Benchmark: #2 at Elev. 776.06 square cut on handhole located adjacent to the traffic signal in the Northwest quadrant of IL 58/IL 59 intersection.

Existing Structure: S.N. 016-2087 was built in 1977 as F.A.P. Route 77, Section 109-I at Station 1115+40.00. The two span superstructure consists of 21" deep precast prestressed concrete deck beams. The substructure consists of closed abutments and a solid wall pier-all resting on pile supported footings. The structure is 96'-0" back to back of abutments and 74'-0" out to out of deck. The existing superstructure is to be removed and replaced utilizing stage construction.

The Contractor shall salvage the existing aluminum hand rail and deliver to District Maintenance Yard as directed by the Engineer. Cost included with Removal of Existing Superstructures.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 1320 (IL58)	581 EXT -BR	COOK	40	20
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 1
11 SHEETS

Contract #60B82

INDEX OF SHEETS

SCOPE OF WORK

1. Total superstructure removal and replacement.
2. Substructure repair.

STATION 1115+40.00
REBUILT 20 BY
STATE OF ILLINOIS
F.A.U. RT. 1320 SECTION 581 EXT-BR
LOADING HS 20
STR. NO. 016-2087

NAME PLATE

See Std. 515001

GENERAL NOTES

Plan dimensions and details relative to existing plans are subject to routine 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 based upon the unit price bid for the work.

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

The Contractor is advised that the existing PPC Deck Beams are in a deteriorated condition with reduced load carrying capacity. It is the Contractor's responsibility to account for the condition of the beams when developing construction procedures for removal and replacement of the superstructure.

Attach new Name Plate to the inside face of parapet as shown. Existing name plate is to be removed, cleaned and relocated adjacent to new name plate. Cost included in the cost of Name Plates.

If the Contractor's procedures for existing beam removal or replacement of new beams involves placement of heavy equipment on the new deck beams, a detailed procedure shall be submitted to the Engineer for approval. The procedure shall include calculations, sealed by an Illinois Licensed Licensed Structural Engineer, verifying the structural adequacy of the beams for the proposed loads. Cost included with Removal of Existing Superstructures.

Repair of the pier caps shall be completed prior to placement of the new deck beams.

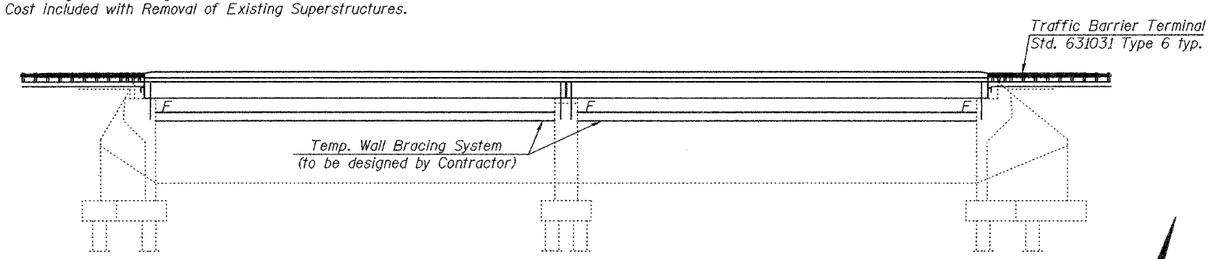
Reinforcement bars designated (E) shall be epoxy coated.

Concrete Sealer shall be applied to exterior vertical face and to outer one foot of bottom face of each fascia beam.

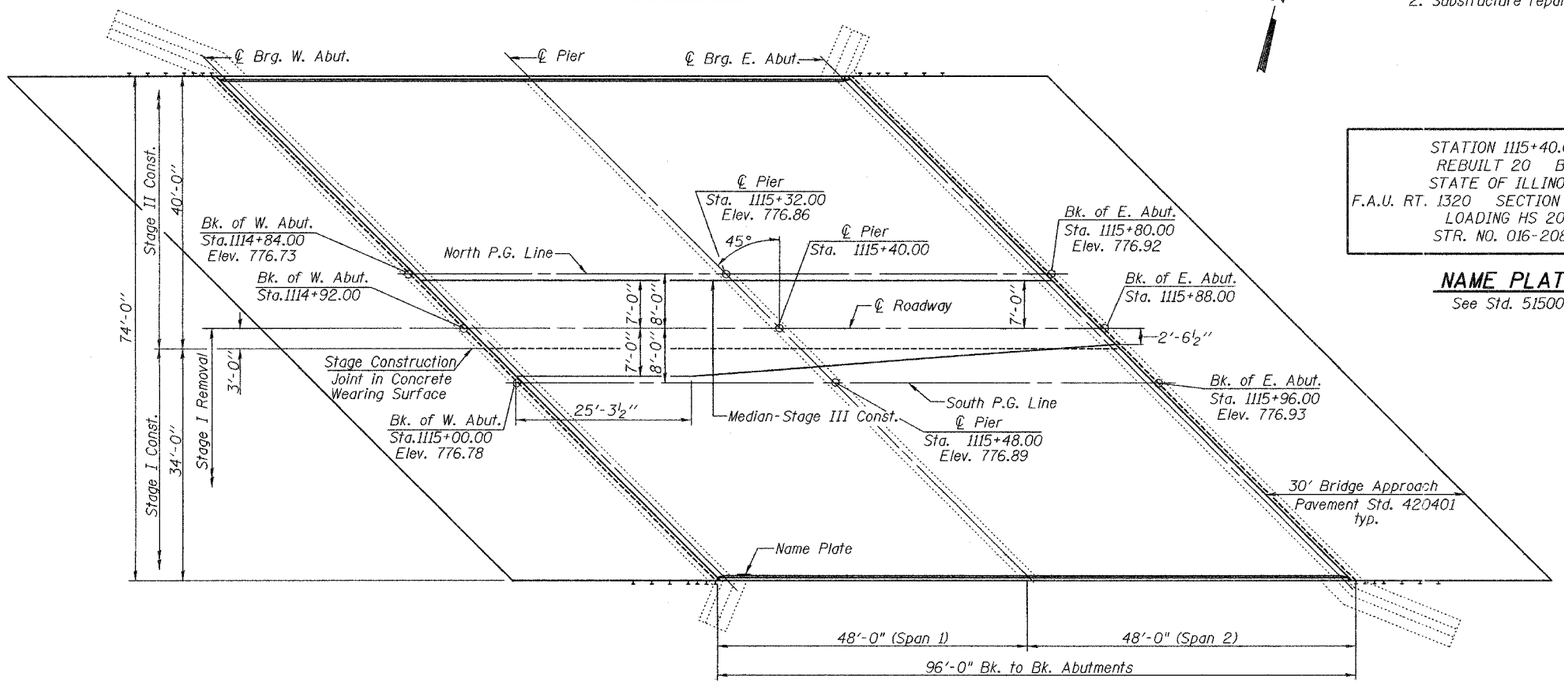
No in-stream work shall be allowed on this project.

The minimum thickness of concrete wearing surface shall be 5" and varies as required to adjust for the new profile grade and beam camber.

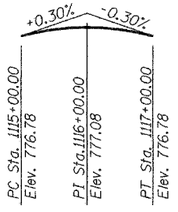
Utilities shall be removed from the existing structure prior to the proposed construction. See Roadway Plans for the details. They shall be re-attached to the proposed exterior beam with the use of cast-in-place inserts. For the pay item of this re-attachment, see Roadway Plans. For the details of these inserts see sheet 5 of 11.



ELEVATION



PLAN



PROFILE GRADE

(Along North P.G. Line (8' left of ℄ roadway) and South P.G. Line (8' right of ℄ roadway)).

LOADING HS 20-44

No allowance for future wearing surface.

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specfications

DESIGN STRESSES

NEW CONSTRUCTION

FIELD UNITS

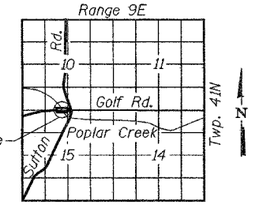
f'_c = 3,500 psi
f'_c = 5,000 psi (concrete wearing surface)
f_y = 60,000 psi (reinforcement)

PRECAST PRESTRESSED UNITS

f'_c = 5,000 psi
f'_{ci} = 4,000 psi
f'_s = 270,000 psi (½" ϕ low lax. strands)
f_{si} = 201,960 psi (½" ϕ low lax. strands)

EXISTING CONSTRUCTION

f_c = 1000 psi (Abuts. & Wing Walls)
f_c = 1400 psi (Pier)
f_s = 20000 psi (Reinforcement)
v_c = 75 psi (Footing)
n = 10



LOCATION SKETCH

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Superstructure	Cu. Yd.	55.0
Structural Repair of Concrete (Depth Equal to or Less than 5")	Sq. Ft.	248.5
Structural Repair of Concrete (Depth Greater than 5")	Sq. Ft.	14.0
Removal of Existing Superstructures	Each	1
Reinforcement Bars, Epoxy Coated	Pound	16100
Concrete Wearing Surface, 5"	Sq. Yd.	754.4
Bridge Deck Grooving	Sq. Yd.	556.7
Protective Coat	Sq. Yd.	827.3
Name Plates	Each	1
Precast Prestressed Concrete Deck Beams (21" Depth)	Sq. Ft.	6763
Bar Splicers	Each	105
Concrete Sealer	Sq. Ft.	504.0
Temporary Wall Bracing System	L. Sum	1

GENERAL PLAN & ELEVATION
IL 58 (GOLF ROAD) OVER POPLAR CREEK
F.A.U. RT. 1320 SEC. 581 EXT-BR
COOK COUNTY
STATION 1115+40.00
STRUCTURE NO. 016-2087

Rev.

DESIGNED Thuw P.N Daniel
CHECKED Stephen M. Ryan
DRAWN R. Sommer
CHECKED DPN/SMR

August 10 2007
EXAMINED Thomas Domagalski
ENGINEER OF BRIDGE DESIGN
PASSED Robert E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES

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

EXPIRES 11-30-08

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