B.M. Top of North West wingwall, elevation 769.34

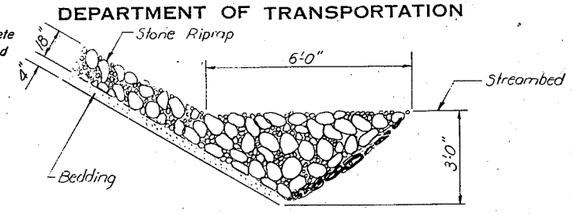
Existing Structure: #008-0004 The existing structure built in 1929 as SBI Rte. 27, Section 4B is a 58.3' Bk. to Bk. single span bridge. The existing structure has an out to out width of 26'-0" and is supported on transverse concrete T-beams which are supported on two concrete edge beams. The existing structure shall be removed and replaced with a new bridge. Stage construction shall be utilized so as to maintain one way traffic during reconstruction.

No salvage.

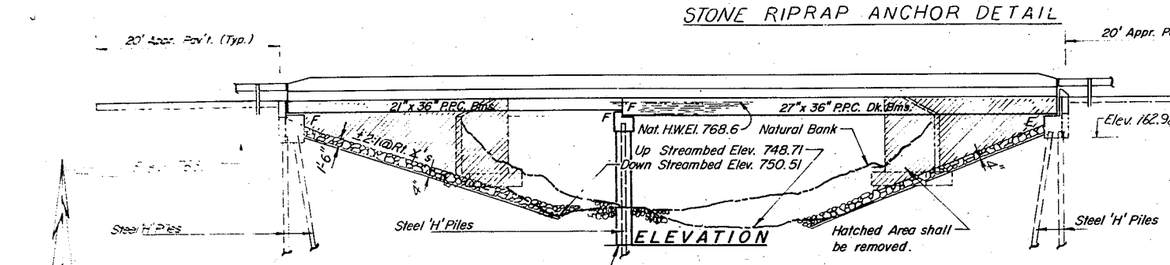
# STATE OF ILLINOIS
# DEPARTMENT OF TRANSPORTATION

| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| S.B.I. F.A. 17 | 4BR-1 | Carroll | 22 | 11 |
| FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT- | | |

SHEET NO. 1
12 SHEETS



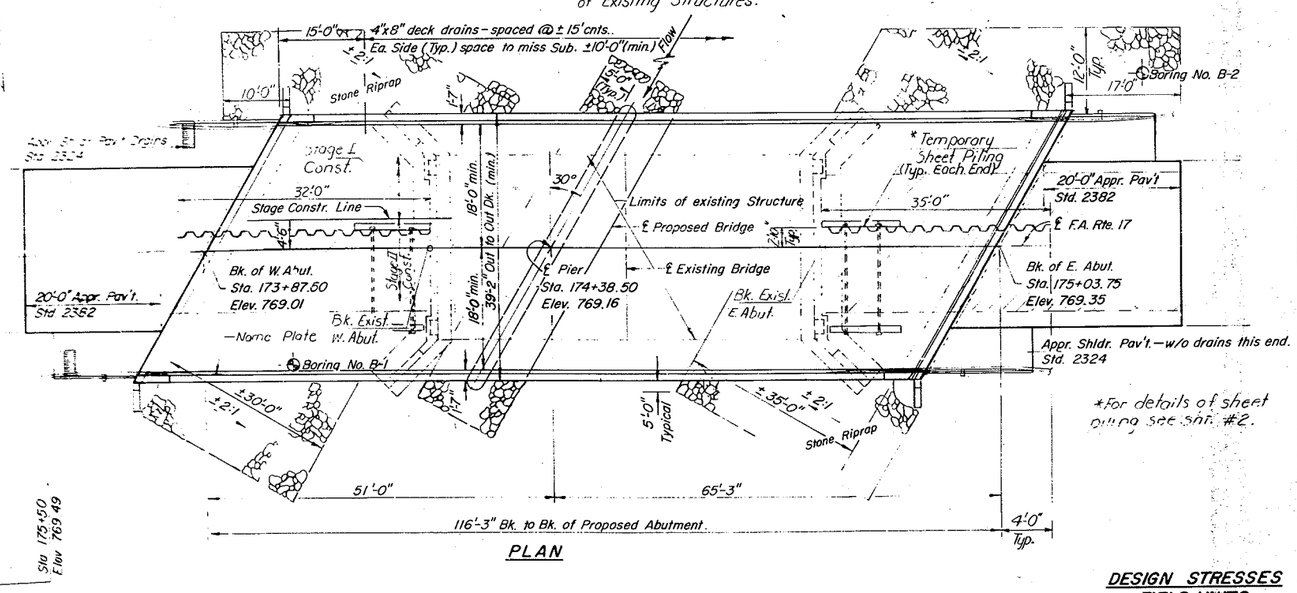

STONE RIPRAP ANCHOR DETAIL




Note:
Cost of Pav't. Removal and Earth Excavation as indicated in hatched areas is incidental to the cost of Removal of Existing Structures.

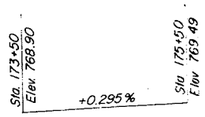
STATION 174+45.62
BUILT 19 BY
STATE OF ILLINOIS
F.A. RT. 17 SEC. 4BR-1
F.A. PROJECT BR-F-17(62)
LOADING H520
STR. NO. 008-0030

NAME PLATE
(See Std. 2113)




PLAN

*For details of sheet piling see sht. #2.




PROFILE GRADE

## GENERAL NOTES

See Proposal for Boring Data.

The top surface of the beams shall be finished in accordance with Article 505.06 of the Standard Specifications except that the surface shall not be roughened by brooming. The finished surface shall be free of depressions or high spots with sharp corners, and the top edge of keys shall be rounded or chamfered a minimum of ¼".

Reinforcement bars shall conform to the requirements of AASHTO M-31 or M-53, Grade 60.

Limits of Waterproofing Membrane System shall be from east end of deck beams to two feet beyond west end of deck beams and toe to toe of parapets as shown on sheet #8.

Protective Coat shall not be applied to surfaces to which Waterproofing Membrane System is applied.

A Calcium Nitrite Corrosion Inhibitor, as covered in the Special Provisions, shall be used in the concrete for precast prestressed concrete deck beams.

The contractor shall drive one steel HP8x36 test pile in a permanent location of the west abutment and one steel HP10x42 test pile in a permanent location at the east abutment as directed by the Engineer before ordering the remainder of piles.

Layout of stone riprap may be varied in the field to suit ground conditions as directed by the Engineer.

Sheet Piling and Tieback anchorage shall be installed prior to Stage I Removal. Steel Rod Tiebacks shall be installed under Stage I Traffic Lane.

Sheet piling shall be removed after Stage II traffic lane is opened and prior to Stage II Construction. Cost of anchorage for sheet piling shall be incidental to Temporary Sheet Piling.

## TOTAL BILL OF MATERIAL

| Item | Unit | Super | Sub | Total |
|---|---|---|---|---|
| Bituminous Concrete Surface Course, Class I | Tons | 60 | | 60 |
| Removal of Existing Structures | Each | | | 1 |
| Structure Excavation | Cu. Yd. | | 75 | 75 |
| Cofferdam Excavation | Cu. Yd. | | 105 | 105 |
| Cofferdams | Each | | 1 | 1 |
| Protective Coat | Sq. Yd. | 93 | | 93 |
| Class X Concrete | Cu. Yd. | 38.9 | 134.0 | 172.9 |
| Seal Coat Concrete | Cu. Yd. | | 58.6 | 58.6 |
| Precast Prestressed Concrete Deck Beams (21" Depth) | Sq. Ft. | 1919 | | 1919 |
| Precast Prestressed Concrete Deck Beams (27" Depth) | Sq. Ft. | 2468 | | 2468 |
| Reinforcement Bars | Pound | 1890 | 8100 | 9990 |
| Reinforcement Bars (Epoxy Coated) | Pound | 2100 | | 2100 |
| Steel Piles HP8x36 | Lin. Ft. | | 660 | 660 |
| Test Pile Steel HP8x36 | Each | | 1 | 1 |
| Steel Piles HP10x42 | Lin. Ft. | | 168 | 168 |
| Test Pile Steel HP10x42 | Each | | 1 | 1 |
| Name Plates | Each | 1 | | 1 |
| Stone Riprap | Sq. Yd. | | 772 | 772 |
| Temporary Bridge Rail | Lin. Ft. | 113 | | 113 |
| Neoprene Expansion Joint 2" | Lin. Ft. | 44 | | 44 |
| Portland Cement Mortar Fairing Course | Lin. Ft. | 1350 | | 1350 |
| Waterproofing Membrane System | Sq. Yd. | 458 | | 458 |
| Temporary Slab Support System | L. Sum | | 1 | 1 |
| Temporary Sheet Piling | Sq. Ft. | | 1608 | 1608 |

## WATERWAY INFORMATION

Drainage Area = 38.5 sq. mi. Low Grade El. 768.2 @ Sta. 172+00.00

| 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. |
|---|---|---|---|---|---|---|---|---|---|
| Design | 50 | 4802 | 443 | 635 | 768.6 | 0.59 | 0.42 | 769.19 | 769.02 |
| Base | 100 | 5493 | 443 | 635 | 769.1 | 0.55 | 0.35 | 769.65 | 769.45 |
| Overtopping | 25 | 4081 | - - | 635 | 768.1 | —— | 0.41 | - - | 768.51 |
| Max. Calc. | 500 | —— | —— | —— | —— | —— | —— | —— | —— |

## DESIGN STRESSES

**FIELD UNITS**

$f'c$ = 3,500 psi
$f_y$ = 60,000 psi (Reinf.)
$f_s$ = 20,000 psi (Struct.)

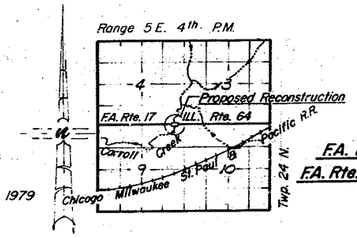
**PRECAST PRESTRESSED UNITS**

$f'c$ = 5,000 psi
$f'ci$ = 4,000 psi
$f'_s$ = 270,000 psi (½"ϕ Strands)
$f'_{si}$ = 189,000 psi (½"ϕ Strands)

**LOADING HS 20-44**

Design Specifications: 1977 AASHTO; 1978, 1979 1980 and 1981 Interim Specifications.

Allow 25#/sq. ft. for future wearing surface.




**GENERAL PLAN**
**F.A. Rte. 17 Over CARROLL CREEK**
**F.A. Rte. 17 ILL. Rte. 64 SECTION 4BR-1**
**CARROLL COUNTY**
**Sta. 174+45.62**

| | |
|---|---|
| DESIGNED | M. Bloxdorf |
| CHECKED | J.M. Kinney |
| DRAWN | R. Doty |
| CHECKED | K |

March 1982
EXAMINED — Engineer of Bridges and Structures
PASSED — Engineer of Bridges and Structures
APPROVED — Director of Highways