-0	Short Wingwall	7-2	0-10					
G13	5	4	1	8-6	Short Wingwall	7-8	0-10					
G14	5	4	2	9-1	Short Wingwall	8-3	0-10					
H1	Str.	5	92	4-0	Wing Footings							
K1	Str.	5	8	28-5	Wing Footings							
K2	Str.	5	8	14-2	Wing Footings							
M1	8	4	6	26-6	Long Wingwall	24-9	1-9	0-10 1/2	1'-6 7/8			
M2	Str.	4	1	24-2	Long Wingwall							
M3	8	4	3	12-2	Short Wingwall	10-5	1-9	0-10 1/2	1'-6 7/8			
M4	8	4	1	10-10	Short Wingwall	9-1	1-9	0-10 1/2	1'-6 7/8			
M5	8	4	1	9-1	Short Wingwall	7-4	1-9	0-10 1/2	1'-6 7/8			
M6	8	4	1	7-3	Short Wingwall	5-6	1-9	0-10 1/2	1'-6 7/8			
M7	Str.	4	1	2-9	Short Wingwall							
P1	6	6	3	10-4	Parapet	6-6	1-11	1-7 7/8	0-11 1/2			
P2	6	6	3	9-0	Parapet	6-2	1-5	1-2 3/4	0-8 1/2			
R1	11s	5	7	5-11	Parapet	2-3 1/2	0-9	0-2 1/2	1-9	0-6 1/2	0-9 3/4	
T1	8	6	2	23-10	Long Wingwall	22-7	1-3	0-0 3/4	1-4			
T2	8	6	2	10-10	Short Wingwall	9-7	1-3	0-6 7/8	1-0 1/4			

PRELIMINARY PLANS NOT FOR CONSTRUCTION



Note:
1. Reinforcing Bars designated by suffix (s) shall be considered a stirrup for purposes of bend diameter.

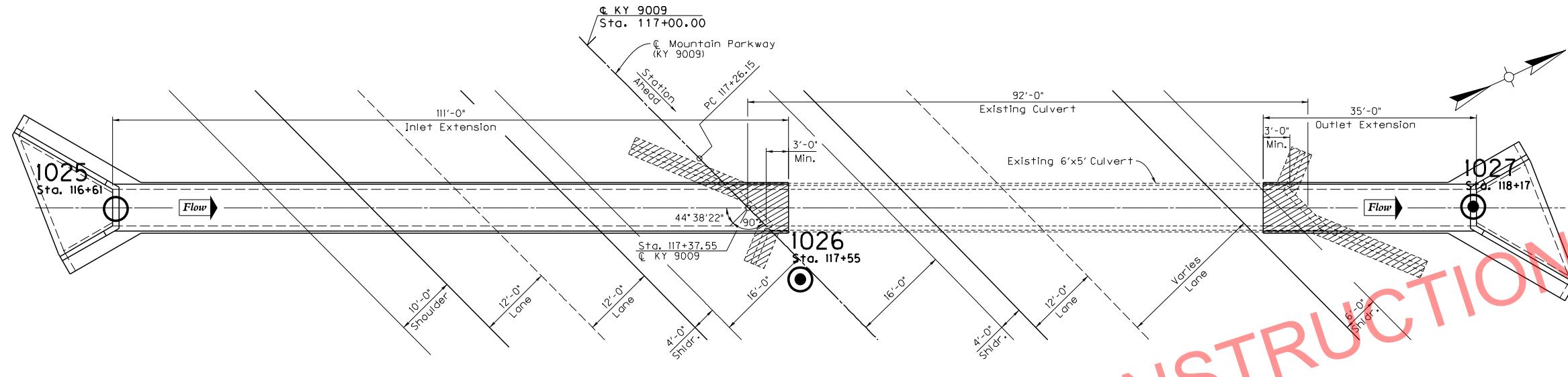


ITEM NUMBER	10-126.70
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REVISION		DATE
DATE: June, 2016	CHECKED BY: W.D. BURTON	
DESIGNED BY: B.C. REID	DETAILED BY: D.M. SMITHSON	
Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS COUNTY WOLF-MORGAN		
ROUTE CR 1226	CROSSING STATE ROAD FORK	
BILL OF REINFORCEMENT PREPARED BY LOCHNER H.W. LOCHNER, INC. LEXINGTON, KENTUCKY		
SHEET NO. S5	DRAWING NO. 27086	

SUBSURFACE DATA

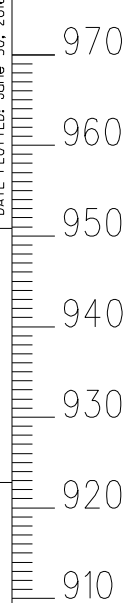
Plan Scale 1" = 20'



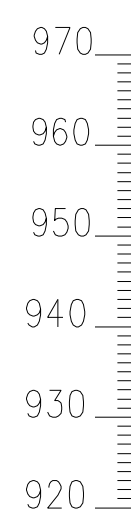
● CORE BORING ○ SOUNDING

PRELIMINARY PLANS NOT FOR CONSTRUCTION

Hole No.
Station
Offset
Elev.
(NAVD 88
datum)



Profile Scale:
Vertical 1" = 10'
Horizontal not to scale



Hole No.	Station	Offset	Elev.	Notes
1025	116+61.00	75.0' Rt.	958.95	
1026	117+55.00	5.0' Rt.	958.86	
1027	118+17.00	80.0' Lt.	952.58	

W%	LI	SDI (JS)	Notes
23		N=3	A-2-4(0), SM, S+C=100(93+7)
22		N=7	
28		N=52/0.70'	
70	REC 100	97 (6)	
93	REC 100		(954.75 - 954.15) Weathered sandstone, silt, mica, light gray tan, planar partings (954.15 - 949.75) Shale, fine grains, mica, dark to light gray, planar partings
Top of rock elev. = 954.75			
Base of weathered rock elev. = 954.15			
15		N=10	A-2-4(0), SC-SM, S+C=100(86+14)
15		N=2	
16		N=R/0.40'	
55	REC 100	84 (3)	
57	REC 97		(952.86 - 951.06) Weathered siltstone, fine grains, mica, light gray to tan, planar partings (951.06 - 950.36) Coal (950.36 - 947.86) Shale, fine grains, light gray to medium gray, planar partings
Top of rock elev. = 952.86			
Base of weathered rock elev. = 950.36			
			R (950.08)

FILE NAME: I:\LEX\PRJ\00008298\DESIGN\STRUCTURES\FINAL DESIGN\CR226 CULVERT EXT - 6x5 @ 50+66.DGN\527086_006.DGN

USER: dsmitthson DATE PLOTTED: June 30, 2016

E-SHEET NAME: MicroStation v8.11.9.459

SHEET 1 OF 1

S-019-2014	
ITEM NUMBER	PREPARED BY
	K.S. WARE & ASSOCIATES, LLC
SHEET NO. S6	
DRAWING NO. 27086	

REVISION		DATE
DATE: June, 2016	CHECKED BY	
DESIGNED BY:		
DETAILED BY: S. ANDREWS	J. GODFREY	
Commonwealth of Kentucky		
DEPARTMENT OF HIGHWAYS		
COUNTY		
WOLFE-MORGAN		
ROUTE	CROSSING	
KY 9009	Culvert Station 117+37.55	
SUBSURFACE DATA		