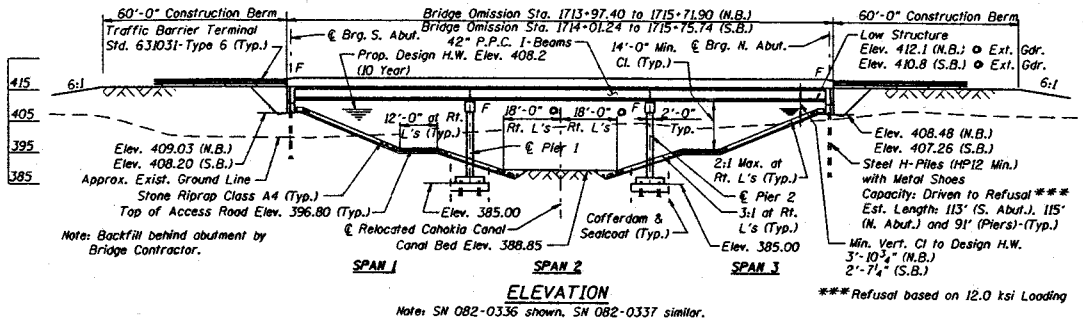
Bench Mark: BM #3 Railroad spike in powerpole at East side of Route 3; on the third pole North of Industrial Drive. Elev. 412.16

Existing Structure: None

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| S.B.I.R. F.A. 788 | 520-2-18 | ST. CLAIR | | |

SHEET NO. 1
2 SHEETS




Note: Backfill behind abutment by Bridge Contractor.

*** Refusal based on 12.0 ksi Loading

## ELEVATION

Note: SN 082-0336 shown. SN 082-0337 similar.

## CURVE DATA - RAMP D

△ = 81°-24'-26"
D = 5°-15'-00"
T = 938.83'
L = 1550.61'
E = 348.25'
R = 1091.35'
P.C. = Sta. 546+46.43
P.I. = Sta. 555+85.26
P.T. = Sta. 561+97.05
** S.E. Transition
Section A-A Sta. = 560+65.82
Section B-B Sta. = 561+97.05
Section C-C Sta. = 563+93.90
Section D-D Sta. = 564+92.33
Full S.E. = 7.25%

** Standard Entrance Ramp Transition Superelevation Transition, Figure 37-6K, BDE Manual

## WATERWAY INFORMATION

| Drainage Area = 90 sq. mi. | | | | | | Low Grade Elev. 410.80 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Flood | Freq. Yr. | Q C.F.S. | Opening Sq. Ft. | | Nat. H.W.E. | Head - Ft. | | Headwater Elev. | | | |
| | | | Exist. | Prop. | | Exist. | Prop. | Exist. | Prop. | | |
| Design | 10 ① | 4,200② | NA | 1,890③ | 410.0④ | NA | 0.0④ | NA | 408.2 | | |
| Base | 100① | NA | NA | NA | NA | NA | NA | NA | NA | | |
| Overtopping | - | - | - | - | - | - | - | - | - | | |
| Max. Calc. | 500① | NA | NA | NA | NA | NA | NA | NA | NA | | |

① 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 up stream of this structure and go into storage. Thus discharges from events larger than this do not appear at this structure.

② 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.

③ High water estimated at existing NS railroad bridge along existing canal alignment.

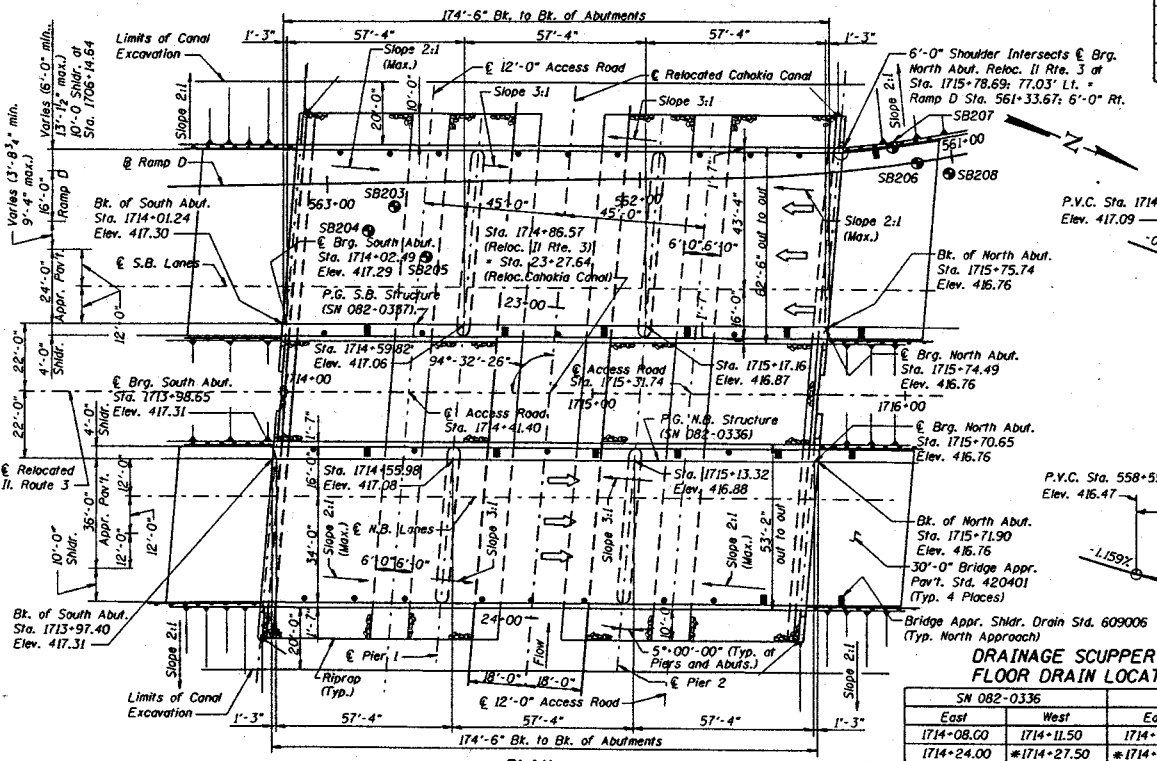
④ Proposed canal alignment and new bridges will result in a water surface elevation lower than the existing condition. (Headwater elevation is based on Alternate 5 of the Culvert Condition Report and Type Study)

⑤ Opening area is based upon a headwater elevation of 408.2.

## BORING LOCATIONS

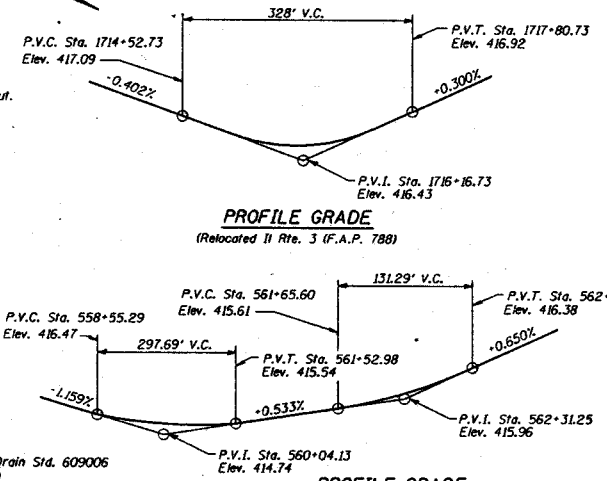
| Boring Number | Station | Offset |
|---|---|---|
| SB203 (SPT) | 1714+37 | 48' Lt. |
| SB204 (ST) | 1714+28 | 52' Lt. |
| SB205 (ST) | 1714+46 | 44' Lt. |
| SB206 (SPT) | 1716+04 | 75' Lt. |
| SB207 (ST) | 1715+95 | 79' Lt. |
| SB208 (ST) | 1716+13 | 71' Lt. |

Note: Offsets are measured from ℄ Relocated Il Rte. 3.




## PLAN

Note: Span lengths are measured along profile grade line. Layout of slope protection system may be varied to suit ground conditions in the field, as directed by the Engineer.




## PROFILE GRADE

(Relocated Il Rte. 3 (F.A.P. 788)

## PROFILE GRADE

(@ Ramp D)

## HIGHWAY CLASSIFICATION

Reloc. Il Rte. 3 (F.A.P.-788)
Functional Class: Urban Expressway
ADT: 13,000(1998); 16,500(2018)
ADTT: 793 (1998); 1007 (2018)
DHV: 1415 (2018)
Design Speed: 50 m.p.h.
Posted Speed: 45 m.p.h.

## LOADING HS20-44

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

## DESIGN SPECIFICATIONS

1996 AASHTO and 1997,1998, 1999 and 2000 Interims.

## DESIGN STRESSES

FIELD UNITS
$f'_c$ = 3,500 psi, n=9
$f_y$ = 60,000 psi (reinforcement)

PRECAST PRESTRESSED UNITS
$f'_c$ = 6,000 psi
$f'_{ci}$ = 5,000 psi
$f'_s$ = 270,000 psi (½" ϕ low relax. strands)
$f'_{si}$ = 201,960 psi (½" ϕ low relax. strands)

## SEISMIC DATA

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

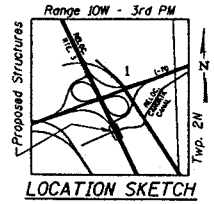
## LEGEND

- Proposed Boring Location
- Drainage Scupper
- Floor Drain

## DRAINAGE SCUPPER AND FLOOR DRAIN LOCATIONS

| SN 082-0336 | | SN 082-0337 | |
|---|---|---|---|
| East | West | East | West |
| 1714+08.00 | 1714+11.50 | 1714+14.00 | 1714+19.00 |
| 1714+24.00 | *1714+27.50 | *1714+30.00 | 1714+35.00 |
| 1714+40.00 | 1714+43.50 | 1714+46.00 | 1714+51.00 |
| 1714+65.00 | *1714+69.50 | *1714+72.00 | 1714+76.50 |
| 1714+81.00 | 1714+85.50 | 1714+88.00 | 1714+92.50 |
| 1714+97.00 | *1715+01.50 | *1715+04.00 | 1715+08.50 |
| 1715+23.00 | *1715+27.50 | *1715+30.00 | 1715+34.00 |
| 1715+39.00 | 1715+43.50 | 1715+46.00 | 1715+50.00 |
| *1715+55.00 | *1715+59.50 | *1715+62.00 | 1715+66.00 |

* Indicates DS-12 Scupper locations. All other locations are Floor Drain locations.




## LOCATION SKETCH

RECEIVED
JAN 2 5 2002
DIST B

TS&L
GENERAL PLAN AND ELEVATION
FAP ROUTE 788-SECTION 520-2-18
RELOCATED IL ROUTE 3
OVER RELOCATED CAHOKIA CANAL
ST. CLAIR COUNTY
STA. 1714+86.57
STRUCTURE NUMBER 082-0336 (N.B.)
STRUCTURE NUMBER 082-0337 (S.B.)

| | |
|---|---|
| DESIGNED | R.Riley |
| CHECKED | M. Cronin |
| DRAWN | J.Corley |
| CHECKED | G. Dee |

APPROVED

FEB 11 2002

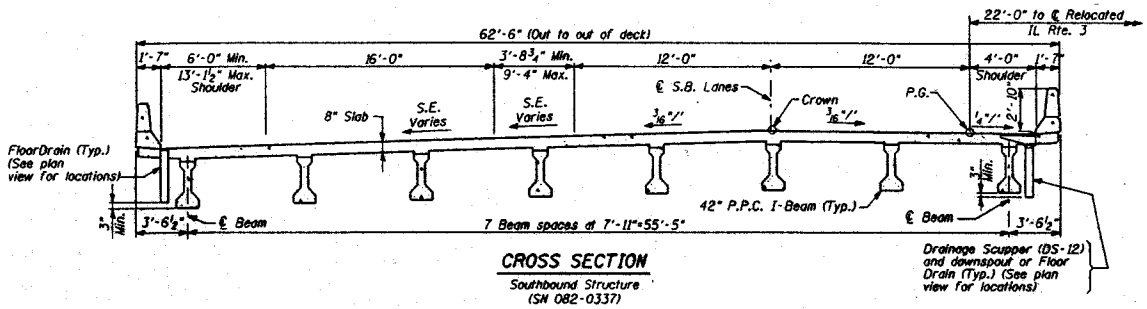
Conditionally Approved

AS A BASIS FOR
PREPARATION OF DETAILED PLANS

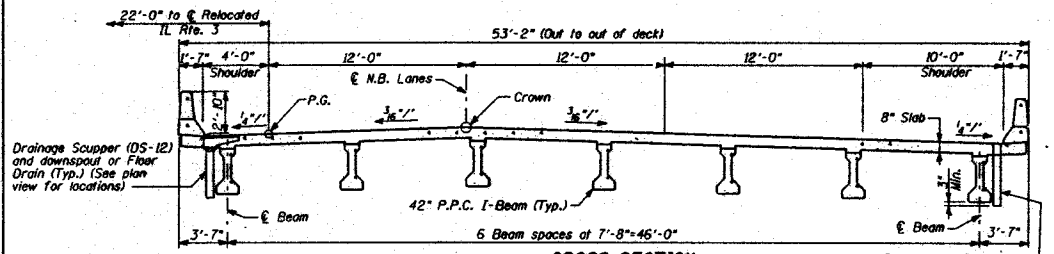
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| F.A.P. 788 | 520-2-1B | ST. CLAIR | | |

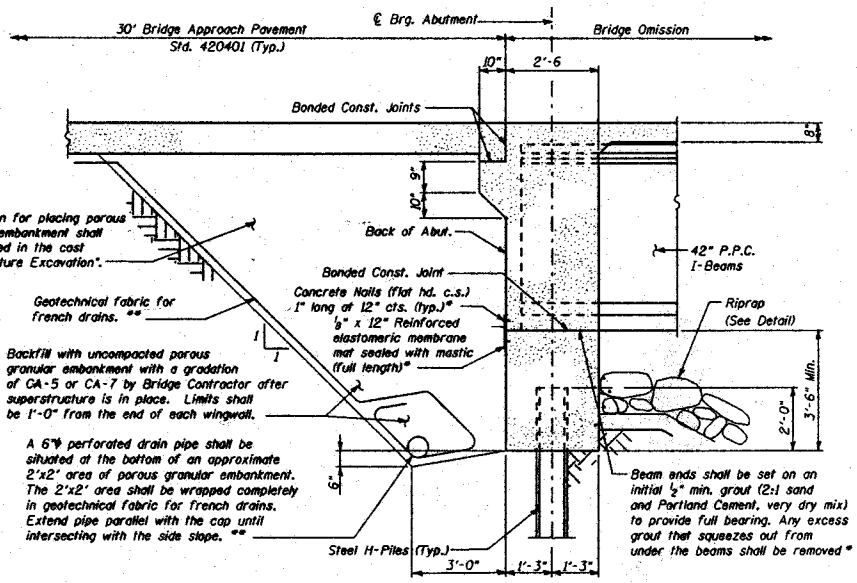
SHEET NO. 2
2 SHEETS




CROSS SECTION
Southbound Structure
(SN 082-0337)

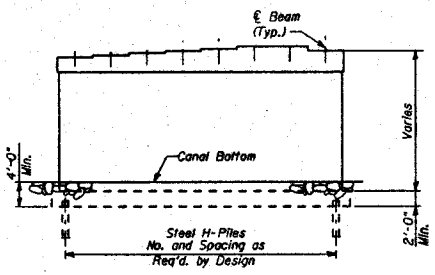



CROSS SECTION
Northbound Structure
(SN 082-0336)

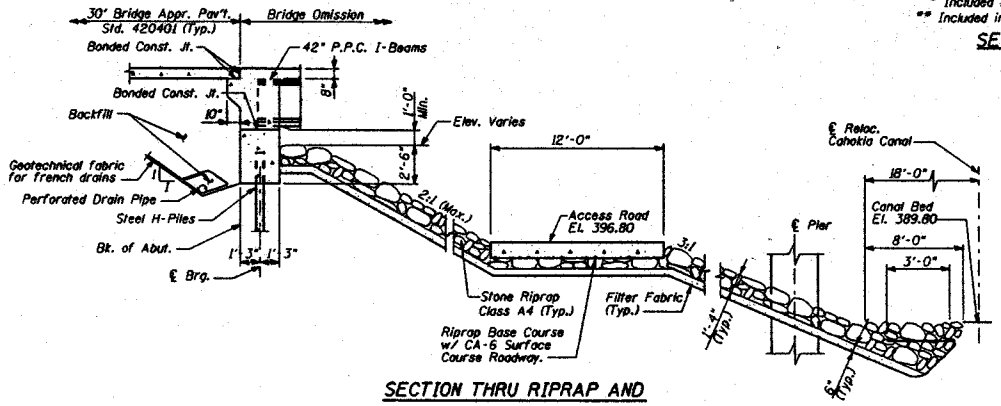



* Included in the cost of "Concrete Structures"
** Included in the cost of "Porous Granular Embankment"

SECTION AT ABUTMENT
(Integral)




PIER SKETCH
Note: Southbound pier shown. Northbound similar except for number of beams.




SECTION THRU RIPRAP AND INTEGRAL ABUTMENT
(Dimensions at Rt. L's)

| | |
|---|---|
| DESIGNED | R. Riley |
| CHECKED | M. Cronin |
| DRAWN | J. Carley |
| CHECKED | G. Dee |

APPROVED

FEB 11 2002

AS A BASIS FOR PREPARATION OF DETAILED PLANS

TS&L
SECTIONS AND DETAILS
FAP ROUTE 788- SECTION 520-2-1B
RELOCATED IL ROUTE 3
OVER RELOCATED CAHOKIA CANAL
ST. CLAIR COUNTY
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