Bench Mark: Chiseled "□" on top of W. side of S. Abut. of S.N. 029-0004 (Spoon River Bridge) Elev. = 480.75 (146.533).

Existing Structure: Double barrel CIP concrete box culvert. Built in 1925 under Section 18A, Route 31 at Sta. 84+78. Repair project 1992 with partial wall thickening. Existing traffic to be maintained using temporary runaround for Stage III & V construction. For details of Stage I, II and IV, see Roadway Plans.

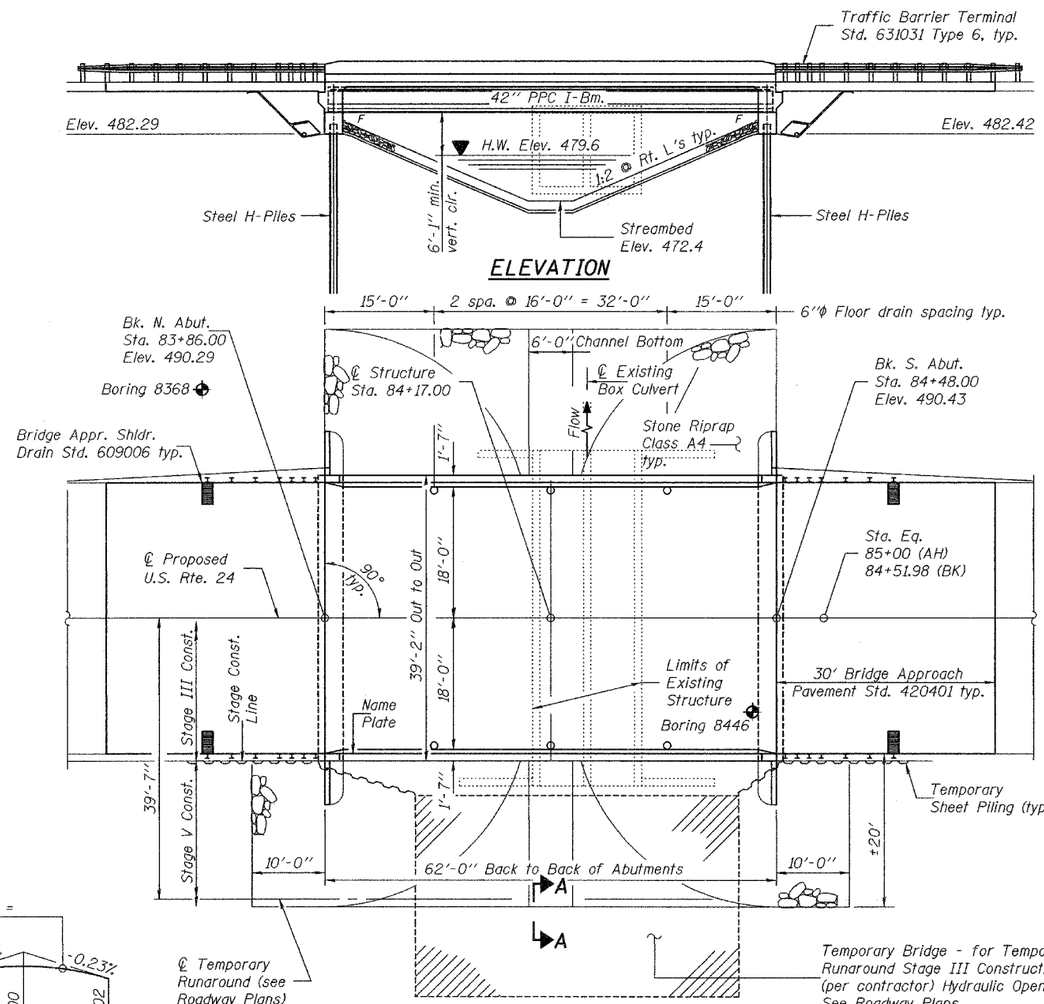
No salvage

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 315	18B-1	FULTON	13	10
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 1
13 SHEETS

Contract #88753

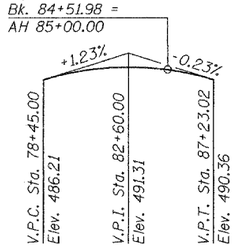


PLAN

For Section A-A thru riprap, see sheet 2 of 13.

Boring 8452

Equation:
Bk. 84+51.98 =
AH 85+00.00



LVC = 830'

PROFILE GRADE

(along ℄ roadway)

DESIGNED	Stephen M. Ryan
CHECKED	
DRAWN	R. Doty BMC
CHECKED	SMR

April 29, 2005
EXAMINED Thomas J. Domagalski
ENGINEER OF BRIDGE DESIGN
PASSED Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES

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

EXPIRES 11-30-2006

STATION 84+17.00
BUILT 20 BY
STATE OF ILLINOIS
F.A.P. RT. 315 SECTION 18B-1
LOADING HS20
STR. NO. 029-0060

NAME PLATE

See Std. 515001

CURVE DATA

(U.S. Rte. 24)
P.I. Sta. = 71+34.68
△ = 28°-53'-55.60" (LT)
D = 1°-15'-23.35"
R = 4,560.00'
T = 1,175.00'
L = 2,299.97'
E = 148.95'
e = 3.3%
T.R. = 41.28' & 27.93'
S.E. Run = 196.85
P.C. Sta. = 59+59.68
P.T. Sta. = 82+59.64
S.E. Transition = 81+61.21
Normal Crown = 83+86.0

LOADING HS20-44

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

DESIGN SPECIFICATIONS

2002 AASHTO

DESIGN STRESSES

FIELD UNITS

f'_c = 3,500 psi
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 lax. strands)
f'_{si} = 201,960 psi (½"ϕ low lax. strands)

SEISMIC DATA

Seismic Performance Category (SPC) = A
Bedrock Acceleration Coefficient (A) = 4.3%g
Site Coefficient (S) = 1.2

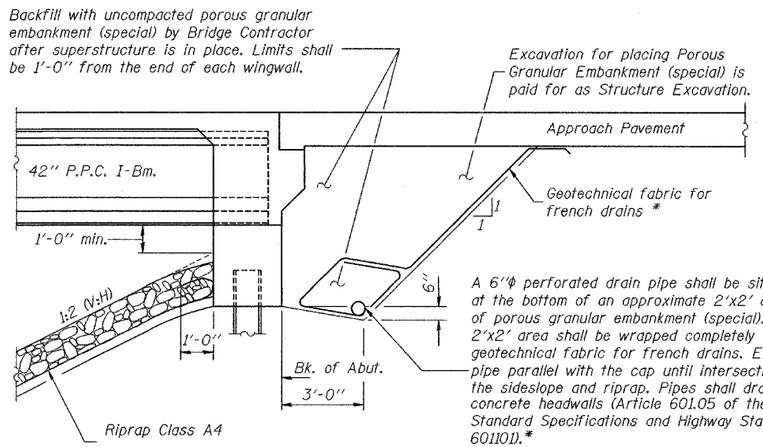
GENERAL NOTES

Reinforcement bars shall conform to the requirements of AASHTO M 31 or M 322 Grade 60.

The Contractor shall drive one (1) steel HP12x53 test pile in a permanent location at the South Abutment as directed by the Engineer before ordering the remainder of piles.

Layout of slope protection system may be varied in the field to suit ground conditions as directed by the Engineer.

All construction joints shall be bonded.



SECTION THRU INTEGRAL ABUTMENT

* - Included in the cost of Porous Granular Embankment (special).

TOTAL BILL OF MATERIAL

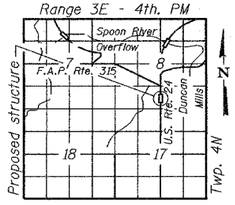
ITEM	UNIT	SUPER	SUB	TOTAL
Removal of Existing Structures No. 3	Each			1
Structure Excavation	Cu. Yd.		380	380
Porous Granular Embankment (Special)	Cu. Yd.		222	222
Protective Coat	Sq. Yd.	300		300
Concrete Structures	Cu. Yd.		33.8	33.8
Concrete Superstructure	Cu. Yd.	100.4		100.4
Furnishing and Erecting Precast Prestressed Concrete I-Beams, 42"	Foot	366		366
Bridge Deck Grooving	Sq. Yd.	233		233
Reinforcement Bars, Epoxy Coated	Pound	17,380	4320	21,700
Floor Drains	Each	6		6
Furnishing Steel Piles HP12x53	Foot		415	415
Driving Steel Piles	Foot		415	415
Test Pile Steel HP12x53	Each		1	1
Name Plates	Each	1		1
Stone Riprap, Class A4	Ton		437	437
Filter Fabric	Sq. Yd.		655	655
Bar Splicers	Each	72	44	116
Temporary Sheet Piling	Sq. Ft.		689	689

WATERWAY INFORMATION

Exist. Low Grade Elev. 490.4 @ Sta. 83+00
Drainage Area = 1.3 mi.² Prop. Low Grade Elev. 490.0 @ Sta. 83+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	601	57	109	478.4	2.5	0.6	480.9	479.0
Design	50	1001	71	144	479.6	3.8	0.9	483.4	480.5
Base	100	1181	75	156	479.9	4.6	1.0	484.5	480.9
Max. Calc.	500	1627	83	180	480.5	7.7	1.1	488.2	481.6

10 year velocity existing bridge = 10.5 ft./sec. 10 year velocity proposed bridge = 5.5 ft./sec.



LOCATION SKETCH

GENERAL PLAN
U.S. ROUTE 24 OVER
SPOON RIVER TRIBUTARY
F.A.P. ROUTE 315 - SECTION 18B-1
FULTON COUNTY
STATION 84+17.00
STRUCTURE NO. 029-0060