

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

Bench Mark #215: Square cut in center of headwall on existing structure, Sta. 91+00 @ 22.5' LT, Elev. 394.112

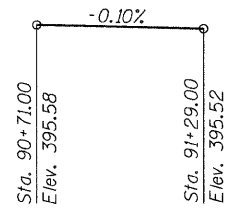
Existing Structure: S.N. 028-2003 was built in 1922 under S.B.I. Route 37, Section 12A, and widened in 1960 under F.A. Route 37, Section 12-2RS. The structure is a 2-barrel 12'x8' cast in place reinforced concrete box culvert with cantilever L-type wingwalls with zero skew. The barrel length is 45'-10" and the width is 26'-6". Structure is to be completely replaced with a 2-barrel 12'x9' reinforced concrete box culvert. Traffic to be maintained utilizing stage construction.

No Salvage.

Precast culvert alternate is not allowed.

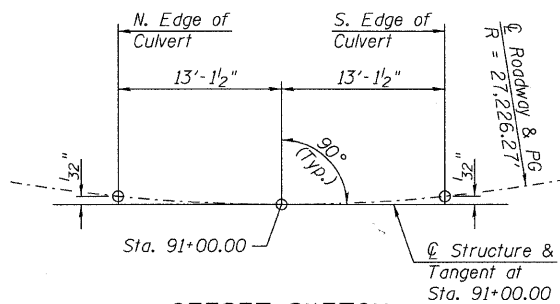
CURVE DATA

$\Delta = 1^\circ 32' 42''$ (LT)
 $D = 0^\circ 12' 38''$
 $T = 367.13'$
 $L = 734.21'$
 $E = 2.48'$
 $R = 27,226.27'$
 $S.E. = \text{None}$
 $P.C. = \text{Sta. } 86+84.99$
 $P.T. = \text{Sta. } 94+19.21$
 $P.I. = \text{Sta. } 90+52.12$



PROFILE GRADE

(Along CL IL Rt. 37)



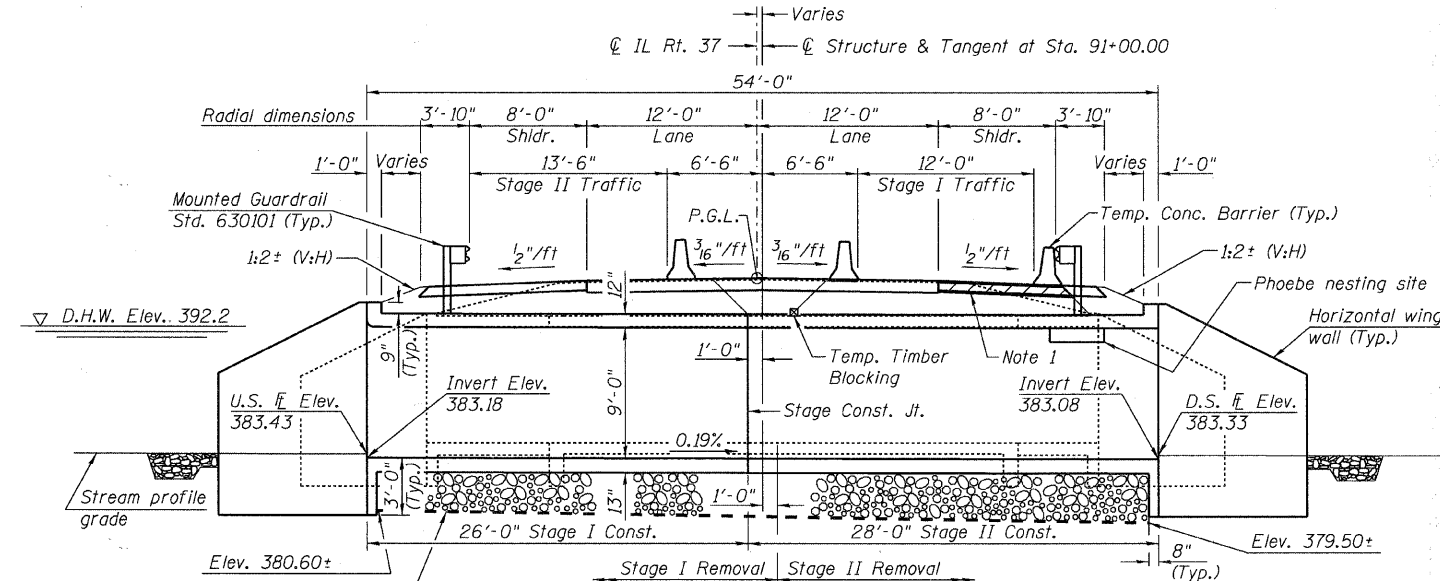
OFFSET SKETCH

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	U.S. Invert	D.S. Invert
	380.18	380.08

DESIGNED	AMS
CHECKED	JMH
DRAWN	AEC
CHECKED	JMH

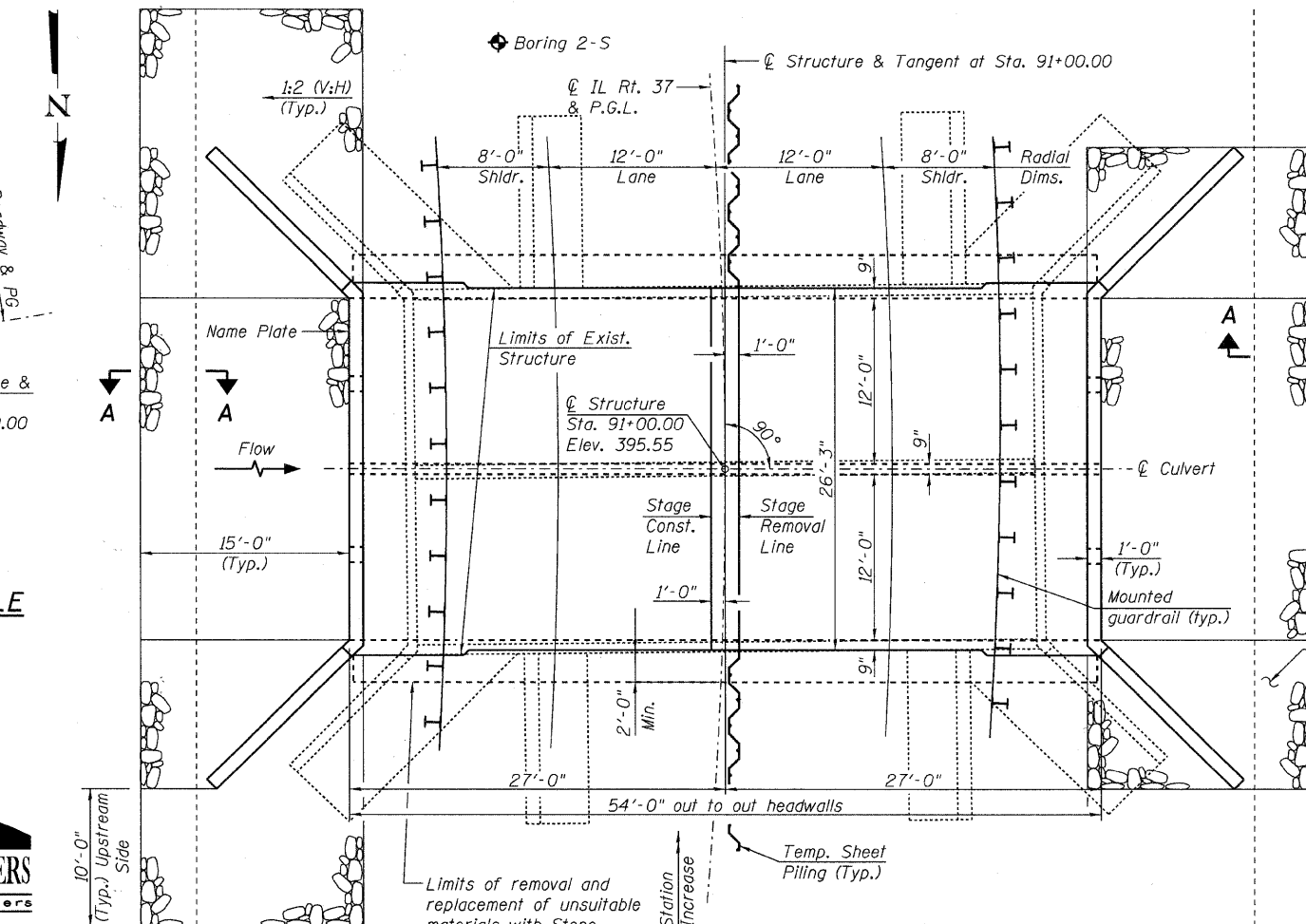
09/25/09



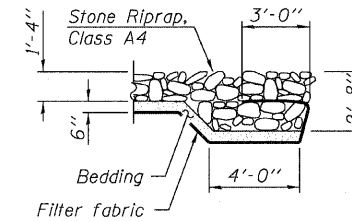
LONGITUDINAL SECTION

(Dimensions at Rt. L's to local tangent, unless otherwise noted) (Looking South)

Note 1: Hatched area indicates bituminous widening prior to Stage I Traffic.



PLAN



SECTION A-A

INDEX OF SHEETS

- 1 General Plan
- 2 General Structure Data
- 3 Stage Construction Details
- 4 Temporary Concrete Barrier For Stage Construction
- 5 Culvert Details
- 6 Bar Splicer Assembly Details
- 7-8 Boring Logs

STATION 91+00.00
 BUILT 20__ BY
 STATE OF ILLINOIS
 F.A.U. RT. 9481 SEC. 12B-1
 LOADING HS20-44
 STRUCTURE NO. 028-2017

NAME PLATE

See Std. 515001

**** WATERWAY INFORMATION**

		Exist. Low Grade Elev. 394.01 @ Sta. 368+00		Prop. Low Grade Elev. 394.11 @ Sta. 368+00						
Drainage Area = 33 sq. mi.										
Flood	Freq. Yr.	Q C.F.S. Exist.	Q C.F.S. Prop.	Opening Exist. Sq. Ft.	Opening Prop. Sq. Ft.	Nat. H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist. Prop.	
Design	Main Structure	2266	2348	533.5	677.1	391.3	0.8	0.4	392.1	391.7
	Overflow	894	812	164.2	188.9					
	Total	3160	3160	697.7	866.0					
Base	Main Structure	3406	3443	639.7	800.6	392.2	1.0	0.5	393.2	392.7
	Overflow	1124	1087	185.8	210.5					
	Total	4530	4530	825.5	1011.1					
Over-topping	Main Structure	3939	3985	687.0	856.0	392.6	1.2	0.6	393.8	393.2
	Overflow	1161	1115	192.0	216.0					
	Total	5100	5100	879.0	1072.0					
Over-topping	Main Structure	5204	5236	769.9	953.8	393.3	1.3	0.8	394.6	394.1
	Overflow	1216	1184	192.0	216.0					
	Total	6420	6420	961.9	1169.8					

Existing 10 yr. velocity = 4.3 ft/s Proposed 10 yr. velocity = 3.5 ft/s

**Main structure is SN 028-0078, Overflow structure is SN 028-1017

LOADING HS20-44

Allow 50#/#sq. ft. for future wearing surface.

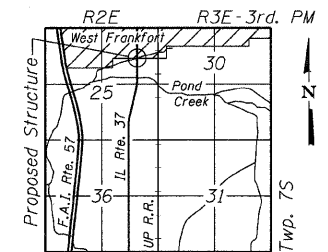
DESIGN SPECIFICATIONS

2002 AASHTO

DESIGN STRESSES

FIELD UNITS

$f'_c = 3,500$ psi
 $f_y = 60,000$ psi (Reinforcement)



LOCATION SKETCH



APPROVED FOR STRUCTURAL ADEQUACY ONLY

Ralph E. Anderson (TSS) ENGINEER OF BRIDGES AND STRUCTURES

David W. Petermeier, 9/25/09
 DAVID W. PETERMEIER
 EDWARDSVILLE, ILLINOIS
 ILLINOIS LICENSED STRUCTURAL
 ENGINEER NO. 081-005642
 EXPIRES NOV. 30, 2010

GENERAL PLAN
ILLINOIS ROUTE 37
OVER TRIBUTARY TO POND CREEK
F.A.U. ROUTE 9481 SEC. 12B-1
FRANKLIN COUNTY
STATION 91+00.00
SN 028-2017

SHEET NO. /	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
8 SHEETS	9481	12B-1	FRANKLIN	304	119
SN 028-2017			CONTRACT NO. 98823		
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT					