Bench Mark: Cut square on north headwall in middle of 2 bridges. Elevation 440.71.

Existing Structure: S.N. 082-0096 & 082-0097. 1-span reinforced concrete T-beams. Built in 1952 at Station 7+62.8 by Corps of Engineers, U.S. Army. Closed abutments supported on spread footings. The existing superstructure is to be removed and replaced.

The structure is to be replaced using road closure.

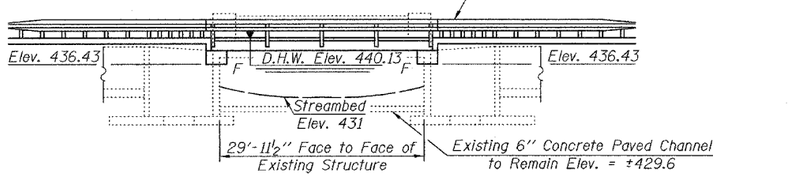
No salvage.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

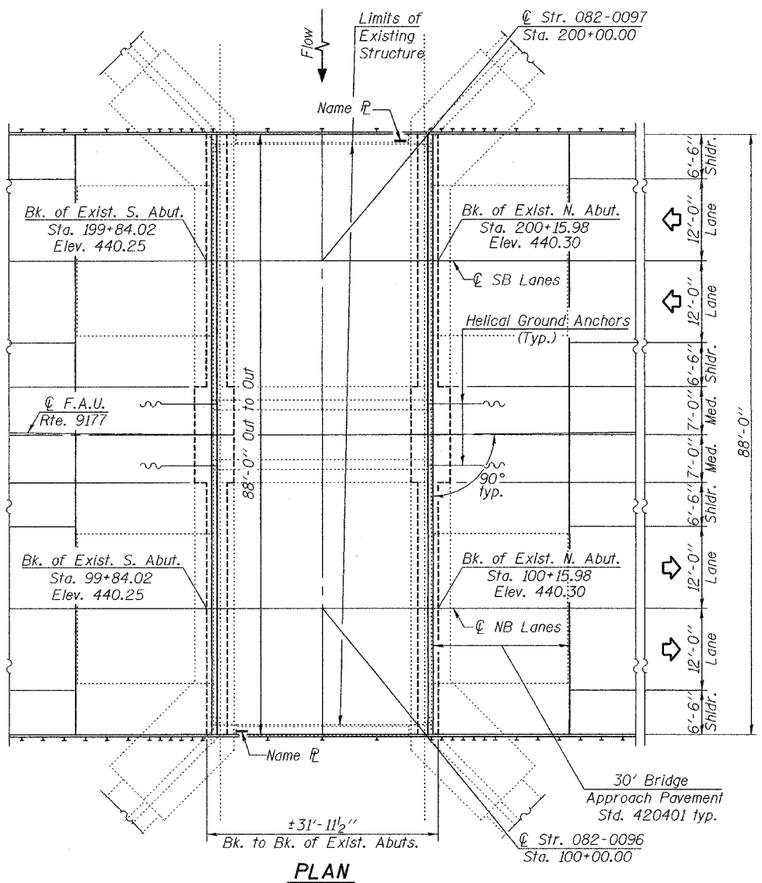
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 9177	44-1BR	St. Clair	29	16
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 1
10 SHEETS

Contract #76566



ELEVATION



PLAN

INDEX OF SHEETS

1. General Plan & Elevation
2. Temporary Wall Bracing System
3. Superstructure
4. Superstructure Details
5. Type SM Railing
6. Concrete Removal Details
7. & 8. Abutments
9. Wall Anchor System Details
10. Bar Splicer Assembly Details

GENERAL NOTES

Reinforcement bars shall conform to the requirements of ASTM A706 Gr. 60 (II Modified). See Special Provisions.

Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price for the work.

The back face of closed abutment (New Concrete only) shall be waterproofed according to Article 503.18 of the Standard Specifications.

Expansion bolts shall consist of approved expansion anchors, providing minimum certified proof load = 4080 lbs., and $\frac{3}{4}$" ϕ x 12" hooked bolts.

Reinforcement bars designated (E) shall be epoxy coated.

STATION 100+00.00 (NB)
REBUILT 200 BY
STATE OF ILLINOIS
F.A.U. RTE. 9177 - SEC. 44-1BR
LOADING HS20
STR. NO. 082-0096 (NB)

NAME PLATE

See Std. 515001

STATION 200+00.00 (SB)
REBUILT 200 BY
STATE OF ILLINOIS
F.A.U. RTE. 9177 - SEC. 44-1BR
LOADING HS20
STR. NO. 082-0097 (SB)

NAME PLATE

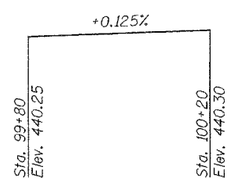
See Std. 515001

EXISTING CURVE DATA (NB)

PI Sta. = 100+35.68
Δ = 4°-08'-56" (LT)
D = 2°-06'-51"
R = 2,710.00'
T = 98.16'
L = 196.24'
E = 1.78'
e = Normal Crown
P.C. Sta. = 99+37.52
P.T. Sta. = 101+33.76

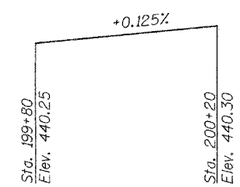
EXISTING CURVE DATA (SB)

PI Sta. = 200+00.20
Δ = 5°-02'-39" (LT)
D = 1°-53'-05"
R = 3,040.00'
T = 133.90'
L = 267.63'
E = 2.95'
e = Normal Crown
P.C. Sta. = 198+66.30
P.T. Sta. = 201+33.93



PROFILE GRADE

S.N. 082-0096 (NB)



PROFILE GRADE

S.N. 082-0097 (SB)

Note: Proposed grade is the same as existing grade at this bridge site (per field survey).

LOADING HS20-44

No future wearing surface allowed

DESIGN SPECIFICATIONS

2002 AASHTO
Seismic Retrofitting Manual for Highway Bridges
FHWA-RD-94-052 May 1995

DESIGN STRESSES

PRECAST PRESTRESSED UNITS

f'_c = 5,000 psi
f'_{ci} = 4,000 psi
f'_s = 270,000 psi
f_s = 201,960 psi ($\frac{1}{2}$" low lax strands)

FIELD UNITS

f'_c = 3,500 psi
f_y = 60,000 psi (reinforcement)
f_y = 36,000 psi (structural steel)

EXISTING UNITS

f_c = 1,200 psi
f_s = 20,000 psi (reinforcement)

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Removal of Existing Superstructures	Each	2		2
Concrete Structures	Cu. Yd.		18.1	18.1
Precast Prestressed Concrete Deck Beams (17" Depth)	Sq. Ft.	2776		2776
Reinforcement Bars, Epoxy Coated	Pound	3840	3760	7600
Bridge Deck Grooving	Sq. Yd.	302		302
Name Plates	Each	2		2
Structure Excavation	Cu. Yd.		10.4	10.4
Steel Railing Type SM	Foot	63		63
Helical Ground Anchors	Each		4	4
Concrete Wearing Surface, 5"	Sq. Yd.	309		309
Concrete Removal	Cu. Yd.		8.9	8.9
Protective Coat	Sq. Yd.	309		309
Temporary-Wall Bracing System	L. Sum		1	1
Structural Repair of Concrete (Depth equal or less than 5")	Sq. Ft.		42	42
Bar Splicers	Each	66	32	98

DESIGNED A. R. Bond
CHECKED
DRAWN R. Sommer
CHECKED GRA / NRB

December 14 2006
EXAMINED Thomas J. Domke
ENGINEER OF BRIDGE DESIGN
PASSED Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES

STATE OF ILLINOIS
RALPH E. ANDERSON
081-004625
SPRINGFIELD
LICENSED STRUCTURAL ENGINEER

EXPIRES 11-30-2008

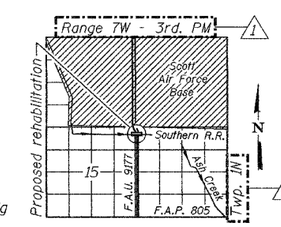
WATERWAY INFORMATION

Drainage Area = 2.08 sq. mi. Low Grade Elev. 440.19 @ Sta. 99+75

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Nat. H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
Design	50	1,604	132	132	440.13	2.13	2.13	442.26	442.26
Base	100	1,866	132	132	440.54	2.35	2.35	442.89	442.89
Overtopping	11	1,040	132	132	439.30	0.89	0.89	440.19	440.19
Scour	10	1,002	132	132	439.21	0.78	0.78	439.99	439.99

SEISMIC DATA

Seismic Performance Category (SPC) = B
Bedrock Acceleration Coefficient (A) = 0.11g
Site Coefficient (S) = 1.5



LOCATION SKETCH

GENERAL PLAN
SCOTT ROAD OVER ASH CREEK
F.A.U. ROUTE 9177-SECTION 44-1BR
ST.CLAIR COUNTY
STATION 100+00.00 (NB)
STATION 200+00.00 (SB)
S.N. 082-0096 (NB) & 082-0097 (SB)

1 Revised 12-4-2006 N.R.B.

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