

Benchmark: B.M. #1 - Chisled square in on north end of south median nose, Sta. 305+97.70, 5.30' Rt., NAVD88, Elev. 597.60.

Existing Structure: SN 084-0154 built in 1974 under section 84-10-1HB-2 is a 2 span continuous welded plate girder structure with CIP concrete deck, supported by vaulted abutments supported on steel piles and a trapezoidal 5-column pier supported on steel piles. The existing structure is 199'-11" back to back existing abutments with 28'-11 1/2" vaulted approach spans at each end. The bridge deck is 7 1/4" thick with a 2 3/8" overlay, 68'-0" out to out with an 18'-0" median. In 1999, the overlay and expansion joints were replaced.

Bridge to be reconstructed using stage construction. One lane of traffic to be maintained at all times.

No Salvage.

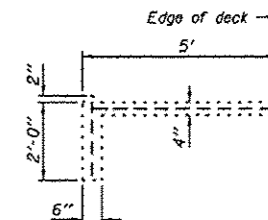
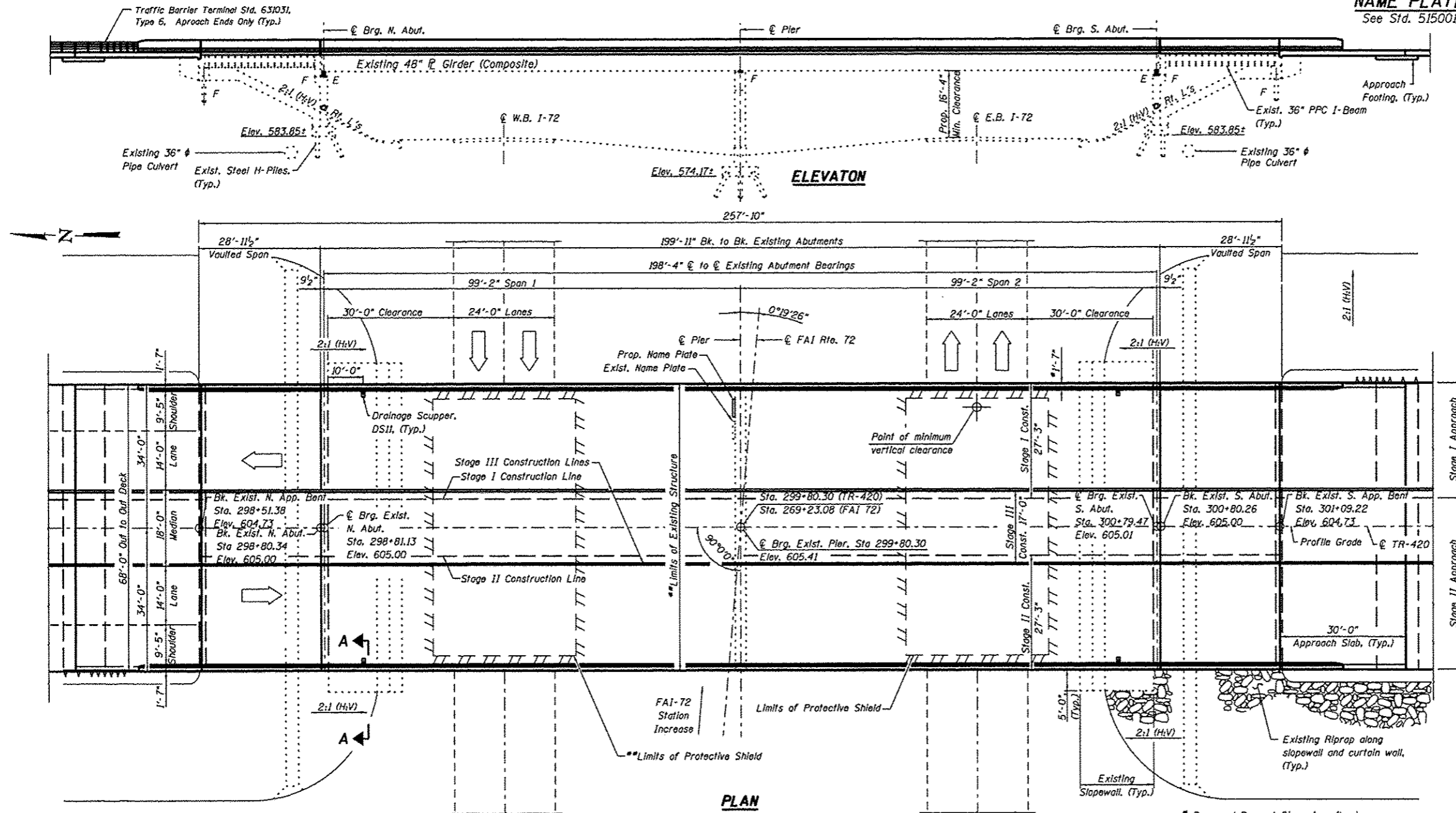
STATION 269+23.08
REBUILT 20... BY
STATE OF ILLINOIS
F.A.I. RTE. 72
SEC. (84-10-1.2) RS-3
LOADING HS-20
STRUCTURE NO. 084-0154

PART "B" SHEET 90 OF 136

SCOPE OF WORK

1. Remove and replace deck and expansion joints.
2. Extend wingwalls and Curtain walls to match new elevation.
3. Install approach slabs.
4. Repair the damaged slope/wall sections.
5. Replace and diaphragm with channel diaphragm.
6. Install Shear Studs In Negative Moment Region of Deck.
7. Jack and remove existing bearings at abutments and Pier and raise Profile Elevation 6" While Deck is off.
8. Replace bearings with new elastomeric bearings at the Abutments and fixed bearings at Pier.

NAME PLATE
See Std. 515001



SECTION A-A

LOADING HS20-44

Allow 25#/sq. ft. for future wearing surface.

DESIGN SPECIFICATIONS

(New Construction)
2002 AASHTO "Standard Specifications
for Highway Bridges"

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.062g
Design Spectral Acceleration at 2.0 sec. (S_{D5}) = 0.164g
Soil Site Class = B

DESIGN STRESSES

PRECAST PRESTRESSED UNITS (Exlst.)

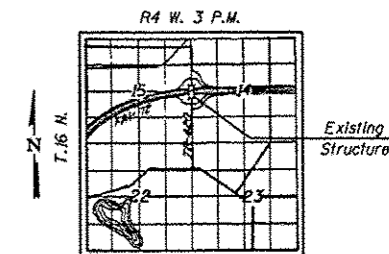
f_c = 5,000 psi
f_{ci} = 4,000 psi
f_{sl} = 188,700 psi (1/8" φ stress relieved strands)
f_s = 270,000 psi (1/8" φ stress relieved strands)

FIELD UNITS (Exlst. Constr.)

f_c = 1,400 psi (Substructure)
f_c = 1,200 psi (Slab)
f_s = 20,000 psi (Steel)
f_s = 20,000 psi (Reinforcement)

FIELD UNITS (New Const.)

f_c = 3,500 psi
f_y = 60,000 psi (Reinforcement)
f_y = 36,000 psi (Steel)



LOCATION SKETCH

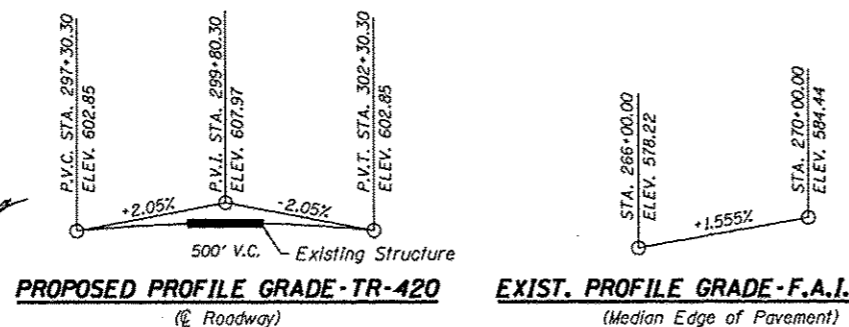
GENERAL PLAN & ELEVATION

**TR-420 OVER
F.A.I. RTE. 72
SECTION (84-10-1.2) RS-3
SANGAMON COUNTY
STRUCTURE NO. 084-0154
STA. 269+23.08**

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APPROVED
For Structural Adequacy Only
De Carl Kreyer
Engineer of Bridges & Structures



Michael T. Haley 9-18-2013
Date
Michael T. Haley
Licensed Structural Engineer
State of Illinois No. 81-5991
Expires 11/30/2014

FILE NAME = TR420 over FAI-72.dgn	USER NAME =	DESIGNED - SAL	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL PLAN AND ELEVATION OVERPASS ROAD (TR-420) OVER F.A.I.-72 - S.N. 084-0154 SHEET NO. 1 OF 25 SHEETS	F.A.I. RTE. 72	SECTION (84-10-1.2) RS-3	COUNTY SANGAMON	TOTAL SHEETS 194	SHEET NO. 148
PLOT SCALE =	DRAWN - T.J.W.	REVISED -	REVISED -			CONTRACT NO. 72C90				
PLOT DATE =	CHECKED - MTH	REVISED -	REVISED -			FED. ROAD DIST. NO. 6 ILLINOIS FED. AID PROJECT				
	CHECKED - MTH	REVISED -	REVISED -							