

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	STATE	SHEET NO.	SHEET NO. 1 6 SHEETS
0083	02-00270-00-BR	McHENRY	37	23	
FEDERAL ROAD DISTRICT NUMBER 7		ILLINOIS PROJECT NO.		CONTRACT NO.: 83872	

Benchmark: See Alignment Sheet (Sheet 2)  
Existing Structure: S.N. 056-3067, single span Pratt Pony truss with open abutments on timber piles.  
Back to back of abutment length of 71'-0", span of 65'-0". Contractor shall remove existing structure and replace with a single span precast prestress box beam superstructure on open abutments. Back to back of abutment length of 72'-6", span of 70'-0". A detour route shall be provided to accommodate traffic.

No Salvage

GENERAL NOTES

Expansion guards which are not cast in the precast unit shall be fabricated and erected according to Article 503.10(c) of the Standard Specifications and are included in quantity of structural steel.  
Reinforcement bars shall conform to the requirements of AASHTO M31, M42 or M53 Grade 60.  
Layout of slope protection system may be varied in the field to suit ground conditions as directed by the Engineer.  
The embankment configuration shown shall be the minimum embankment that must be constructed prior to construction of the abutments.  
The contractor shall drive two test piles in a permanent location, one at the east abutment and one at the west abutment as directed by the Engineer before ordering the remainder of piles.  
The top surface of the beams shall be finished according to Article 504.06 of the Standard Specification except that the surface shall not be roughened by brooming. The finished surface shall be free of depressions of high spots with sharp corners, and the top edge of keys shall be rounded or chamfered a minimum of 1/4".

DESIGN STRESSES

FIELD UNITS

$f'_c = 3,500$  psi  
 $f_y = 60,000$  psi (reinforcement)  
**PRECAST PRESTRESSED UNITS**  
 $f'_c = 5,000$  psi  
 $f'_{ci} = 4,000$  psi  
 $f'_s = 270,000$  psi (1/2" low lax. strands)  
 $f'_{si} = 201,960$  psi (1/2" low lax. strands)

SEISMIC DATA

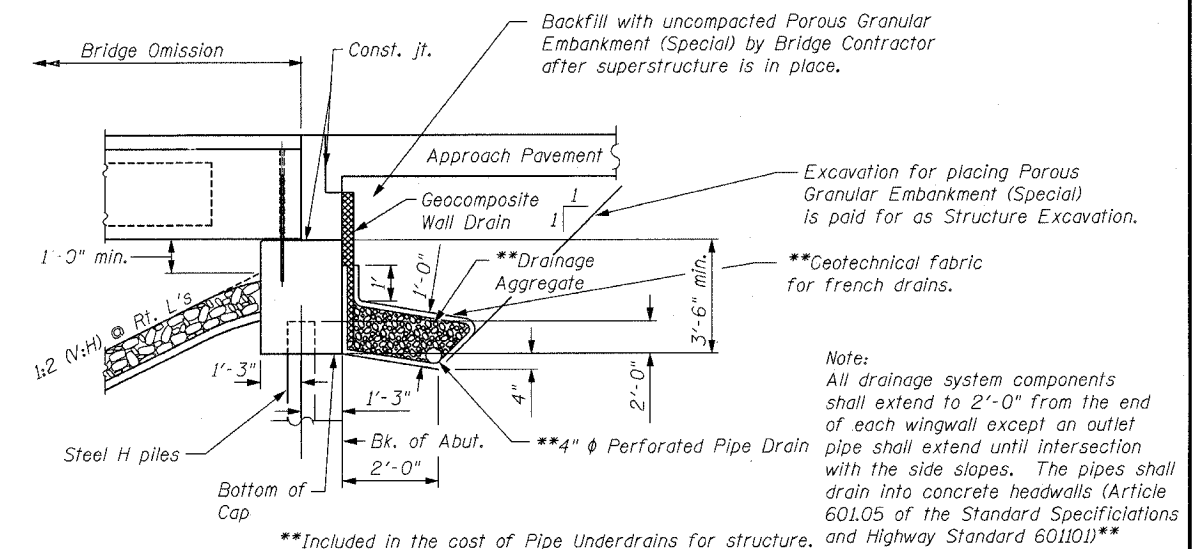
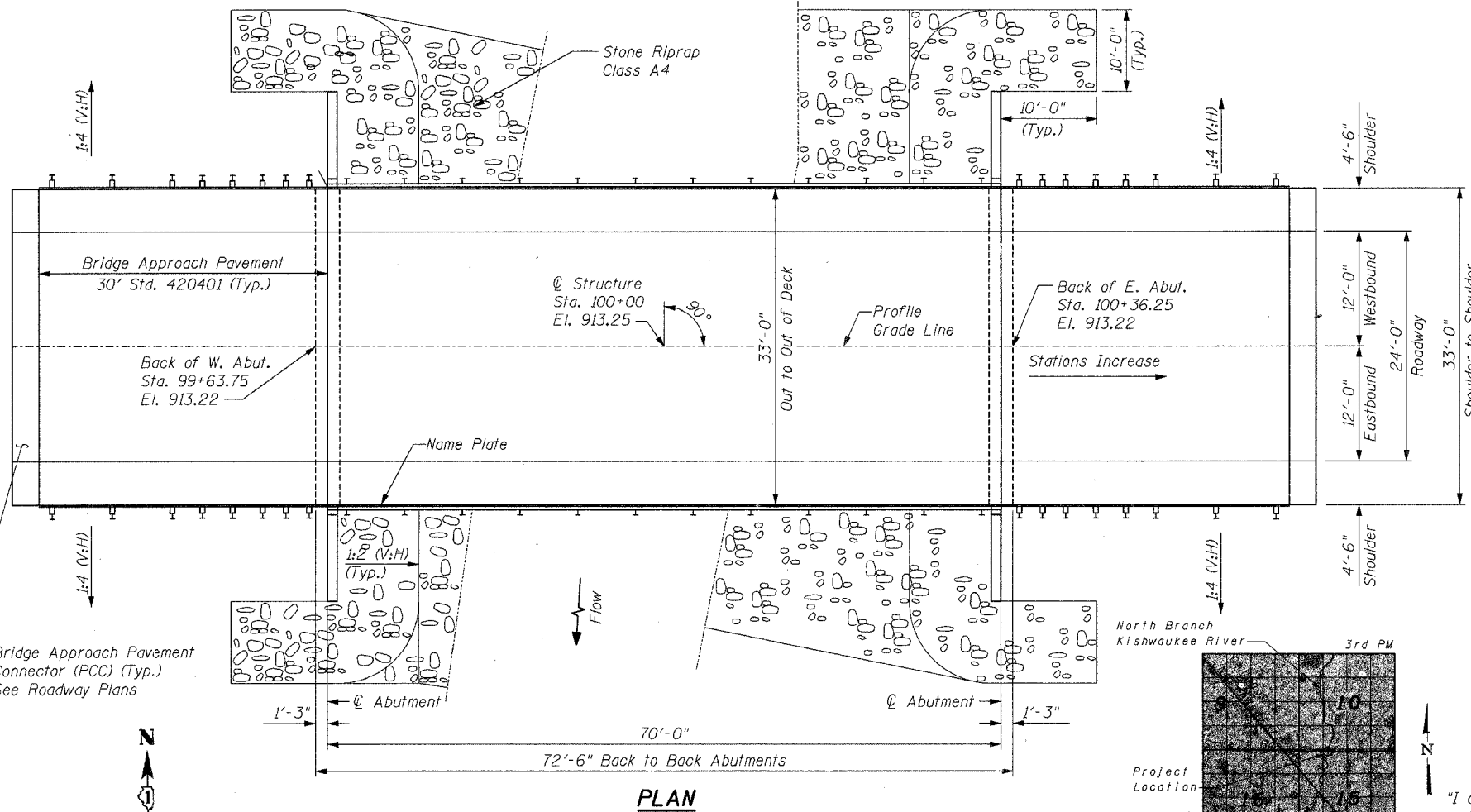
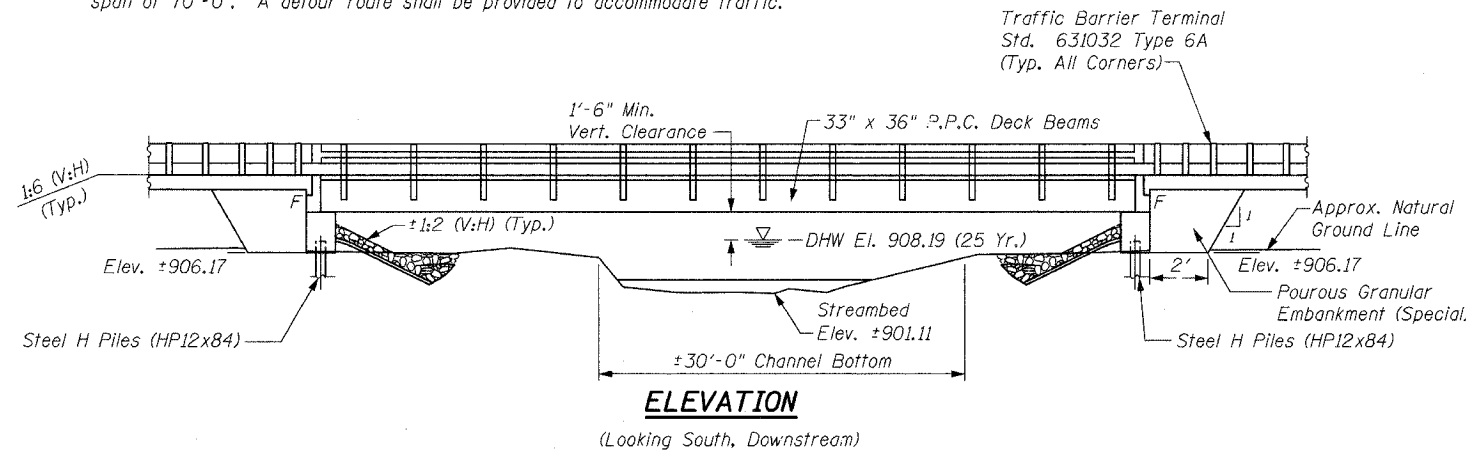
Seismic Performance Category (SPC) = A  
Bedrock Acceleration Coefficient (A) = 0.034g  
Site Coefficient (S) = 1.0

LOADING HS20-44

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

DESIGN SPECIFICATIONS

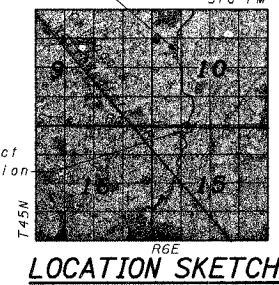
1996 AASHTO with 1997 thru 2006 Interims



NORTH BRANCH OF KISHWAUKEE RIVER  
BUILT 2007 BY HARTLAND TOWNSHIP  
McHENRY COUNTY  
SEC. 02-00-270-00-BR  
FA PROJ. \_\_\_\_\_  
STA. 100+00  
STR. NO. 056-3171 LOADING HS 20

NAME PLATE

See Std. 515001



"I certify that to the best of my 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."



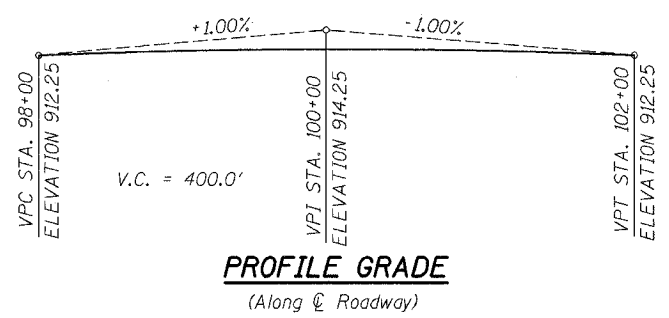
Anthony J. Standish  
ILLINOIS STRUCTURAL NO. 081005819 (Expires 11/30/06)

TOTAL BILL OF MATERIAL

ITEM	UNIT	QTY.
Porous Granular Embankment (Special)	Cu. Yd.	240
Stone Riprap, Class A4	Sq. Yd.	442
Filter Fabric	Sq. Yd.	442
Protective Coat	Sq. Yd.	260
Removal of Existing Structures	EACH	1
Structure Excavation	Cu. Yd.	272
Concrete Structures	Cu. Yd.	39
Bridge Deck Grooving	Sq. Yd.	260
*Concrete Wearing Surfaces	Cu. Yd.	40
Precast, Prestressed Concrete Deck Beams (33" depth)	Sq. Ft.	2300
Reinforcement Bars, Epoxy Coated	Pound	7300
Steel Bridge Rail, Type SM	Foot	140
Furnishing Steel Piles HP 12 X 84	Foot	1120
Driving Steel Piles	Foot	1120
Test Piles Steel HP 12 X 84	Each	2
Name Plate	Each	1
Pipe Underdrains for Structures, 4"	Foot	183
Geocomposite Wall Drain	Sq. Yd.	70

\* Indicates pay item covered by a special provision.

DESIGNED	EAK
CHECKED	AJS
DRAWN	RAP
CHECKED	JAR



WATERWAY INFORMATION

Drainage Area = 15.58 Sq. Mi. Proposed Low Grade Elev. 910.61 @ Sta. 95+50

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.	Head - Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	25	1192	254.54	248.53	907.86	0.28	0.33	908.14	908.19
Base	100	1541	284.46	278.00	908.34	0.32	0.39	908.66	908.73
Overtopping	>500	2435	343.73	335.21	909.27	1.38	1.27	910.65	910.54
Max. Calc.	-	-	-	-	-	-	-	-	-

ILLINOIS DEPARTMENT OF TRANSPORTATION  
GENERAL PLAN  
T.R. 0083 (STREIT ROAD) OVER  
NORTH BRANCH OF THE KISHWAUKEE RIVER  
T.R. 0083 SECTION 02-00270-00-BR  
McHENRY COUNTY  
S.N. 056-3171  
SCALE: DATE: 08/07/2006

