

TBM 04/28/08B - RR spike in West face of twin 12" Oak tree, 18.4' Rt. of Sta. 6+46.8 - Elev. 477.84

TBM 04/28/08C - RR spike in West face of 36" tree, 19.7' Rt. of Sta. 9+17.0 - Elev. 469.80

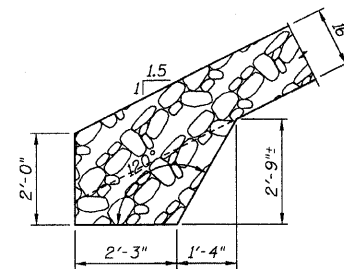
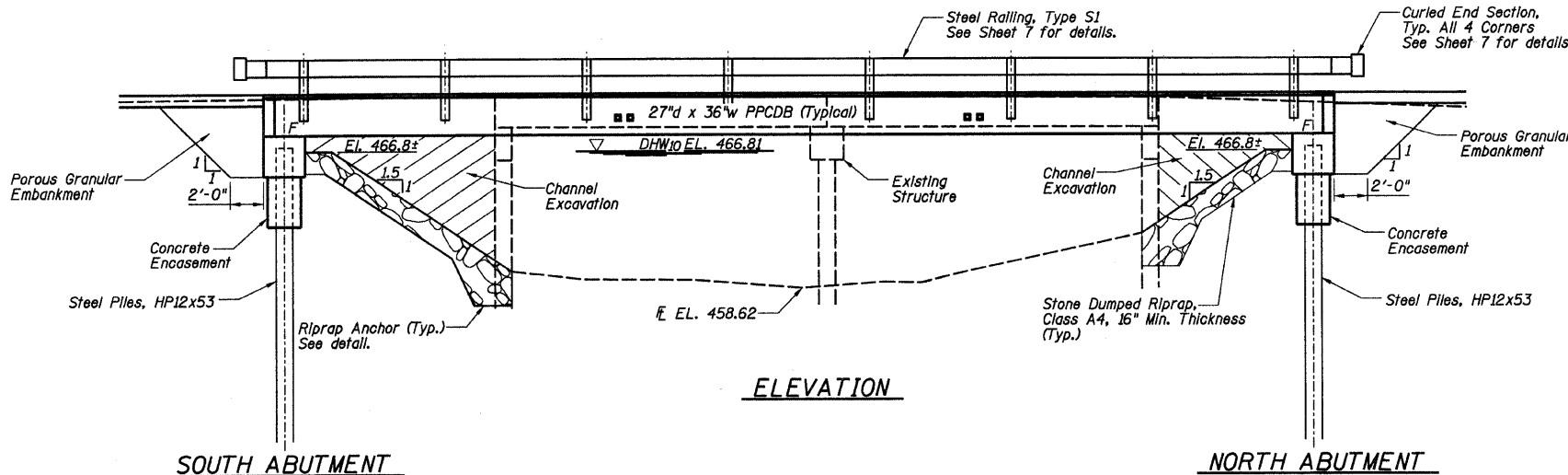
TBM 04/28/08D - RR spike in West face of 30" Locust tree, 35.8' Rt. of Sta. 10+83.1 - Elev. 467.19

Existing Structure: Two-span bridge with precast concrete deck slabs on closed timber abutments and timber pile bent pier with concrete caps, 40' Bk. to Bk. abutments, 20' Out to Out of deck. Existing S.N. 026-3271. To be removed. See Special Provisions.

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 140	07-11120-00-BR	FAYETTE	10	4
ILLINOIS				

**BILL OF MATERIALS (BRIDGE ONLY)**

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu Yd	-	168	168
Porous Granular Embankment	Ton	-	68	68
Stone Dumped Riprap, Class A4	Ton	-	92	92
Removal of Existing Structures	Each	-	-	1
Concrete Structures	Cu Yd	-	17.6	17.6
Concrete Encasement	Cu Yd	-	2.8	2.8
PPCDB (27" Depth)	Sq Ft	1512	-	1512
Reinforcement Bars	Pound	-	3040	3040
Steel Railing, Type S1	Foot	128	-	128
Furnishing Steel Piles HP12x53	Foot	-	434	434
Driving Piles	Foot	-	434	434
Test Pile Steel HP12x53	Each	-	1	1
Name Plates	Each	-	1	1



**GENERAL NOTES**

See Section 502 of the Standard Specifications for Structural Excavation.

Layout of slope protection system may be varied in the field to suit ground conditions as directed by the Engineer.

Channel excavation shall be excavated as shown within the limits of the proposed bridge, then tapered to the existing channel at the ROW line. If the Engineer deems the material satisfactory, it may be used to construct the roadway embankment.

See Specifications for Soil Borings.

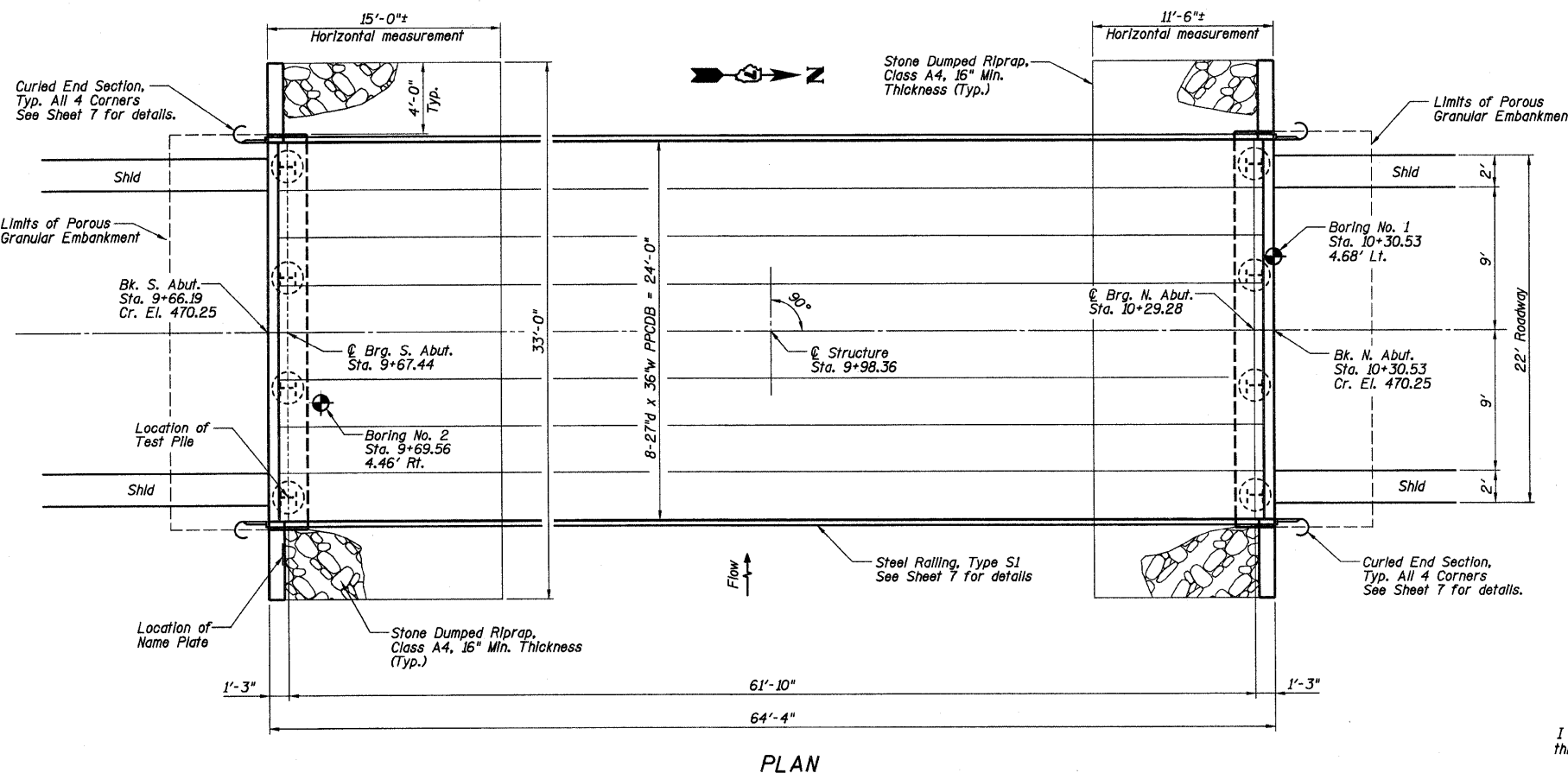
Do not scale these drawings.

The Steel H-piles shall be according to AASHTO M270 Grade 50.

The Contractor shall drive one (1) Steel HP12x53 Test Pile in a permanent location at the South abutment as directed by the Engineer before ordering the remainder of the piles.

The Test Pile shall be driven to 110 percent of the Nominal Required Bearing indicated in the pile data information.

The abutment bearing seat surfaces for the precast prestressed concrete deck beams shall be adjusted by shimming to assure firm and even bearing. As required, 1/2" fabric adjusting shims of the dimensions of the Exterior Bearing Pad shall be provided for each bearing.



**BEAR CREEK  
BUILT 20 BY  
FAYETTE COUNTY  
SEC. 07-11120-00-BR  
LOADING HL-93  
STRUCTURE NO. 026-3444**

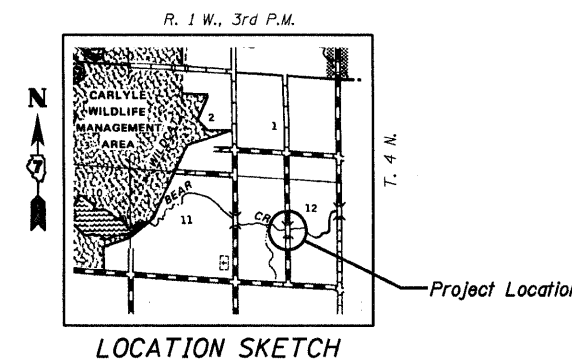
**NAME PLATE**

(See State Standard 515001 for details)

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



Gary L. Hahn  
Centralia, Illinois  
Illinois Licensed Structural  
Engineer No. 81-4853  
Expires Nov. 30, 2010



**WATERWAY DATA**

Drainage Area = 3.232 Sq. Mi. Low Grade Elev. 467.25 @ Sta. 11+00										
Flood Yr.	Freq.	Q C.F.S.	Opening Sq. Ft.		Natural		Head - Ft.		Headwater El.	
			Exist.	Prop.	Exist.	Prop.	Exist.	Prop.	Exist.	Prop.
Design	10	1040	269	334	466.81	0.10	0.05	466.91	466.86	
Base	100	2000	309	394	467.94	1.09	0.39	469.03	468.33	
Max. Calc.	500	2750	321	394	468.55	1.60	0.96	470.15	469.51	

**DESIGN STRESSES**

**FIELD UNITS**

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

**PRECAST PRESTRESSED UNITS**

$f'_c = 6,000$  psi  
 $f'_{ci} = 5,000$  psi  
 $f_{pu} = 270,000$  psi (1/2"  $\phi$  low lax. strands)  
 $f_{pbt} = 201,960$  psi (1/2"  $\phi$  low lax. strands)  
 $f_y = 60,000$  psi (reinforcement)

**DESIGN SPECIFICATIONS**

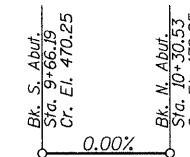
2007 AASHTO LRFD with all applicable Interims

**LOADING HL-93**

25#/sq. ft. included in dead load for future wearing surface.

**PROFILE GRADE**

Along @ Roadway



**GENERAL PLAN AND ELEVATION  
PROPOSED BRIDGE OVER  
BEAR CREEK  
TR 140  
SECTION 07-11120-00-BR  
FAYETTE COUNTY, ILLINOIS**