

Bench Mark: Chiseled "□" on NW corner of Lid and Valve Box at West End and North Side of Summit Avenue Bridge  
Marked and painted TB #1 Elev. 422.58.

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 9181	52BR	ST. CLAIR	41	17
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

Contract #76120

Existing Structure: S.N. 082-0136, 3-span reinforced concrete deck on non-composite steel wide flange beams.  
Built 1957 under SA 69, Section 52-B-CS at Station 39+89. Open pile bent abutments and piers, supported on concrete piles. The existing concrete deck to be removed and replaced with a composite concrete deck.  
Traffic to be maintained utilizing stage construction.

No salvage

GENERAL NOTES

All new structural steel shall be shop painted with the inorganic zinc rich primer per AASHTO M 300, type 1. Fasteners shall be AASHTO M164 Type 1, mechanically galvanized bolts. Bolts 7/8 in.  $\phi$ , holes 15/16 in.  $\phi$ , unless otherwise noted.  
No field welding is permitted except as specified in the contract documents.  
All construction joints shall be bonded.  
Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.  
Reinforcement bars designated (E) shall be epoxy coated.  
Calculated weight of structural steel = 2030 lbs. (AASHTO M270, Grade 36)  
= 1200 lbs. (AASHTO M270, Grade 50)

The SSPC-QP1 and SSPC-QP2 Painting Contractor Certifications will be required for this bridge.

Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction 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 scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

The existing structural steel contains lead. The contractor should take appropriate precautions to deal with the presence of lead on this project.

Prior to pouring the new concrete deck, all heavy or loose rust, loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the pay item covering removal of the existing concrete.  
As directed by the Engineer, existing construction accessories welded to the top flange of beams shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by qualified personnel approved by the Engineer. Any cracks that cannot be removed by grinding 1/4 inch deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. The cost of removing welded accessories, grinding and inspecting weld areas and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.

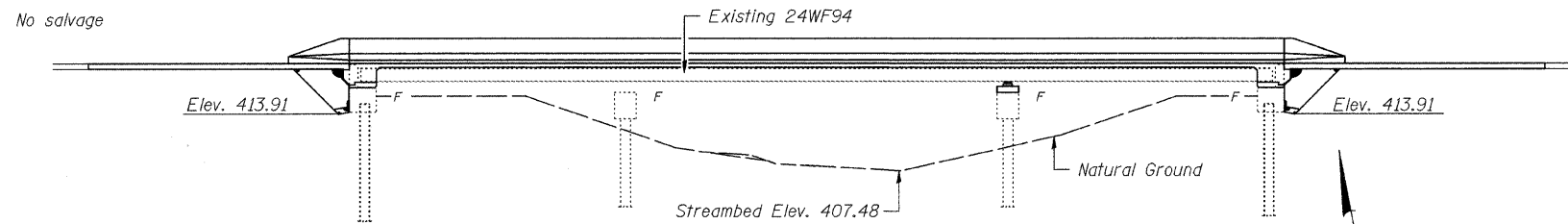
Bearing seat surfaces shall be constructed or adjusted to their designated elevations within a tolerance of 1/8 inch (0.01 ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.

Cleaning and Painting of the existing structural steel shall be as specified in the special provision for "Cleaning and Painting Existing Steel Structures". All existing steel shall be cleaned per Near White Blast Cleaning - SSPC-SP10. All existing steel shall be painted according to the requirements of Paint System 1 - 0Z/E/U. The color of the final finish coat shall be Gray, Munsell No. 5B 7/1.

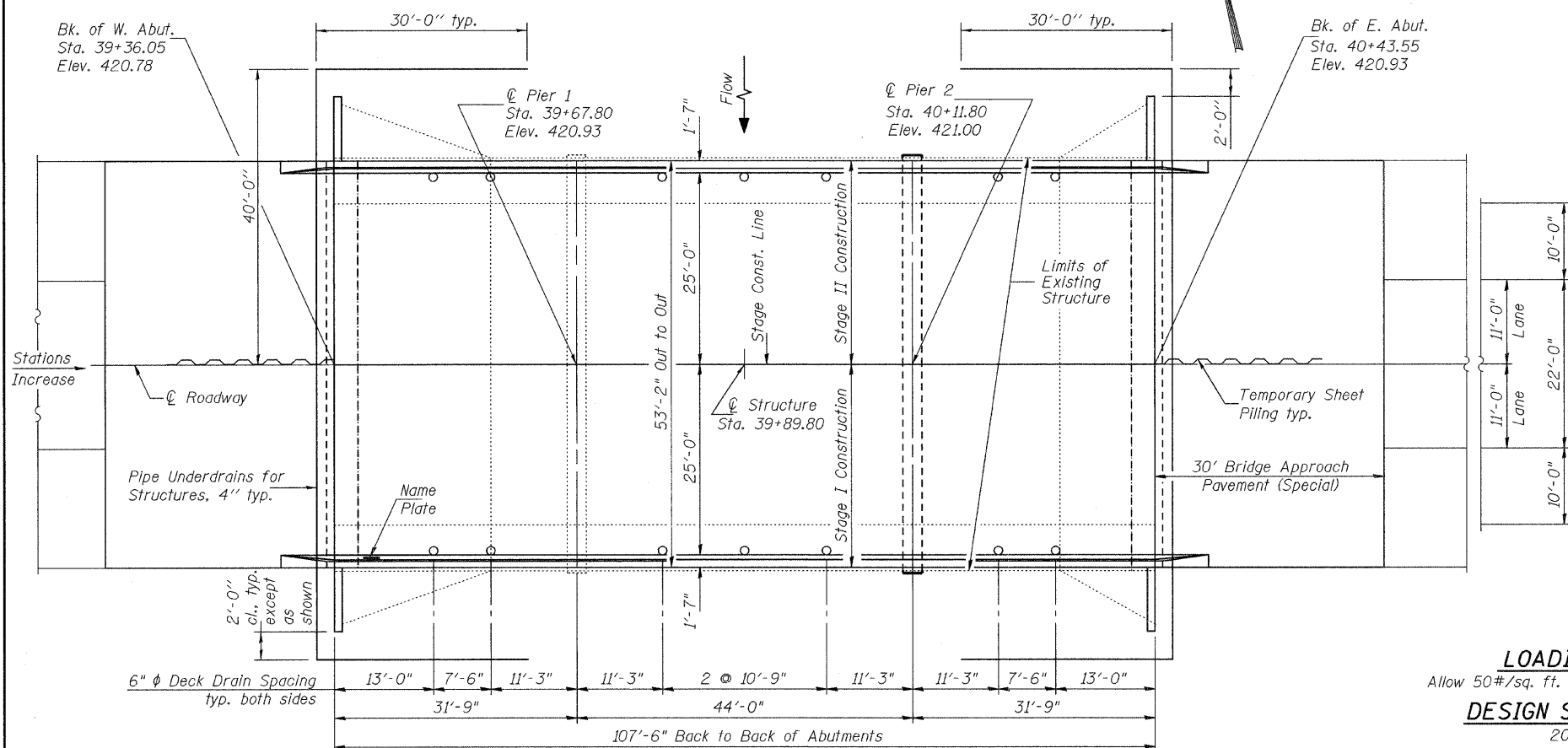
A minimum of 1 (one) air monitor will be required to monitor abrasive blasting operations at this site, see special provision for "Containment and Disposal of Lead Paint Cleaning Residues".

TOTAL BILL OF MATERIAL

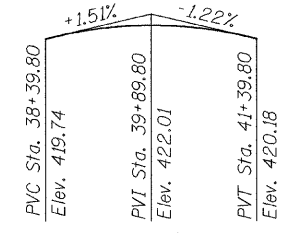
ITEM	UNIT	SUPER	SUB	TOTAL
Removal of Existing Concrete Deck	Each	1		1
Concrete Removal	Cu. Yd.		18.8	18.8
Structure Excavation	Cu. Yd.		171.0	171.0
Concrete Superstructure	Cu. Yd.	360.7		360.7
Protective Coat	Sq. Yd.	1047		1047
Jack and Remove Existing Bearings	Each	20		20
Concrete Structures	Cu. Yd.		45.6	45.6
Stud Shear Connectors	Each	3310		3310
Reinforcement Bars, Epoxy Coated	Pound	77600	9250	86850
Bar Splicers	Each	601	62	663
Bridge Deck Grooving	Sq. Yd.	920		920
Floor Drains	Each	14		14
Furnishing and Erecting Structural Steel	Pound	3230		3230
Porous Granular Embankment (Special)	Cu. Yd.		136.1	136.1
Temporary Sheet Piling	Sq. Ft.		412.0	412.0
Name Plates	Each	1		1
Cleaning and Painting Steel Bridge	L. Sum	1		1
Containment and Disposal of Lead Paint Cleaning Residues	L. Sum	1		1
Pipe Underdrains for Structures, 4"	Foot		275	275
Geocomposite Wall Drain	Sq. Yd.		90.8	90.8
Anchor Bolts 1"	Each	20		20
Jacking and Cribbing	Each	10		10



ELEVATION



PLAN



PROFILE GRADE  
(along  $\phi$  roadway)

STATION 39+89.80  
REBUILT 20 BY  
STATE OF ILLINOIS  
F.A.U. RT. 9181 SECTION 52BR  
LOADING HS20  
STR. NO. 082-0136

NAME PLATE

See Std. 515001

Note:  
Existing Name Plate to be cleaned and relocated next to the new Name Plate.  
Cost included with Name Plates.

DESIGNED: W.A. BEISNER  
CHECKED: Fossela Teklemaiyet  
DRAWN: PAUL W. SWEET  
EXAMINED: November 24, 2009  
PASSED: [Signature]



EXPIRES 11-30-2010

WATERWAY INFORMATION

Drainage Area = 42.1 sq. mi. Low Grade Elev. 420.42\* @ Sta. 39+14

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.	Head - Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	50	2,550	592	592	420.46	0.26	0.26	420.72	420.72
Base	100	2,550	592	592	420.46	0.26	0.26	420.72	420.72
Overtopping	5	2,550	592	592	420.46	0.26	0.26	420.72	420.72
Max. Calc.	500								

LOADING HS20-44  
Allow 50#/sq. ft. for future wearing surface.

DESIGN SPECIFICATIONS

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

DESIGN STRESSES

FIELD UNITS (Substructure)

$f_c = 800$  psi  
 $f_s = 20,000$  psi (reinforcement)

FIELD UNITS (Superstructure)

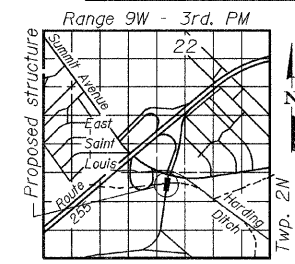
$f_y = 33,000$  psi (Structural Steel)

FIELD UNITS (New Construction)

$f_c = 3,500$  psi  
 $f_y = 60,000$  psi (reinforcement)  
 $f_y = 36,000$  psi (Structural Steel, AASHTO M270 Gr. 36)  
 $f_y = 50,000$  psi (Structural Steel, AASHTO M270 Gr. 50)

SEISMIC DATA

Seismic Performance Category (SPC) = B  
Bedrock Acceleration Coefficient (A) = 11.2 %g  
Site Coefficient (S) = 1.3



LOCATION SKETCH

GENERAL PLAN & ELEVATION  
SUMMIT AVENUE OVER

HARDING DITCH  
F.A.U. ROUTE 9181 - SECTION 52BR  
ST. CLAIR COUNTY  
STATION 39+89.80  
STRUCTURE NO. 082-0136