

Bench Mark: Chiseled "□" on top of the NW wingwall at the west abutment of structure  
082-0057 Sta. 245+85±, Elev. 462.91.

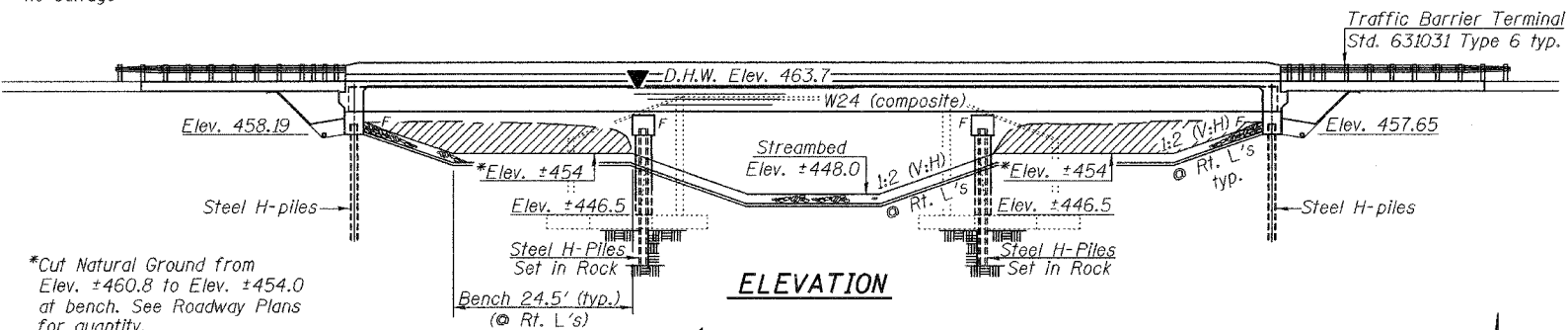
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOWNSHIP	SHEET NO.	SHEET NO. 1
F.A.U. 9251	28-3 BR-1	ST. CLAIR	101	24	18 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			

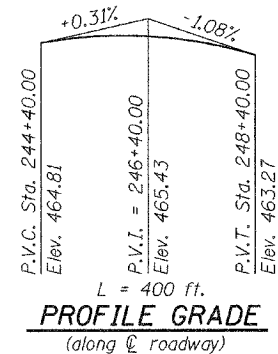
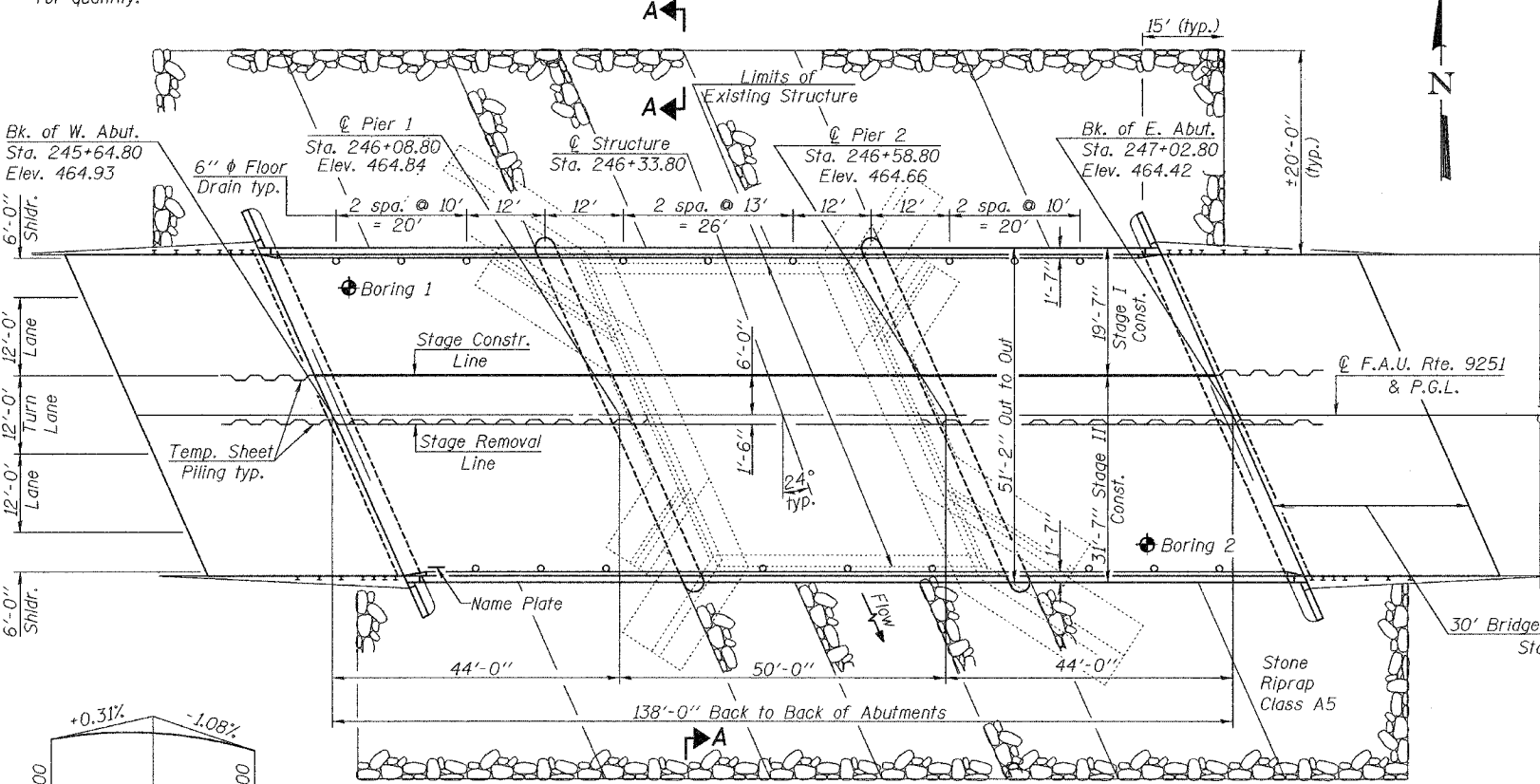
Contract #76394

Existing Structure: S.N. 082-0057 was originally built as a local bridge project, Sec. 28-15d. It was 23'-2" out-to-out with a 12" thick slab superstructure. In 1959, as S.B.I. Rte. 15, Sec. 28-BY, the substructure was widened and the superstructure was replaced with PPC deck beams, dimensions are 40'-5 1/2" bk. to bk. abutments and 46'-4" out to out with a 23°-53' skew. The abutments and wingwalls are supported by spread footings. The existing structure is to be removed and replaced utilizing Stage Construction.

No salvage



\*Cut Natural Ground from Elev. ±460.8 to Elev. ±454.0 at bench. See Roadway Plans for quantity.



DESIGNED	Rebecca Thompson
CHECKED	Curt Eroy
DRAWN	R. Sommer
CHECKED	xx7/CME

EXAMINED	March 16 2006
PASSED	Ralph J. Adams



EXPIRES 11-30-2006

**WATERWAY INFORMATION**

Exist. Low Grade Elev. 462.29 @ Sta. 249+33.80

Prop. Low Grade Elev. 462.29 @ Sta. 250+20.00

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	10	4098	304	825	462.6	1.4	1.1	464.0	463.7
Base	50	5799	304	825	463.5	1.2	1.2	464.7	464.7
Ex. Overtop.	100	6664	304	825	463.9	1.2	1.2	465.1	465.1
Pr. Overtop.	< 2	1900	304	825	461.2	0.9	0.9	462.1	462.1
Pr. Overtop.	< 5	2550	825	825	461.6	0.7	0.7	462.3	462.3

**INDEX OF SHEETS**

1. General Plan
2. Stage Construction Details
3. Temporary Concrete Barrier
- 4-5. Top of Slab Elevations
6. Superstructure
7. Superstructure Details
8. Diaphragm Details
9. Structural Steel
10. Structural Steel Details
11. Anchor Bolt Details
12. West Abutment
13. East Abutment
14. Pier 1
15. Pier 2
16. Bar Splicer Assembly Details
17. Cantilever Forming Brackets
18. Boring Logs

**GENERAL NOTES**

Fasteners shall be high strength bolts. Bolts 7/8" φ, open holes 15/16" φ, unless otherwise noted. Calculated weight of Structural Steel = 90,110 lb. (AASHTO M270, Grade 50) = 12,940 lb. (AASHTO M270, Grade 36).

Field welding of construction accessories will not be permitted to beams.

The main load carrying member components subject to tensile stress shall conform to the Supplemental Requirements for Notch Toughness Zone 2. These components are the wide flange beams and all splice plate material.

Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of 1/8 inch. Adjustment shall be made either by grinding the surface or by shimming the bearing. Two 1/8" adjusting shims, of the dimensions of the bottom bearing plate, shall be provided for each bearing in addition to all other plates or shims.

In addition to all other requirements of Section 512 of the Standard Specifications, splices for HP10x42 piles shall develop the full capacity of the steel's cross sectional area of the pile for tension, shear and bending forces. One approved method of achieving this requirement is full penetration butt welding of the entire cross section. Other types of splices meeting the full capacity requirement may be allowed subject to the approval of the Engineer.

Any proposal by the Contractor to use an alternate splice method must include adequate documentation demonstrating that the full tension, shear and bending capacities will be met. Appropriate welder qualifications will be required for the positions and processes used in splicing all piles. Nondestructive testing of completed welds will be limited to visual inspection.

Reinforcement bars shall conform to the requirements of AASHTO M 31 or M 322 Grade 60. Layout of slope protection system may be varied in the field to suit ground conditions as directed by the Engineer.

All Construction joints shall be bonded.

Anchor bolts shall be set before bolting diaphragms over supports.

The Inorganic zinc rich primer/Acrylic/Acrylic Paint System shall be used for shop and field painting of new structural steel except where otherwise noted. The color of the final finish coat for all steel surfaces shall be gray, Munsell No. 5B 7/1. See Special Provisions for "Cleaning and Painting New Metal Structures".

The Contractor shall drive one (1) HP10x42 test pile in a permanent location at West Abutment as directed by the Engineer before ordering the remainder of the piles.

Excavation behind existing abutment walls shall be done before removing the existing superstructure. The Contractor shall sawcut the existing abutments at the Stage Removal Line before Stage I Removal.

STATION 246+33.80  
BUILT 20 BY  
STATE OF ILLINOIS  
F.A.U. RT. 9251 SECTION 28-3BR-1  
LOADING HL-93  
STR. NO. 082-0398

**NAME PLATE**  
See Std. 515001

**TOTAL BILL MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
Porous Granular Embankment (Special)	Cu. Yd.		121	121
Stone Riprap, Class A5	Sq. Yd.		1585	1585
Filter Fabric	Sq. Yd.		1585	1585
Removal of Existing Structures	Each		1	1
Structure Excavation	Cu. Yd.		330	330
Concrete Structures	Cu. Yd.		164.9	164.9
Concrete Superstructure	Cu. Yd.	227.8		227.8
Bridge Deck Grooving	Sq. Yd.	705		705
Protective Coat	Sq. Yd.	852		852
Furnishing and Erecting Structural Steel	L. Sum	0.61		0.61
Stud Shear Connectors	Each	3120		3120
Reinforcement Bars, Epoxy Coated	Pound	54980	15590	70570
Furnishing Steel Piles HP 10x42	Foot		861	861
Driving Piles	Foot		389	389
Name Plates	Each	1		1
Temporary Sheet Piling	Sq. Ft.		1953	1953
Bar Splicers	Each	519	92	611
Underwater Structure Excavation Protection, Location 3	Each		1	1
Underwater Structure Excavation Protection, Location 4	Each		1	1
Floor Drains	Each	18		18
Pipe Underdrains for Structures, 4"	Foot		171	171
Geocomposite Wall Drain	Sq. Yd.		73	73
Setting Piles in Rock	Each		16	16
Test Pile Steel HP10x42	Each		1	1

**DESIGN STRESSES**

**FIELD UNITS**

f<sub>c</sub> = 3,500 psi  
f<sub>y</sub> = 60,000 psi (reinforcement)  
f<sub>y</sub> = 36,000 psi (M270 Grade 36)  
f<sub>y</sub> = 50,000 psi (M270 Grade 50)

**LOADING HL 93**

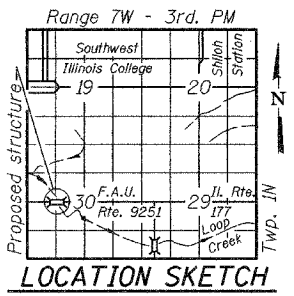
Allow 50#/sq. ft. for future wearing surface.

**DESIGN SPECIFICATIONS**

1998 AASHTO LRFD Bridge Design Specifications with 1999 thru 2003 Interims

**SEISMIC DATA**

Seismic Performance Zone (SPZ) = 2  
Bedrock Acceleration Coefficient (A) = 0.12g  
Site Coefficient (S) = 1.0



**GENERAL PLAN**  
**ILLINOIS ROUTE 177 OVER**  
**LOOP CREEK**  
**F.A.U. ROUTE 9251 - SECTION 28-3BR-1**  
**ST. CLAIR COUNTY**  
**STATION 246+33.80**  
**STRUCTURE NO. 082-0398**