

Bench Mark: 1) Cook County Highway Dept. brass disc at the southwest corner of the west abutment, elevation 657.90.
 2) Cook County Highway Dept. brass disc at the northeast corner of the east abutment, elevation 657.82.

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

Existing Structure: The bridge carrying US Route 30 over IL Route 394 was originally built in 1954. The bridge is a four-span continuous structure with 12 lines of non-composite rolled steel beams. The existing structure is 68'-0" out to out and measures 226'-0" bk. to bk. abutments and is supported by spill thru pile bent abutments and multi column piers. The bridge rehabilitation in the year 1993 involved replacement of the steel bearings and approach slabs, installation of parapet walls, fence and construction of median. The superstructure was raised to gain a vertical clearance of 14'-8" and the expansion joints were replaced. The structure has a zero skew angles, however it intersects with IL Rte 394 at angle 0°-4'-8" (under). There are 12 surface mounted (HID) waterproof lights mounted under the bridge. There is also cobra style roadway light attached to each fascia beam at pier 2 and lights affixed to the two bridge mounted signs. The bridge has no historical significance. The existing superstructure is to be removed & replaced and the substructure modified. One lane of traffic in each direction is to be maintained using stage construction.

Salvage existing hardwood protective shielding as indicated on Sheet S-2.

SCOPE OF WORK

1. Remove and replace the bridge deck and superstructure.
2. Remove and replace abutment backwalls.
3. Remove and replace pier caps.
4. Remove and replace bearings.
5. Repair the substructures with structural concrete repairs.
6. Install concrete slope walls.
7. Remove and replace lights and signing.
8. Remove and replace guard rails on all four corners of the bridge.
9. Partial depth patching of W.B. deck during pre-stage.

LOADING HL-93

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

DESIGN SPECIFICATIONS

NEW CONSTRUCTION
 2007 AASHTO LRFD Bridge Design Specifications with 2008 Interims

EXISTING SUBSTRUCTURE
 1995 FHWA Seismic Retrofitting Manual for Highway Bridges

DESIGN STRESSES

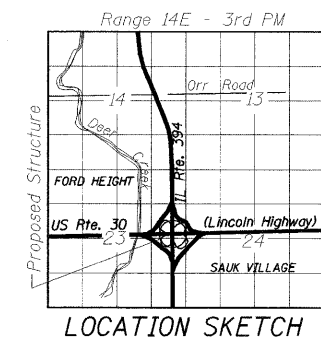
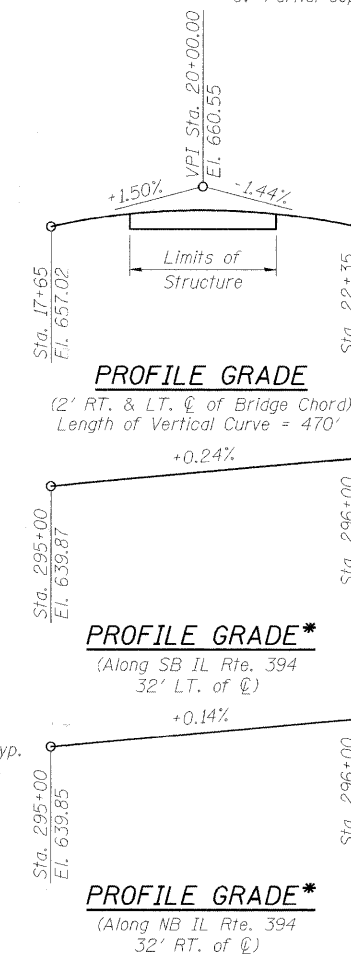
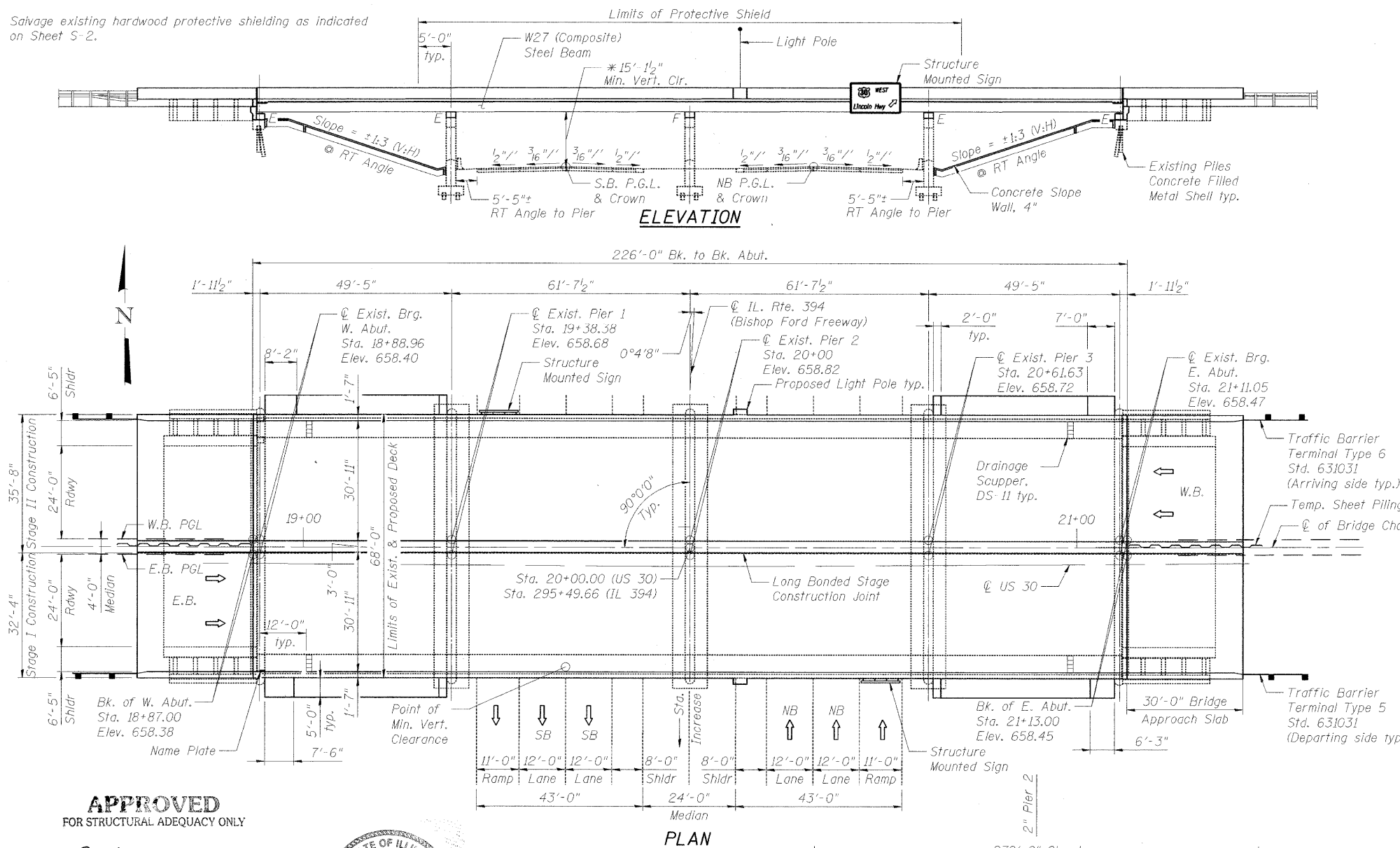
FIELD UNITS (NEW CONSTRUCTION)
 $f'_c = 3,500$ psi
 $f_y = 60,000$ psi (Reinforcement)
 $f_y = 50,000$ psi (AASHTO M270 Grade 50)

FIELD UNITS (EXISTING CONSTRUCTION)
 $f_c = 800$ psi (w/o soil pressure)
 $f_c = 1,400$ psi (with soil pressure)
 $f_s = 20,000$ psi (Reinforcement)

SEISMIC DATA

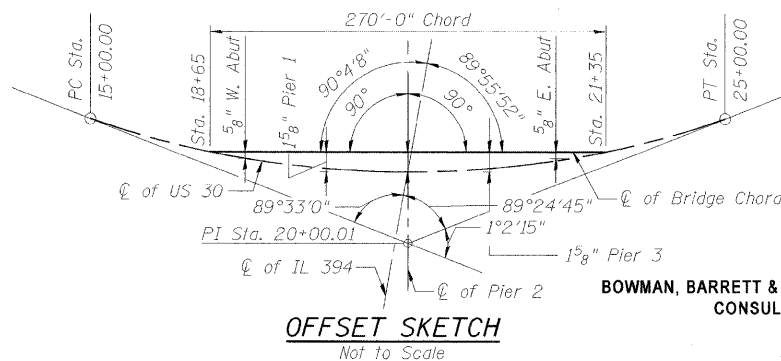
NEW CONSTRUCTION
 Seismic Performance Zone (SPZ)=1
 Design Spectral Acceleration at 1.0 sec (SD1)=0.093g
 Design Spectral Acceleration at 0.2 sec (SDS)=0.154g
 Soil Site Class = D

EXISTING CONSTRUCTION:
 Seismic Performance Category (SPC) = A
 Bedrock Acceleration Coefficient (A) = .04g
 Site Coefficient (S) = 1.2



CURVE DATA

$\Delta = 1^\circ 02' 15''$ LT
 $D = 0^\circ 06' 14''$
 $T = 500.01'$
 $L = 1,000.00'$
 $E = 2.26'$
 $R = 55,224.85'$
 $S.E. = 0.0$
 $P.C. = Sta. 15+00$
 $P.T. = Sta. 25+00$
 $P.I. = Sta. 20+00.01$



OFFSET SKETCH
 Not to Scale

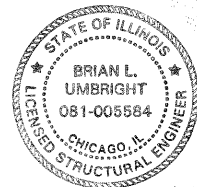
GENERAL PLAN AND ELEVATION
 US ROUTE 30 (LINCOLN HWY) OVER
 IL ROUTE 394 (BISHOP FORD FWY)
 F.A.P. RT. 0353 SEC. 0303.1B-1
 COOK COUNTY
 STATION 20+00
 STRUCTURE NO. 016-0275

BOWMAN, BARRETT & ASSOCIATES INC.
 CONSULTING ENGINEERS
 Chicago, Illinois
 312.228.0100
 www.bbandainc.com
 Job No. 910

SHEET NO. S-1 S-30 SHEETS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	0353	0303.1B-1	COOK	91	46
		SN 016-0275	CONTRACT NO. 60C05		
		FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT		

APPROVED
 FOR STRUCTURAL ADEQUACY ONLY

Ralph E. Anderson
 ENGINEER OF BRIDGES AND STRUCTURES



SIGNED: *Brian L. Umbright*

DATE: MAY 20, 2009

EXPIRES: November 30, 2010

DESIGNED - TAH
CHECKED - DF
DRAWN - LAM
CHECKED - DF