

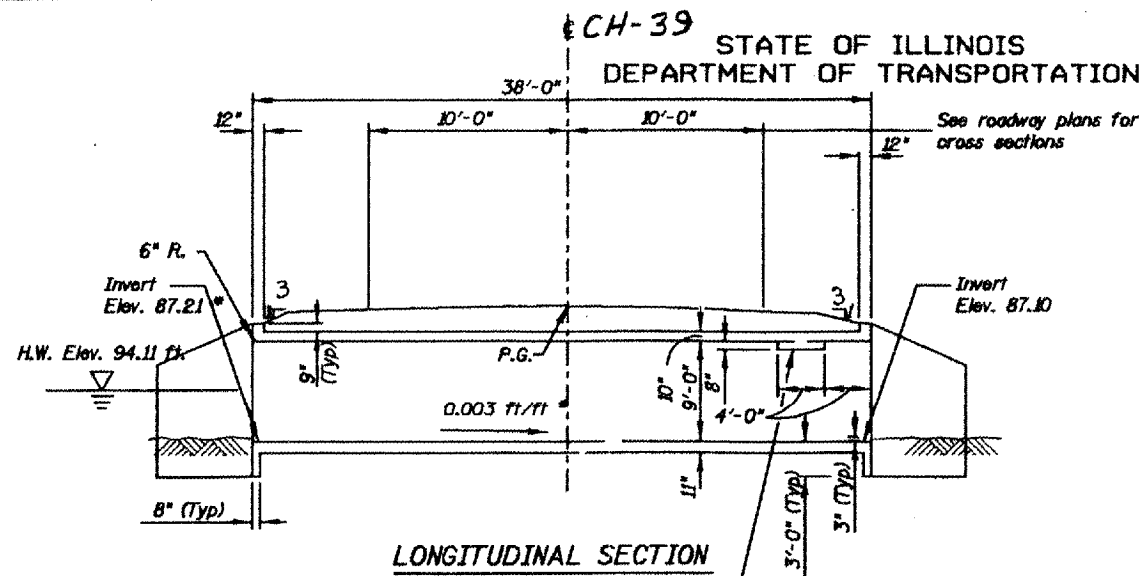
**BENCHMARK**

B.M. - Spike in PP, Station 6+06 Lt. Elevation 100.00 ft

**EXISTING STRUCTURE**

A twin 12' X 9' reinforced concrete box culvert, with headwalls and wingwalls to be removed.

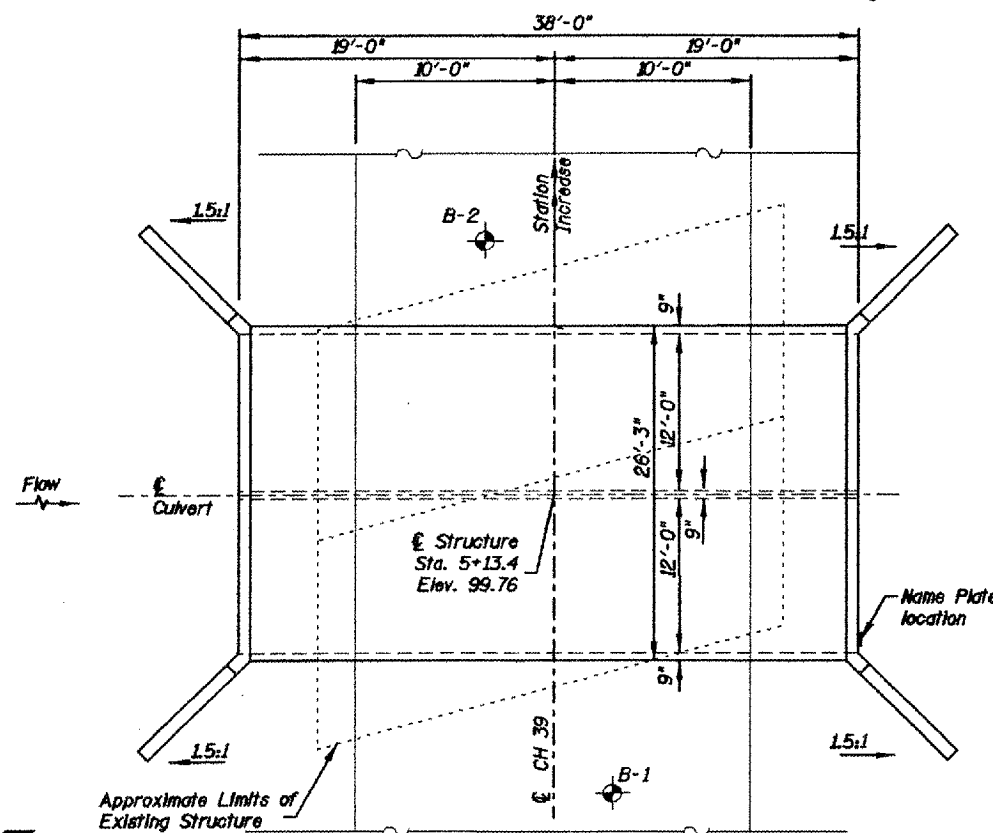
No salvage



**LONGITUDINAL SECTION**

\* Field verify

1" Notch each side of interior wall for Phoebe Bird nesting site.



**PLAN**

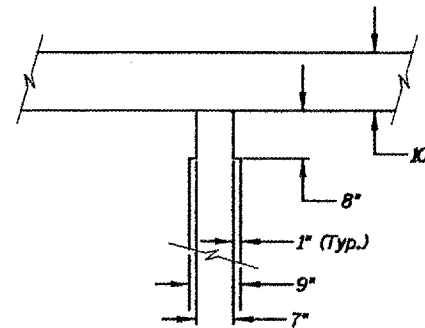
**WATERWAY INFORMATION**

Drainage Area = 3.70 sq. mi. Low Grade Elev. 96.1 ft @ Sta. 5+13.4									
Flood	Freq. Yr.	Q of s	Opening ft <sup>2</sup>		Nat. H.W.E. ft	Head - ft		Headwater Elev. - ft	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	20		166	168					94.11
Base									
Overtopping									
Max. Calc.									

TRIBUTARY OF SPOON RIVER  
BUILT 2005 BY  
KNOX COUNTY  
SEC. 05-00142-00-BR  
STATION 5+13.4  
STR. NO.048-3343 LOADING HS20

**NAME PLATE**

See Std. 515001



**PHOEBE NESTING SITE DETAIL**

(At downstream end only)

Note: Notch formed by rough-finished board attached to and removed with formwork.

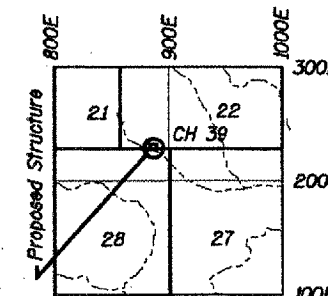
**DESIGN SPECIFICATIONS**

AASHTO SEVENTEENTH EDITION

LOADING HS 20-44

**DESIGN STRESSES**

FIELD UNITS  
f<sub>c</sub> = 3,500 psi  
f<sub>y</sub> = 60,000 psi (Reinf.)



**LOCATION SKETCH**

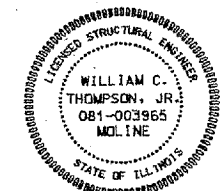
**TOTAL BILL OF MATERIAL**

ITEM	UNIT	TOTAL
Removal of Existing Structures	Each	1.0
Concrete Box Culverts	cu.yd.	112.8
Reinforcement Bars	pounds	24,370
Name Plates	Each	1.0
Stone Dumped Riprap	Ton	40.0
Aggregate Surface Course B	Ton	100.0
Mobilization	L.Sum	1.0
Perimeter Erosion Barrier	Foot	330.0

**GENERAL NOTES:**

- 1.) A distance of half the length of the wingwall but not less than 6'-6" of barrel shall be poured monolithically with the reinforced concrete wing walls.
- 2.) Reinforcement bars shall conform to the requirements of AASHTO M-31, M-42 or M-53 Grade 60.
- 3.) Exposed edges shall have standard 3/4" chamfer.
- 4.) The Contractor shall excavate behind the existing abutment before removing the Superstructure.

I certify that to the best of knowledge, information and belief, this bridge/box culvert design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the current AASHTO Standard Specifications for Highway Bridges.



Signed William Thompson 11/20/06  
Date 3/2/2007  
L. License No. 081-003965 Expires

**GENERAL PLAN**  
CH39 OVER  
TRIBUTARY OF THE SPOON RIVER  
SEC. 05-00142-00-BR  
KNOX COUNTY  
STATION 5+13.4 STRUCTURE NO. 048-3343



DESIGNED	D. FENDER
CHECKED	W. THOMPSON
DRAWN	D. FENDER
CHECKED	W. THOMPSON

DATE: 1-13-06