Bench Mark: T.B.M. A - Chiseled "□" on SW wingwall of the southbound Illinois Route 203 bridge over Cahokia Canal. 51.22' LT. Sta. 151+52.06 Illinois Route 203. Elev. 415.82.

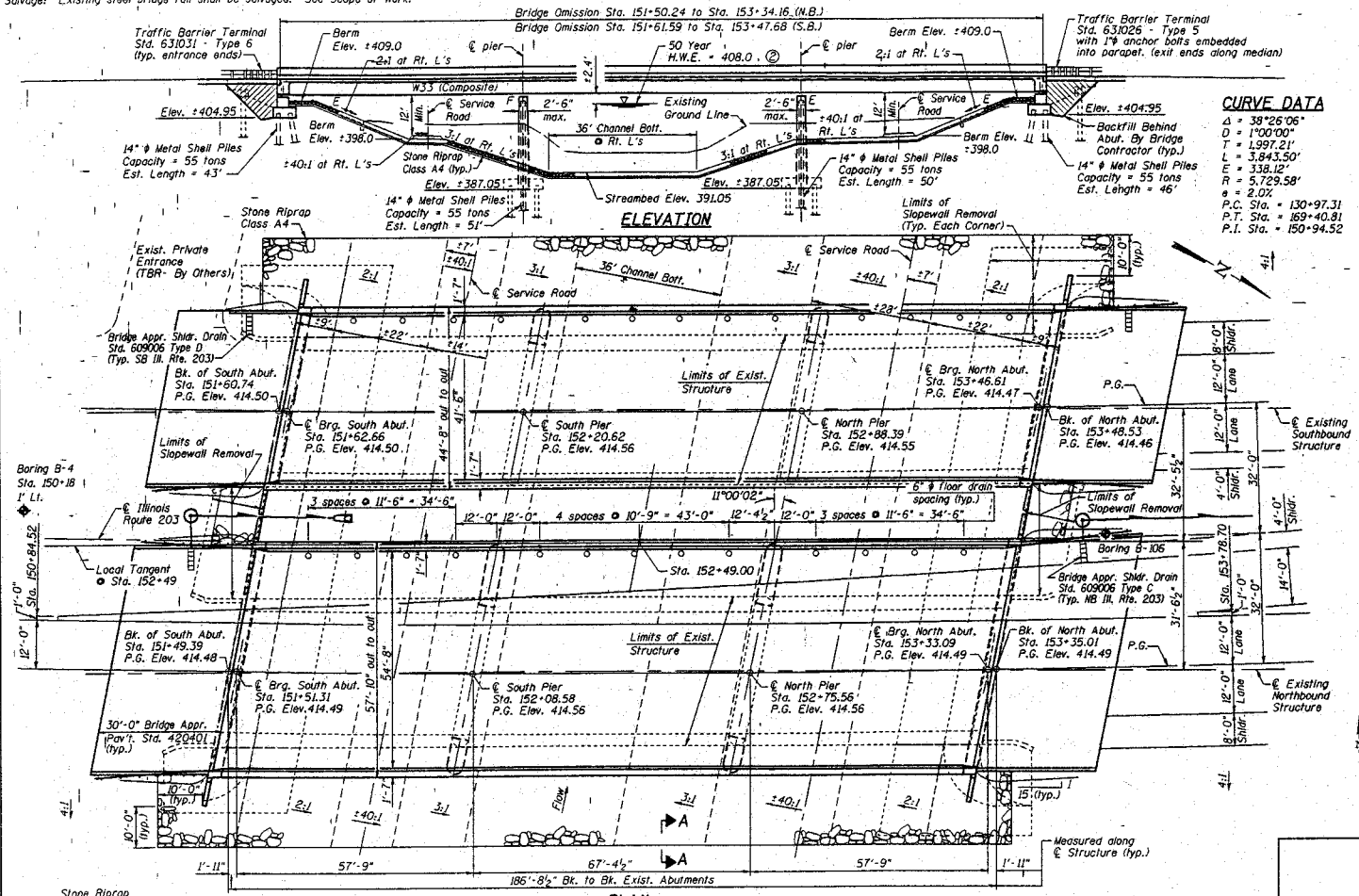
Existing Structure: S.N. 082-0026 and S.N. 082-0027 built as F.A. Route 4, Section 580-B in 1960. The existing structure is a dual 3-span continuous wide flange with a 7" non-composite deck. The abutments are pile bents on concrete friction piles and the solid piers are supported on concrete friction piles. The structure was rehabilitated in 1989 with partial and full depth deck patching, a new concrete overlay, new expansion devices, new steel bridge rail and new elastomeric bearings at the abutments. The length of each structure is 186'-8½" bk. to bk. of abutments and 36'-7" out to out of deck. Traffic to be maintained utilizing temporary cross-overs.

Salvage: Existing steel bridge rail shall be salvaged. See Scope of Work.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 594	580-BR	ST. CLAIR		2
PROJ. REF. SHEET NO. 1		ALTERNATE PROJ. REF.		

SHEET NO. 1
2 SHEETS



CURVE DATA

Δ = 38°26'06"
D = 1°00'00"
T = 1,997.21'
L = 3,843.50'
E = 338.12'
R = 5,729.58'
e = 2.0%
P.C. Sta. = 130+97.31
P.T. Sta. = 169+40.81
P.I. Sta. = 150+94.52

NOTES

① The width between the guardrails shall be the width between the bridge rails or parapets which will require approach shoulder widening.
② The overtopping event represents overtopping of the spoil banks. The capacity of the canal has been estimated by the Corp. of Engineers to be approximately a 10 year frequency event. Flows from events larger than the 10 year event overtop the canal spoil banks several miles upstream of this structure and go into storage. Thus discharges from events larger than this do not appear at this structure.
③ This discharge has been estimated from an existing condition backwater analysis (HEC-RAS model). This discharge approximates a stage that could be conveyed through the canal without significant losses of flow due to overtopping of spoil banks.

SCOPE OF WORK

1. Work will be done utilizing staged construction. Stage I work will be done on the northbound structure. Stage II work will be done on the southbound structure. Staged construction to be accomplished using cross over.
2. Remove and replace deck.
3. Remove expansion bearings at the North Piers and replace with elastomeric bearings. Existing fixed bearings at the South Piers will be reused.
4. Modify and widen the abutments as semi-integral with new dog ear wingwalls and new elastomeric bearings.
5. Widen piers with pile bent sections as shown in pier sketch.
6. Add new beam lines and install stud shear connectors in positive moment areas of existing and new beams lines. Existing beams shall not be raised. The difference in elevation will be made up in the fillets.
7. Remove and replace approach slabs.
8. Existing steel shall be painted under a separate paint only contract.
9. Existing end diaphragms shall remain in place.
10. A portion of the existing slopewall will need to be removed to accommodate the new dog-ear type wingwalls and embankment widening.
11. Inlet and piping details at bridge approach shoulder drains to be included in roadway plans.

DESIGN SPECIFICATION

1996 AASHTO WITH 1997, 1998, 1999, 2000 and 2002 Interims

LOADING HS20-44

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

SEISMIC DATA

Seismic Performance Category (SPC) = B
Bedrock Acceleration Coefficient (A)=0.12g
Site Coefficient (S) = 1.5

DESIGN STRESSES

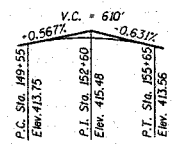
FIELD UNITS (Existing Construction)

f'c = 1,400 psi (superstruct. and substruct. without earth pressure)
f'c = 1,000 psi (substructure with earth pressure)
fs = 20,000 psi (reinf.)
fs = 18,000 psi (struct. steel)
n = 10

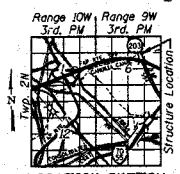
DESIGN STRESSES

FIELD UNITS (New Construction)

f'c = 3,500 psi
fy = 60,000 psi (reinf.)
fy = 36,000 psi (M270 Gr. 36) struct. steel
fy = 50,000 psi (M270 Gr. 50) struct. steel



PROFILE GRADE



LOCATION SKETCH

HIGHWAY CLASSIFICATION

F.A.P. Rte. 594 - Illinois Route 203
ADT: 23200 (2006); 34500 (2026)
DHV: 2320 (2006); 3450 (2026)
ADTT: 2668 (2006); 3968 (2026)
Functional Class: Other Principal Arterial
Design Speed: 45 mph
Posted Speed: 35 mph (N.B.); 45 mph (S.B.)

WATERWAY INFORMATION ②③

Drainage Area = 90.0 mi² Low Grade Elev. 414.5 ft. @ Sta. 153+47

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Natural H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
Overtopping	10	3200	1116	1730	408.0	0.1	0.0	408.1	408.0
Design	50	3200	1116	1730	408.0	0.1	0.0	408.1	408.0
Base	100	3200	1116	1730	408.0	0.1	0.0	408.1	408.0
Max. Calc.	500	3200	1116	1730	408.0	0.1	0.0	408.1	408.0

GENERAL PLAN
ILLINOIS ROUTE 203 OVER
CAHOKIA CANAL
F.A.P. ROUTE 594 - SECTION 580-BR
ST. CLAIR COUNTY
STA. 152+49.00
STRUCTURE NO. 082-0026 (N.B.)
STRUCTURE NO. 082-0027 (S.B.)

APPROVED

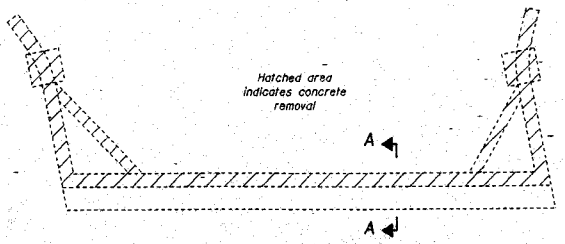
Conditionally Approved

MAR 28 2003

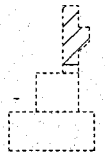
AS A BASIS FOR
PREPARATION OF DETAILED PLANS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

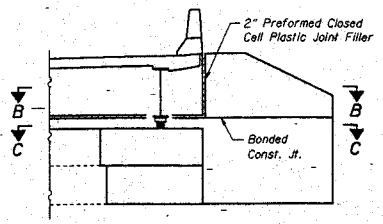
SHEET NO. 2
2 SHEETS



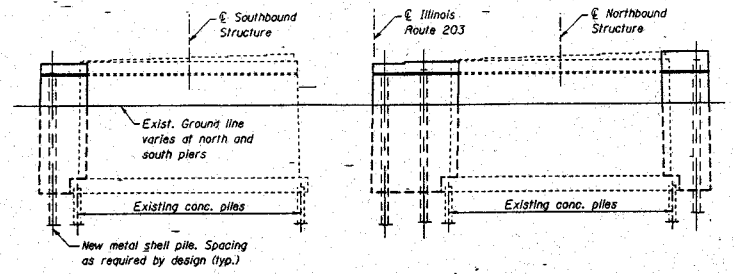
CONCRETE REMOVAL DETAIL AT ABUTMENTS



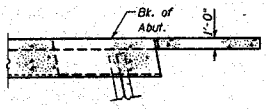
SECTION A-A



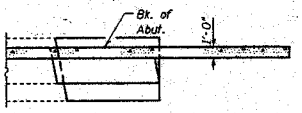
ELEVATION VIEW



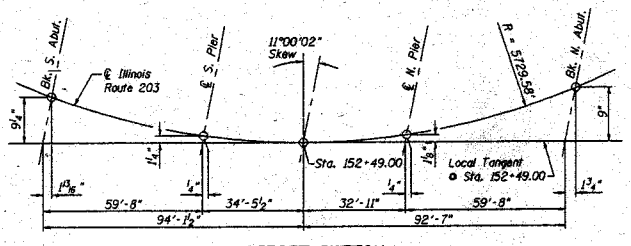
PIER SKETCH (LOOKING NORTH)



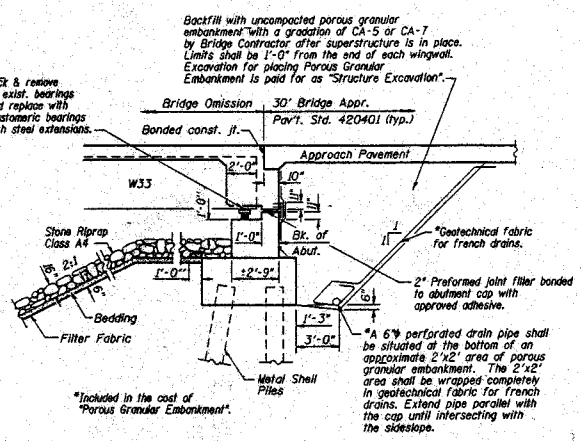
SECTION B-B



SECTION C-C

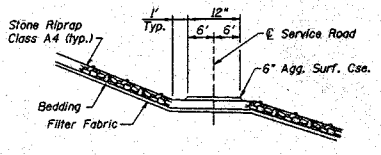


OFFSET SKETCH

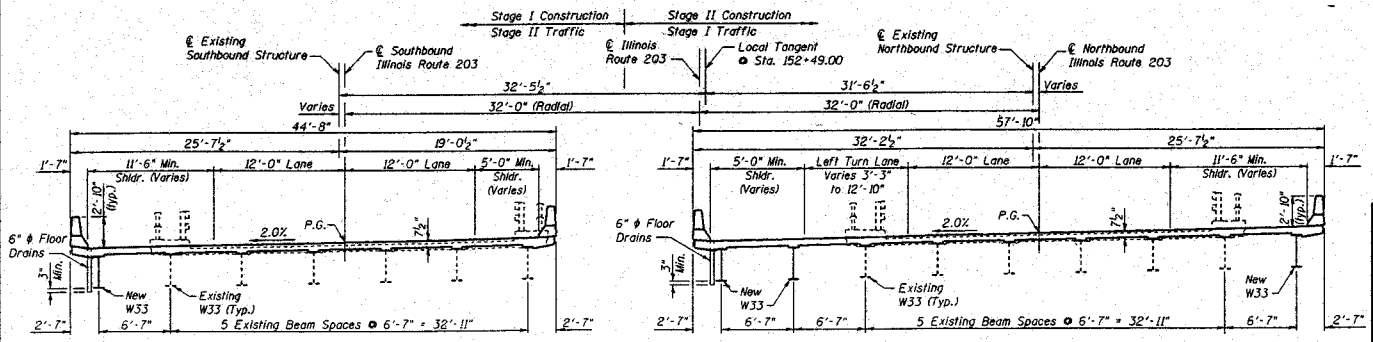


SECTION THRU ABUTMENTS AT RT. L's

(Section shown along abutment widening.
– Section along existing abutment similar.)



SERVICE ROAD DETAIL



SECTION THRU BRIDGE DECK (LOOKING NORTH)

DETAILS
ILLINOIS ROUTE 203 OVER
CAHOKIA CANAL
F.A.P. ROUTE 594 SECTION 580-BR
ST. CLAIR COUNTY
STA. 152+49.00
STRUCTURE NO. 082-0026 (N.B.)
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