Bench Mark: A chiseled square on NE corner of NE wingwall of S.N. 044-0010, El. 354.524 SHEET NO. 1 F.A.S. 38 B-1 Existing Structure: S.N. 044-0010, built in 1924 under S.B.I. Route 1, Section 38B, was originally a RC T-beam bridge. The superstructure was replaced and widened 23 12 12 SHEETS JOHNSON INDEX OF SHEETS with PPC deck beams in 1972 under S.B.I. Route 1, Section 38 B-DR. The existing structure is a single span 21" x 36" PPC-deck beam bridge with closed cantilever abutments on untreated timber piles, 52'-10" back to back abutments, 33'-0" out to out, with a 45 degree skew. 1. General Plan Contract # 98890 2. General Data The existing deck beams, bridge railing, and approach shoulder beams including railing are to be removed and replaced. Traffic to be maintained utilizing stage construction. 3. Stage Construction Details 4. Steel Railing, Type SM No Salvage. LOADING HS20-44 (NEW CONSTRUCTION) 5. Approach Details 6. Superstructure No allowance for future wearing surface. 7. Superstructure Details-1 Existing Bridge Rail and Posts attached to Precast 8. Superstructure Details-2 Traffic Barrier Terminal Concrete Units to be removed & replaced (Typ. ype 6A, Std 631032 9. Abutments all four corners) Removal is included in pay item DESIGN SPECIFICATIONS (NEW CONSTRUCTION) 10. Bar Splicer Assembly Details (Typ. all four corners) for Removal of Existing Precast Concrete Units. 11. Temporary Concrete Barrier 12. Concrete Repair **DESIGN STRESSES** FIELD UNITS 21" x 36" PPC f'_c = 5,000 psi (Concrete Wearing Surface) 0.0% Deck Beams fy = 60,000 psi (Reinforcement) Existing Natural PRECAST PRESTRESSED UNITS Ground $f_c' = 5,000 psi$ f'ci = 4.000 psi $f'_{sl} = \frac{7,000 \text{ psi}}{270,000 \text{ psi}} (\frac{1}{2}" \text{ ϕ low lax, strands})$ $f'_{sl} = 201,960 \text{ psi} (\frac{1}{2}" \text{ ϕ low lax, strands})$ SEISMIC DATA Existing Abutment (Typ.) Seismic Performance Category (SPC) = B Bedrock Acceleration Coefficient (A) = 13.6%g ELEVATION PROFILE GRADE Site Coefficient (S) = 1.5 (along © US 45) ~-Z-__ STATION 213+64.78 REBUILT 20 BY CURVE DATA STATE OF ILLINOIS △ = 19° 08′ 56" (LT) F.A.S. RT. 960 SEC. 38 B-1 18" x 3'-9" Precast Approach D = 2° 30′ 28" LOADING HS20 Limits of Units (Typ. all four corners) T = 385.36' Existing Structure Existing Name Plate on STR. NO. 044-0010 to be removed and replaced L = 763.54' abutment to remain E = 32.27'NAME PLATE R = 2284.61' (See Std. 515001) S.E. = 0.021'/' P.C. = Sta. 207+36.58 -Stage Constr. Line P.T. = Sta. 215+00.12 P.I. = Sta. 211+21.94 © Brg. S. Abut., Sta. 213+90.40/ Exist. N. Abut. xist. Rigid Approach Sta. 213+38.51 U.S. 45 & P.G. Elev. 356.67 Range 3E - 3rd. PM ő Conc. Wearing Surf.\ (Bk. Exist. S. Abut. Local Tangent at Sta. 213+64.78 Stage Const. Line Sta. 213+91.35 Elev. 356.67 Sta. 213+64.78 <u>© Brg. N. Abut.</u> Sta. 213+39.45 Bk. N. Abut. ∕--Bk. S. Abut. —Sta. 213+38.51 -Sta. 213+91.35 Portion of 10" PCC Pavement to be removed € Rdwy.-19'-11" (Typ.) and replaced. Cost of removal included with LOCATION SKETCH 115/16 50′-11³8″ € to € Brgs. Removal of Existing Precast Concrete Units. * Measured radially (Typ. all four corners) 52'-10" Bk. to Bk. Existing Abutments Local Tangent at Sta. 213+64.78 Attach new Name Plate & @ Structure -Sta. 213+64.78 to backside of 8' rail element 26'-5" 26'-5" PLAN ILLINOIS DEPARTMENT OF TRANSPORTATION OFFSET SKETCH GENERAL PLAN U.S. ROUTE 45 OVER APPROVED CAVE CREEK Michael J. Her FOR STRUCTURAL ADEQUACY ONLY 8-16-07 F.A.S. ROUTE 960 - SECTION 38 B-1 REVISIONS NAME Michael T. Haley Relph E Anders (1)
ENGINEER OF BRIDGES AND STRUCTURES

Licensed Structural Engineer State of Illinois No. 81-5991

Expires 11/30/2008

JOHNSON COUNTY

STA. 213+64.78

STRUCTURE NO. 044-0010

LIN ENGINEERING,LTD.

Consulting Engineers

Designed By: DLS Checked By: MTH Drawn By: AJF
Date: 03/2007 File: 044-0010.DGN