



INNOVATIVE IDEAS  
EXCEPTIONAL DESIGN  
UNMATCHED CLIENT SERVICE

February 3, 2017

Wendy Greer  
Road Superintendent  
Marshall County  
160 Homer Lucas Lane  
Benton, KY 42025

RE: Sharpe-Calvert City Road Bridge Replacement  
Preliminary Investigation – Single Span Replacement Cost

Dear Ms. Greer,

DLZ has completed the preliminary alternate investigation for the Shar-Cal Bridge Replacement Project. Per coordination with Marshall County, the presented alternate is a single span bridge with 2:1 (H:V) slopes and no grade raise on the existing roadway. There are a few items to note when reviewing the provided information:

- 1 – In an effort to reduce replacement cost, the no grade raise alternate was selected based on the fact that the roadway floods before the bridge in the area adjacent to the railroad.
- 2 – This bridge has historically collected debris at the existing bridge piers. The single span bridge alternate allows for the removal of piers from the stream (removing debris problem) and provides a channel through the bridge location that more closely matches the natural stream characteristics.
- 3 – A hydraulic analysis was performed for both the existing and proposed conditions. The flood elevations for the Little Cypress Creek and the Tennessee River are presented in the plans. As previously discussed, no freeboard is being provided from the Little Cypress Creek high water elevation to bottom of low beam. However, the flood analysis shows that the existing water surface elevation will be unchanged for the proposed alternate compared to the existing conditions.
- 4 – Although the superstructure depth will increase, the waterway opening will be increased.
- 5 – The backwater flood elevation from the Tennessee River will remain unaffected, inundating the bridge.

Below we have provided a line item summary of estimated costs for the proposed bridge replacement. We have broken out the costs into Current Costs and Additional Costs. The current costs are for monies the County has already spent or is currently under contract to spend and the estimated Additional Costs are for items not yet under contract. Due to the preliminary nature of the project, we have included a 20% contingency on the Additional Costs items that are related to construction. We have not noted any utility conflicts to date, but the item remains in the additional costs for estimating purposes.



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Shar-Cal Bridge Replacement  
Preliminary Investigation  
Page 2 of 2

**Current Costs**

Existing Bridge Removal:	\$ 35,000
Hydraulic Analysis:	\$ 9,000
Survey:	\$ 5,416
Geotechnical Exploration:	\$ 6,000
<u>Preliminary Engineering:</u>	<u>\$ 8,600</u>
Current Costs Total:	\$ 64,016

**Additional Costs**

96' Single-Span Box Beam Bridge:	\$465,000
Approach Roadway:	\$ 30,000
Construction Administration/Observation:	\$ 25,000
Mobilization/Demobilization:	\$ 12,500
Right of Way:	\$ 20,000
Utilities Relocation:	\$ 25,000
<u>Final Engineering:</u>	<u>\$ 75,000</u>
Total Additional Costs:	\$652,500

Total Estimated Replacement Costs:  $\$64,016 + \$652,500 = \$716,516$

After you have had a chance to review, we would like to discuss the proposed replacement structure with you. If you have any questions or require any additional information before that time, please feel free to contact our office.

We appreciate the opportunity to perform this service for you.

Sincerely,

A. Shea Porter, P.E.  
Project Manager

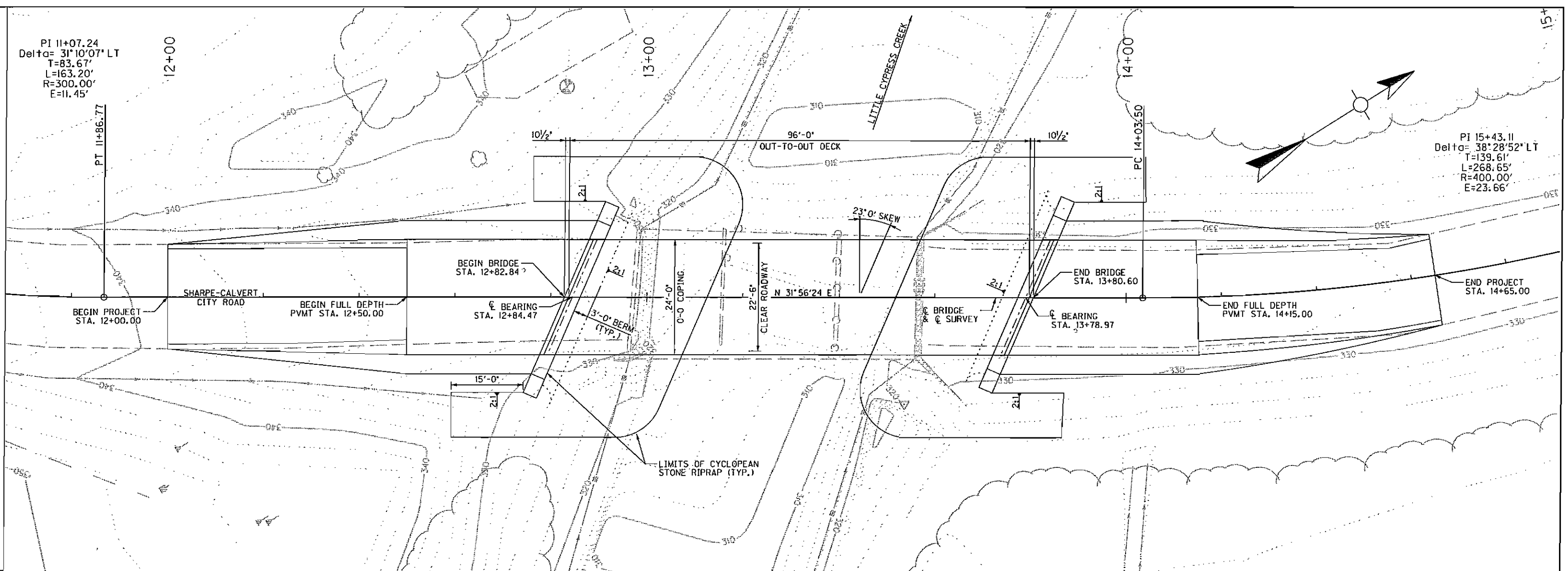
Enclosures (2): Bridge Plan and Elevation, Bridge Typical Section

CC: Shawn Miller (DLZ)  
File

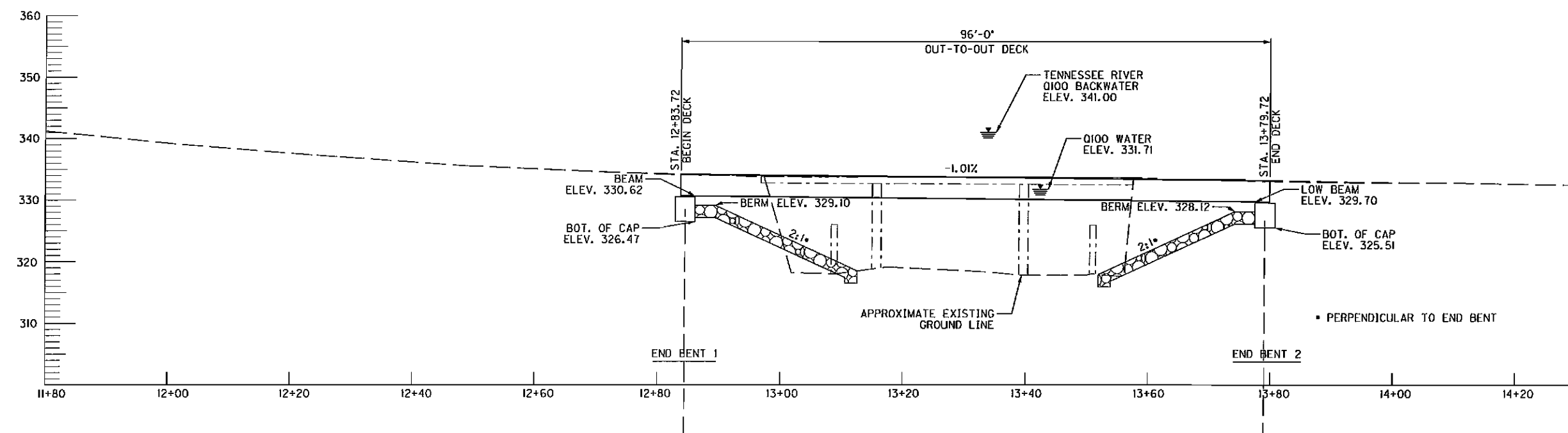
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 USER: lboller  
 DATE PLOTTED: January 1, 2001  
 E-SHEET NAME:  
 MicroStation v8.11.7.443

PI 11+07.24  
 Delta= 31°10'07" LT  
 T=83.67'  
 L=163.20'  
 R=300.00'  
 E=11.45'

PI 15+43.11  
 Delta= 38°28'52" LT  
 T=139.61'  
 L=268.65'  
 R=400.00'  
 E=23.66'



**BRIDGE PLAN**

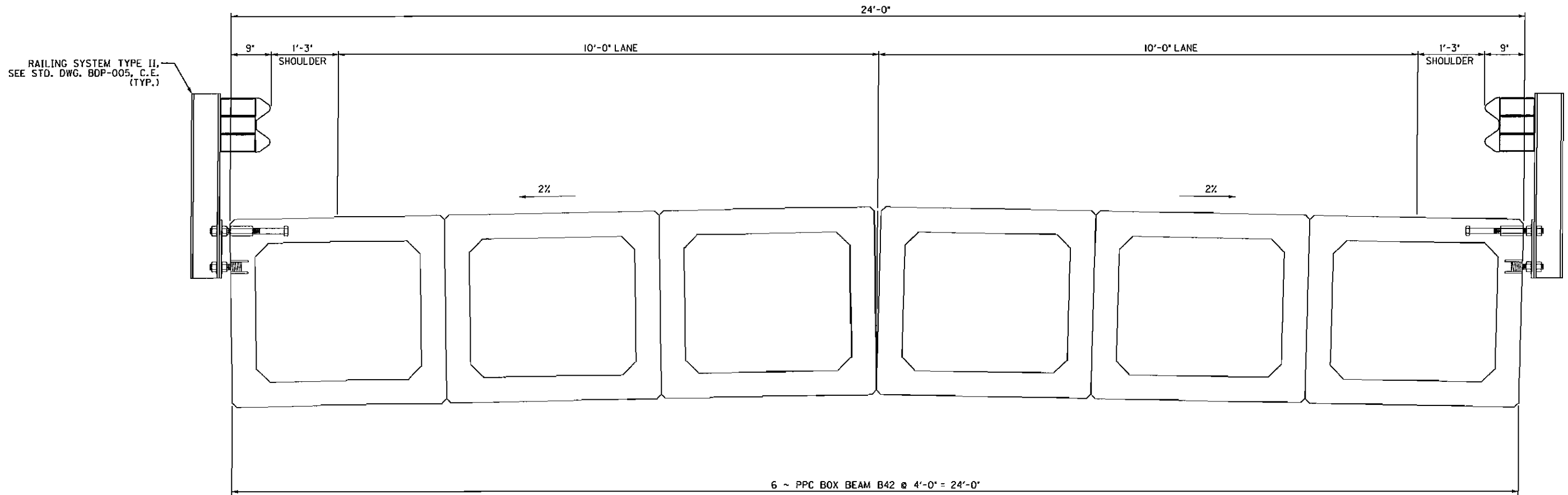


**BRIDGE ELEVATION**

REVISION		DATE
<b>MARSHALL COUNTY FISCAL COURT</b>		
COUNTY <b>MARSHALL</b>		
ROUTE <b>CR 1392</b>	CROSSING <b>LITTLE CYPRESS CREEK</b>	
<b>PLAN AND ELEVATION</b>		
PREPARED BY <b>DLZ</b> KENTUCKY, INC.	201 BRIGHTON PARK BLVD. FRANKFORT, KENTUCKY 40602 (502) 655-2300	SHEET NO. DRAWING NO.

ITEM NUMBER

FILE NAME: M:\PROJ\631\0082 SHAR-CAL ROAD BRIDGE REPLACEMENT\CONTRACT PLANS AND PROPOSAL\STRUCTURE\SHEET\BORDER.DGN  
 USER: Isobler  
 DATE PLOTTED: January 1, 2001  
 E-SHEET NAME:  
 MicroStation v8.1i.7.443



**TYPICAL SECTION**

REVISION		DATE
DATE: EEB, 2017	CHECKED BY	
DESIGNED BY: L.N. BOLLER	A.S. PORTER	
DETAILED BY: J.D. AGLER	L.N. BOLLER	
<b>MARSHALL COUNTY FISCAL COURT</b>		
COUNTY		
<b>MARSHALL</b>		
ROUTE	CROSSING	
CR 1392	LITTLE CYPRESS CREEK	
<b>TYPICAL SECTION</b>		
ITEM NUMBER	PREPARED BY	SHEET NO.
	DLZ 201 BRIGHTON PARK BLVD. FRANKFORT, KENTUCKY 40602 5021 535-2300	
	KENTUCKY, INC.	DRAWING NO.