ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 821	(15-2)BR	JEFFERSON	2	1
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		

CONTRACT #94995

B.M. #403 Chiseled Square on the Northeast Wingwall of Structure 041-0027, 17.5' Lt of Sta. 130+90, Elev. 455.235

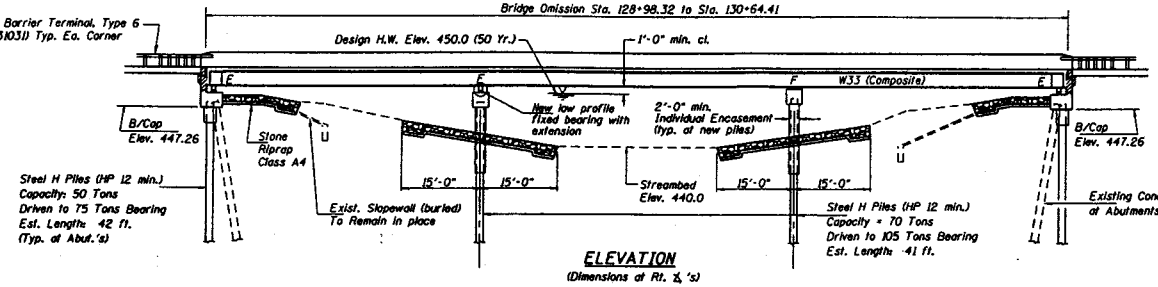
Existing Structure: S.N. 041-0027, Built in 1957 as SBI-15 Section 15-2B at Station 129+81. The existing structure is a Three Span Non-Composite Continuous Wide Flange Beam Bridge supporting a R.C. Slab on precast concrete pile bent piers and abutments. Overall length is 168'-0" back to back of abutments. Bridge width is 34'-5" out to out of deck with two 14'-0" traffic lanes measured face to face curbs. The contractor will remove and replace the existing concrete deck and complete other work as described in the scope of work.

Traffic shall be maintained at all times utilizing Stage Construction.

No Salvage.

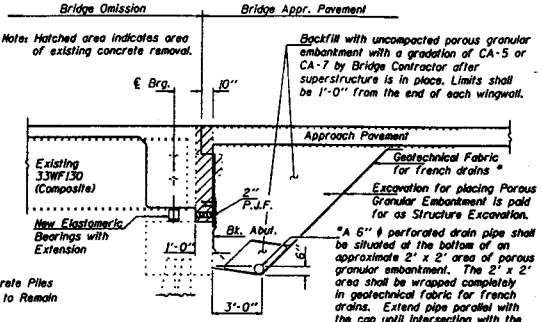
SCOPE OF WORK

1. Remove existing concrete deck, approach pavements, abutment backwalls and wingwalls.
2. Remove portions of existing slopewall as shown to facilitate substructure widening and abutment drain installation. Drive new piles and widen existing caps at abutments and piers.
3. Jack and Remove existing bearings at abutments and Pier 1. Place new elastomeric bearings with extensions at the abutments. Install new fixed bearings with extensions at Pier 1.
4. Install new beam lines and connect new diaphragms to existing beams.
5. Install stud shear connectors in positive moment areas of existing beam lines.
6. Install new semi-integral abutments with new dog-ear wingwall configuration.
7. Add slope protection by placing riprap as shown.



ELEVATION

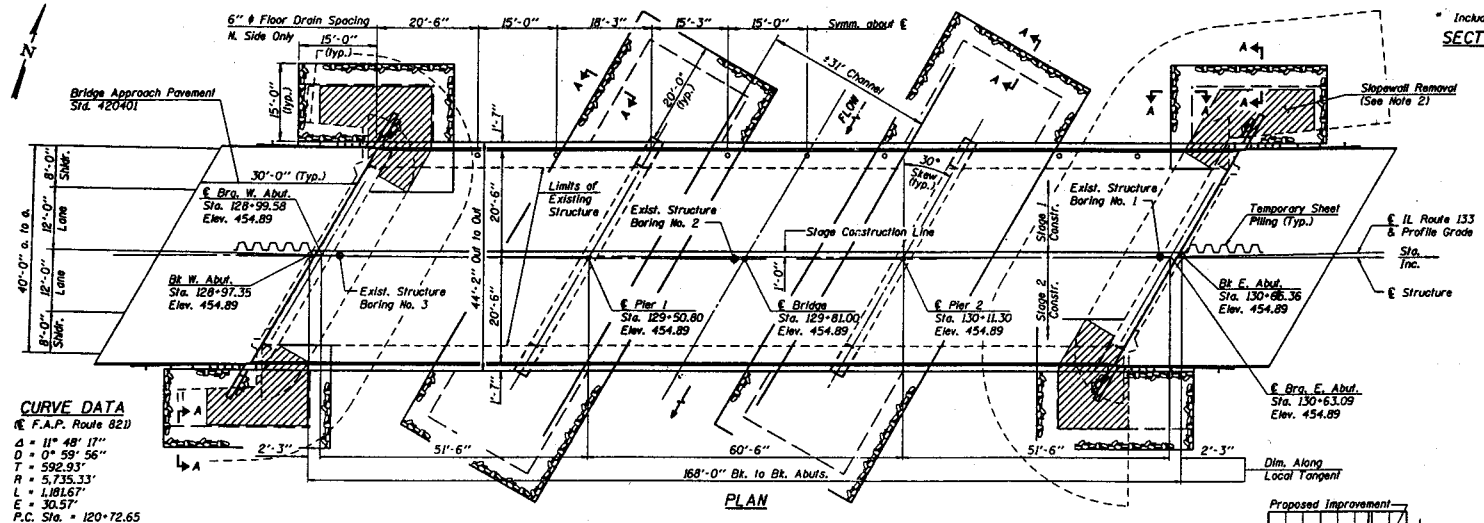
(Dimensions at Rt. ∡'s)



* Included in the cost of Porous Granular Embankment.

SECTION THRU SEMI-INTEGRAL ABUTMENT

(Dimensions at Rt. ∡'s)



PLAN

CURVE DATA

(℄ F.A.P. Route 821)

Δ = 11° 48' 17"
D = 0° 59' 56"
T = 592.93'
R = 5,735.33'
L = 1,181.67'
E = 30.57'
P.C. Sta. = 120+72.65
P.I. Sta. = 126+65.59
P.T. Sta. = 132+54.32
S.E. = 0.02'/Ft.

DESIGN SPECIFICATIONS

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

LOADING HS20-44

Allow 25#/Sq. Ft. for future wearing surface

SEISMIC DATA

Seismic Performance Category (SPC) = B
Bedrock Acceleration Coefficient (A) = 0.098g
Site Coefficient (S) = 1.2

DESIGN STRESSES

New Construction

f'_c = 3,500 psi
f_y = 36,000 psi (Structural Steel)
f_y = 60,000 psi (Reinforcement)

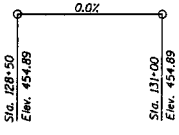
Existing Structure

f'_c = 1,400 psi (Superstructure)
f'_c = 800 psi (Substructure)
f_s = 20,000 psi (Reinforcement)
f_s = 18,000 psi (Structural Steel)

WATERWAY INFORMATION

Drainage Area = 21.10 Sq. Mi. Low Grade Elevation: 454.7 ft. @ Sta. 128+00

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.
	10	2090	651	651	449.5	0.9	0.9	450.4	450.4
Design	50	3030	714	714	450.0	1.5	1.5	451.5	451.5
Base	100	3440	741	741	450.2	1.7	1.7	451.9	451.9
Overlopping									
Max. Calc.	500	4355	794	794	450.6	2.4	2.4	453.0	453.0

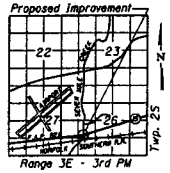


PROFILE GRADE

(along ℄ F.A.P. Rte. 821)

HIGHWAY CLASSIFICATION

FAP Route 821 - IL Route 15
Functional Class: Other Principal Arterial
ADT: 5,700 (2003); 7,973 (2027)
ADTT: 547 (2003); 765 (2027)
DHV: 627 (2027)
Design Speed: 60 mph
Posted Speed: 50 mph



LOCATION SKETCH

DESIGNED	Tim S. Howard
CHECKED	Ruben V. Boehler
DRAWN	Tim S. Howard
CHECKED	Michael D. Cummins

GENERAL PLAN & ELEVATION

IL ROUTE 15 OVER SEVEN MILE CREEK
F.A.P. ROUTE 821 SECTION (15-2)BR
JEFFERSON COUNTY
STA. 129+81.00
S.N. 041-0027

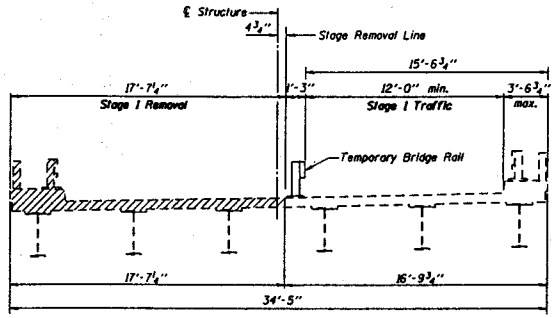
APPROVED

FEB 14 2006

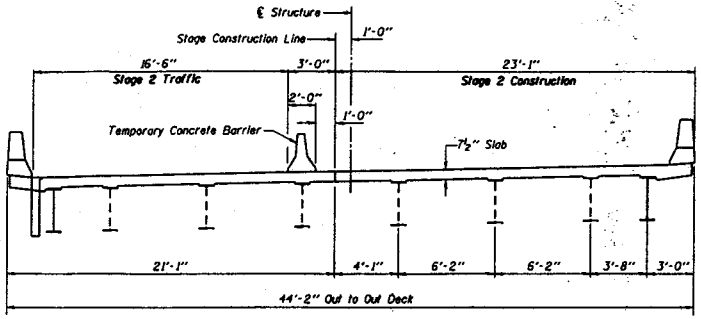
AS A BASIS FOR
PREPARATION OF DETAILED PLANS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 821	(15-2)BR	JEFFERSON	2	2
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		

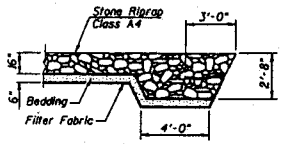
CONTRACT #94995



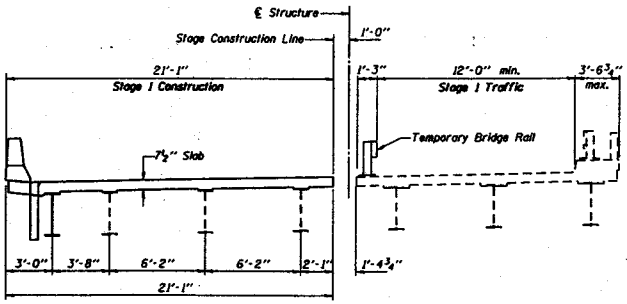
STAGE 1 REMOVAL
(Looking East)



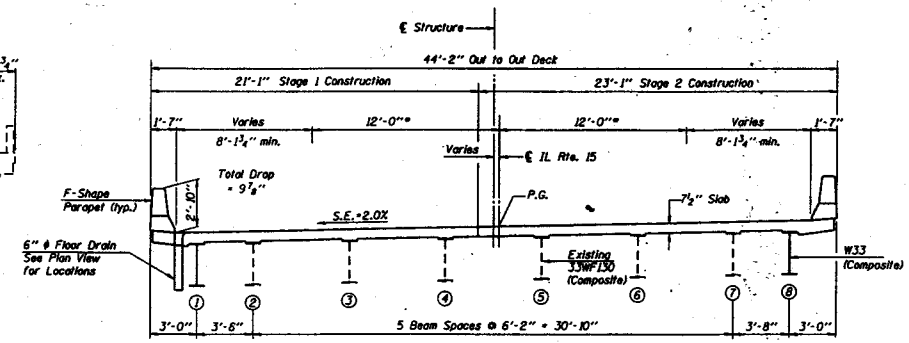
STAGE 2 CONSTRUCTION
(Looking East)



SEC A-A
Flank Stone Riprap Detail



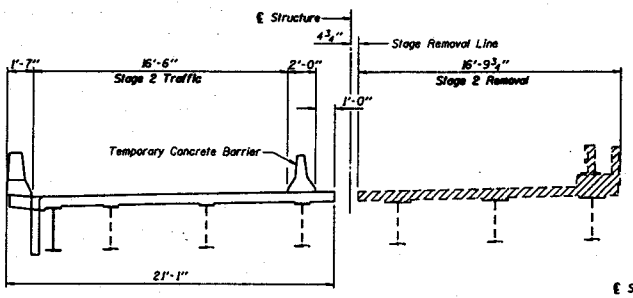
STAGE 1 CONSTRUCTION
(Looking East)



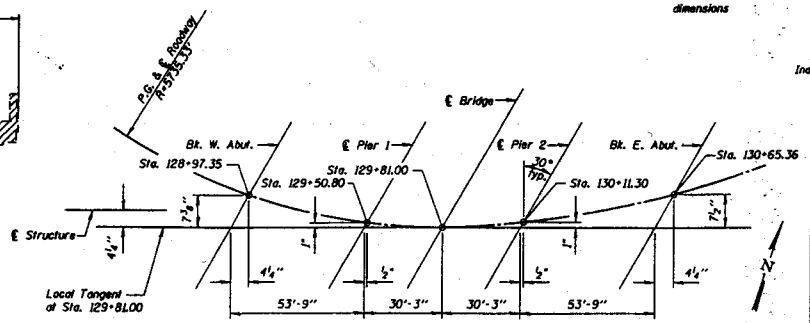
CROSS SECTION
(Looking East)

Note: Existing beams will be made composite.

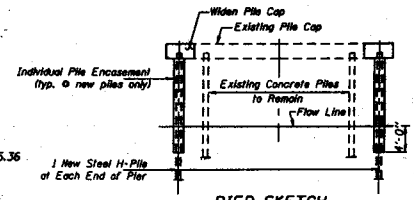
* radial dimensions



STAGE 2 REMOVAL
(Looking East)



OFFSET LAYOUT SKETCH



PIER SKETCH

DESIGNED	Tim S. Howard
CHECKED	Ruben V. Boehler
DRAWN	Tim S. Howard
CHECKED	Michael D. Cummins

CROSS SECTION &
STAGE CONSTRUCTION DETAILS
IL ROUTE 15 OVER SEVEN MILE CREEK
F.A.P. ROUTE 821 SECTION (15-2)BR
JEFFERSON COUNTY
STA. 129+81.00
S.N. 041-0027

APPROVED

FEB 14 2006

AS A BASIS FOR
PREPARATION OF DETAILED PLANS