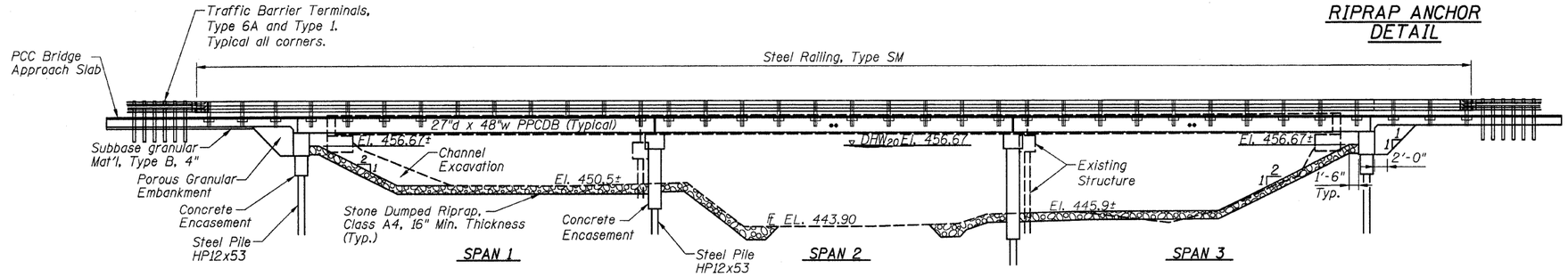
TBM #1 - RR spike in power pole
41.75' Rt., Sta. 128+29.55 - Elev. 454.33

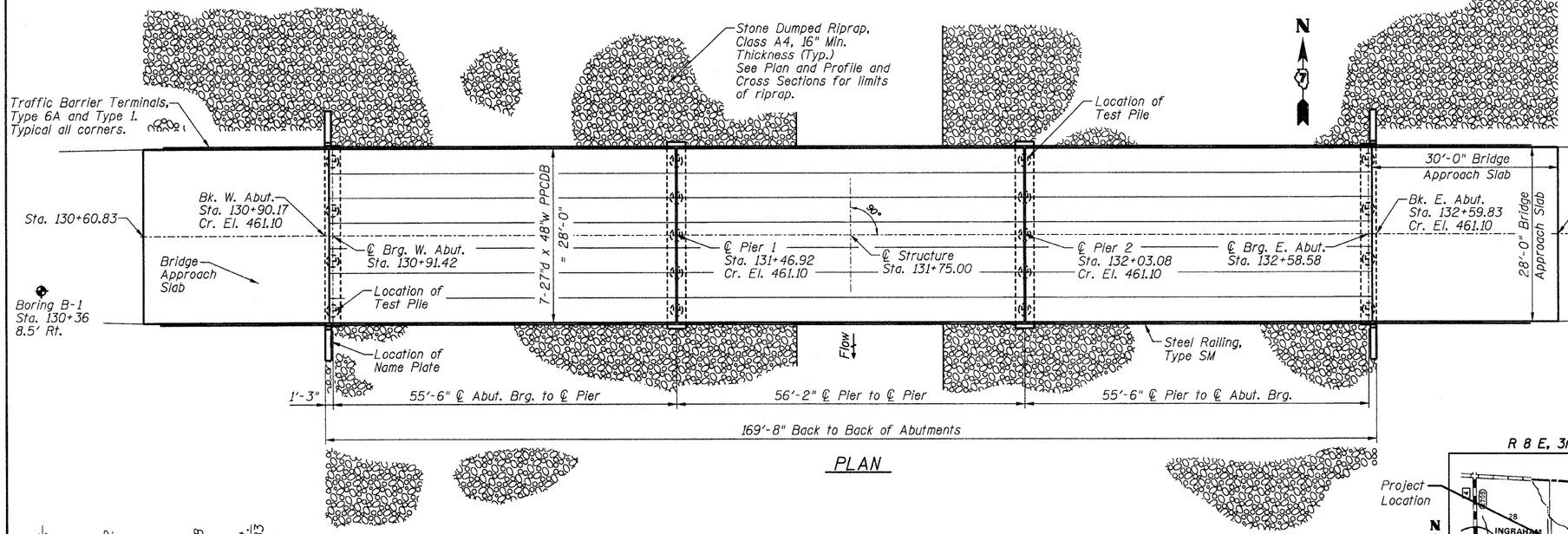
TBM #2 - RR spike in 30"ϕ Maple tree
72.33' Rt., Sta. 132+72.33 - Elev. 456.17

TBM #3 - RR spike in power pole
42.55' Rt., Sta. 134+54.77- Elev. 454.57

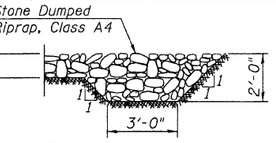
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



ELEVATION



PLAN



RIPRAP ANCHOR DETAIL

Existing Structure: Three span cast-in-place concrete bridge deck on steel beams supported on spill-thru abutments and pile bent piers. 159' L. x 26' W. No Skew. No salvage. Existing Structure No. 013-3014. See Special Provisions.

BILL OF MATERIALS (BRIDGE ONLY)

ITEM	UNIT	SUB	SUPER	TOTAL
CHANNEL EXCAVATION	CU YD	102	-	102
POROUS GRANULAR EMBANKMENT	TON	80	-	80
STONE DUMPED RIPRAP, CLASS A4	TON	1325	-	1325
REMOVAL OF EXISTING STRUCTURES	EACH	-	-	1
CONCRETE STRUCTURES	CU YD	41.4	-	41.4
CONCRETE SUPERSTRUCTURE	CU YD	-	81.2	81.2
CONCRETE ENCASEMENT	CU YD	18.8	-	18.8
PPC DECK BEAMS (27" DEPTH)	SQ FT	-	4704	4704
REINFORCEMENT BARS	POUND	5220	-	5220
REINFORCEMENT BARS, EPOXY COATED	POUND	-	18,380	18,380
STEEL RAILING, TYPE SM	FOOT	-	400	400
FURNISHING STEEL PILES HP 12x53	FOOT	480	-	480
DRIVING PILES	FOOT	480	-	480
TEST PILE STEEL HP 12X53	EACH	2	-	2
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 a Steel HP12x53 Test Pile in a production location at the West Abutment and Pier 2 as directed by the Engineer before ordering the remainder of the piles.

See Sheet 6 of 14 for Precast Prestressed Concrete Deck Beam Corrosion Inhibitor requirements.

The abutment and pier bearing seat surfaces for the precast prestressed concrete deck beams shall be adjusted by shimming to assure firm and even bearing. As required, ⅛" fabric adjusting shims of the dimensions of the Exterior Bearing Pad shall be provided for each bearing.

Bk. West Abut. Sta. 130+90.17 Cr. El. 461.10	℄ Pier 1 Sta. 131+46.92 Cr. El. 461.10	℄ Pier 2 Sta. 132+03.08 Cr. El. 461.10	Bk. East Abut. Sta. 132+59.83 Cr. El. 461.10
0.00%	0.00%	0.00%	
Span 1	Span 2	Span 3	

GRADE ON STRUCTURE

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 ($\frac{1}{2}$" ϕ low lax. strands)
f_{pbt} = 201,960 psi ($\frac{1}{2}$" ϕ low lax. strands)
f_y = 60,000 psi (reinforcement)

SEISMIC DESIGN

Seismic Performance Zone (SPZ) = 1
Bedrock Acceleration Coefficient (A) = 0.090g
Site Coefficient (S) = 1.5

DESIGN SPECIFICATIONS

2007 (4th ED.) AASHTO LRFD Bridge Design Specifications. With 2008 Interims.

LOADING HL-93

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

WATERWAY DATA

Drainage Area = 59.526 Sq. Mi. Low Grade Elev. 495.5 @ Sta. 136+00

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Natural H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
Design	20	6,650	1314	1346	456.67	0.32	0.34	456.99	457.01
Base	100	10,300	1390	1429	457.19	0.89	0.82	458.08	458.01
Max. Calc.	500	13,800	1457	1500	457.64	1.80	2.36	459.44	460.00

I certify that to the best of knowledge, information and belief, this bridge 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.

GARY L. HAHN 81-4853 LICENSED STRUCTURAL ENGINEER STATE OF ILLINOIS

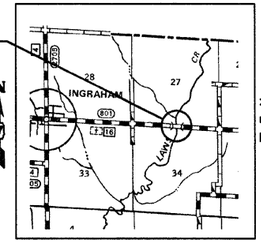
Gary L. Hahn

12-21-2009
Date of Signing

11-30-2010
Date of License Expiration

RHUTASEL and ASSOCIATES, INC.
CONSULTING ENGINEERS • LAND SURVEYORS
CENTRALIA, ILLINOIS FREEBURG, ILLINOIS
ILLINOIS DESIGN FIRM LICENSE NO. 184-000287

R 8 E, 3rd P.M.



LOCATION SKETCH

STATION 131+75.00
LAWS CREEK
BUILT 20__ BY
CLAY COUNTY
F.A.S. RTE. 801 SEC. 09-00082-00-BR
LOADING HL-93
STR. NO. 013-3234

NAME PLATE
(See State Standard 515001 for details)

GENERAL PLAN AND ELEVATION
COUNTY HIGHWAY 16 OVER LAWS CREEK
F.A.S. ROUTE 801 - SECTION 09-00082-00-BR
CLAY COUNTY
STATION 131+75.00
STRUCTURE NO. 013-3234

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
801	09-00082-00-BR	CLAY	14	4
		CONTRACT NO. 95613		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

12/15/2009 RAA1 #50609