

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
303	131B(1&2)BR	McHENRY	107	42
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 60B83

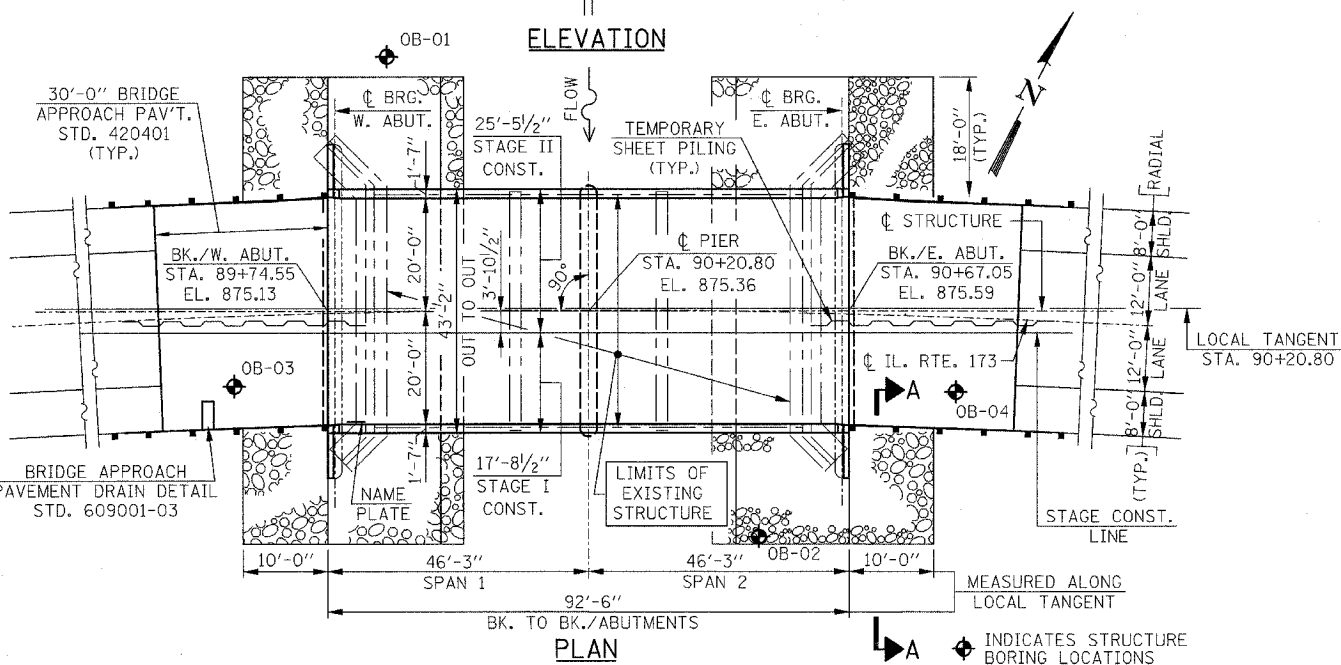
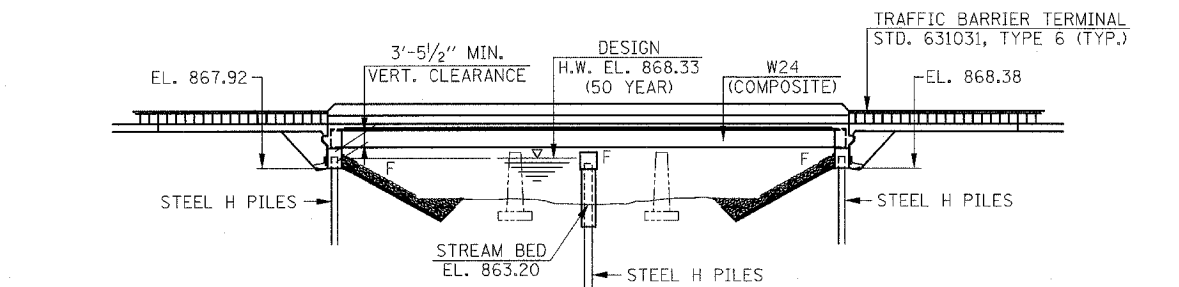
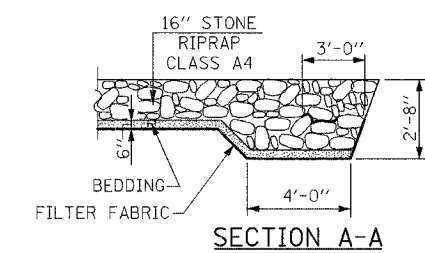
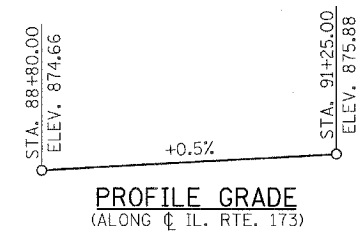
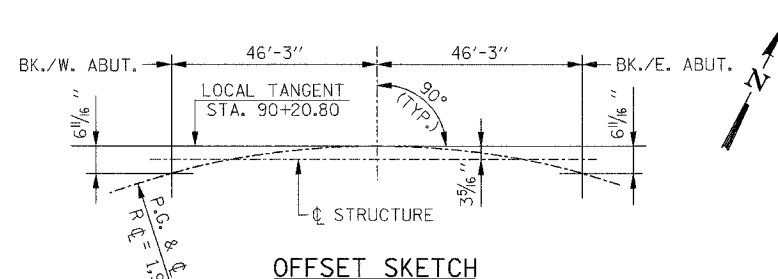
**BENCH MARK "A"**

X-CUT FOUND ON N.E. WINGWALL OF THE BRIDGE OVER THE OVERFLOW OF PISCASAW CREEK, EXIST. STR. NO. 056-0027, EL. 873.72

EXISTING STRUCTURE: S.N. 056-0027, WAS ORIGINALLY BUILT IN 1929 AS A 3-SPAN CONCRETE SLAB BRIDGE 78' LONG WITH AN OUT TO OUT WIDTH OF 24'-2" SUPPORTED ON CLOSED ABUTMENTS AND SOLID PIERS. SUBSEQUENTLY, IN 1971 THE BRIDGE WAS WIDENED TO THE CURRENT 41'-3" WIDTH AND THE SUPERSTRUCTURE WAS REPLACED WITH PRECAST (NOT PRESTRESSED) REINFORCED CONCRETE CHANNEL BEAMS. IN 1992, THE ASPHALT WEARING SURFACE WAS REPLACED WITH A FOUR INCH REINFORCED CONCRETE WEARING SURFACE. IN 2005, 25 OF THE 33 CHANNEL BEAMS THAT MADE UP THIS STRUCTURE WERE REPLACED.

THE EXISTING STRUCTURE IS TO BE REMOVED AND REPLACED UTILIZING STAGE CONSTRUCTION.

SALVAGE: NONE



**DESIGN SCOUR ELEVATION TABLE**

LOCATION	W. ABUT.	PIER 1	E. ABUT.
DESIGN SCOUR ELEVATIONS	868.29	845.20	868.74

**CURVE DATA**  
 P.I. STA. = 90+13.60  
 $\Delta = 39^{\circ}17'04''$  (RT.)  
 $D = 2^{\circ}58'42''$   
 $R = 1,923.83'$   
 $T = 686.64'$   
 $L = 1,319.06'$   
 $E = 118.86'$   
 $e = 3.45\%$   
 $T.R. = 44'$   
 $S.E. RUN = 119'$   
 $P.C. STA. = 83+26.96$   
 $P.T. STA. = 96+46.02$

STATION 90+20.80  
 BUILT 2008 BY  
 STATE OF ILLINOIS  
 F.A.P. RT. 303 SEC. 131B(1&2)BR  
 LOADING HS20  
 STRUCTURE NO. 056-0089

**NAME PLATE**  
 SEE STD. 515001

**APPROVED**  
 FOR STRUCTURAL ADEQUACY ONLY

*Rajesh N. Shah*  
 ENGINEER OF BRIDGES AND STRUCTURES



*Bhadrachar N. Shah*  
 BHADRACHAR N. SHAH 04/13/2007  
 LICENSED STRUCTURAL ENGINEER  
 STATE OF ILLINOIS LIC. No. 081-004476  
 EXPIRES: 11-30-08

**WATERWAY INFORMATION TABLE**

DRAINAGE AREA = 57.22 SQ. MI.		EXIST. LOW GRADE ELEV. = 872.56		MAX. RECORDED H.W.E. = 871.53						
		PROP. LOW GRADE ELEV. = 874.4								
FLOOD	FREQ. (YEAR)	DISCHARGE (CFS) EXIST.	DISCHARGE (CFS) PROP.	WATERWAY OPENING (SQ. FT.) EXIST.	WATERWAY OPENING (SQ. FT.) PROP.	NATURAL H.W.E.	HEAD (FT.) EXIST.	HEAD (FT.) PROP.	HEADWATER ELEV. EXIST.	HEADWATER ELEV. PROP.
DESIGN	10	733.2	765.82	242	264	867.73	0.78	0.77	868.51	868.5
BASE	100	1,057.2	1,080.36	287	314	868.33	1.07	1.05	869.40	869.38
OVERTOPPING	-	-	-	-	-	-	-	-	-	-
MAX. CALC.	500	1,355.7	1,509.36	339	375	869.03	1.52	1.38	870.55	870.41

COMMENTS: ALL ELEVATIONS ARE IN HIGHWAY DATUM  
 MAX. RECORDED HWE ESTIMATED FROM HYDROLOGIC INVESTIGATION ATLAS, HA-498  
 INVERT ELEVATIONS - UPSTREAM 863.3, DOWNSTREAM 863.1  
 TABLE IS PREPARED FOR ANALYSIS WHERE THE RAILROAD BRIDGE IS NOT INCLUDED IN THE HEC-RAS MODEL

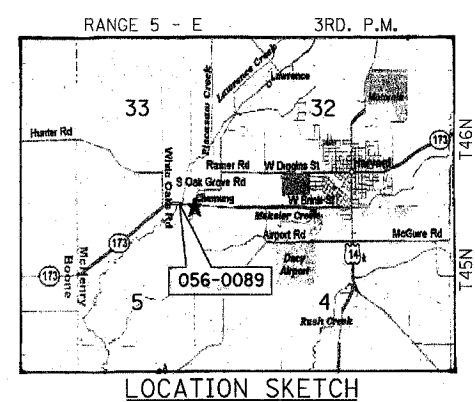
**LOADING HS20-44**  
 ALLOW 50#/SQ. FT. FOR FUTURE WEARING SURFACE

**DESIGN SPECIFICATIONS**  
 AASHTO 17TH EDITION - 2002

**DESIGN STRESSES**  
 FIELD UNITS

$f'_c = 3,500$  PSI  
 $f_y = 60,000$  PSI (REINFORCEMENT)  
 $f_y = 50,000$  PSI (M270 GR. 50 STRUCTURAL STEEL)

**SEISMIC DATA**  
 SEISMIC PERFORMANCE CATEGORY (SPC) = A  
 BEDROCK ACCELERATION COEFFICIENT (A) = 0.033g  
 SITE COEFFICIENT (S) = 1.0



**REVISIONS**

NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

GENERAL PLAN & ELEVATION  
 IL. RTE. 173  
 OVER  
 PISCASAW CREEK OVERFLOW  
 F.A.P. RTE. 303 SECTION: 131B(1&2)BR  
 McHENRY COUNTY STATION 90+20.80  
 STRUCTURE NO. 056-0089

SCALE: DATE: APRIL 13, 2007  
 DRAWN BY: D.L./F.M.  
 CHECKED BY: B.N.S./J.C.N.

**CHRISTIAN-ROGE & ASSOC., INC.**  
 CHICAGO ILLINOIS