

Bench Mark: IDOT BM#20A Chsld. "□" on SW corner of hub guard. S.N. 059-0008 Sta. 447+50, offset = 15.2' RT. NGVD 29, Elev. 602.96

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

Existing Structure: S.N. 059-0008 built in 1961 as SBI Rte. 4, Section (V,T) B-1 at Sta. 447+03.8.
The superstructure consists of a reinforced concrete deck on wide flange beams. The substructure consists of pile bent abutments and 2 single hammerhead piers supported on spread footings. The Bk. to Bk. Abut. dimension measures 108'-0" while the O.-O. deck width measures 33'-8". The structure is to be removed and replaced using stage construction.

No salvage

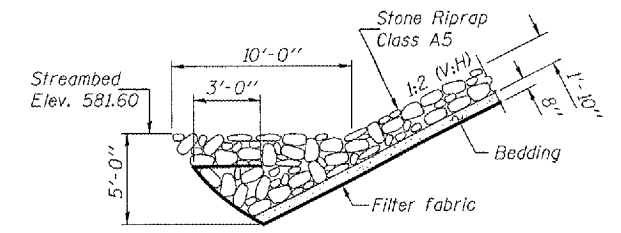
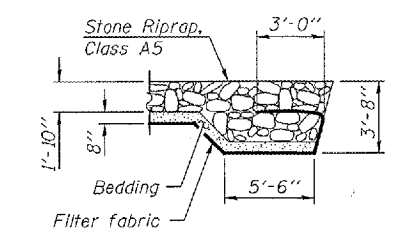
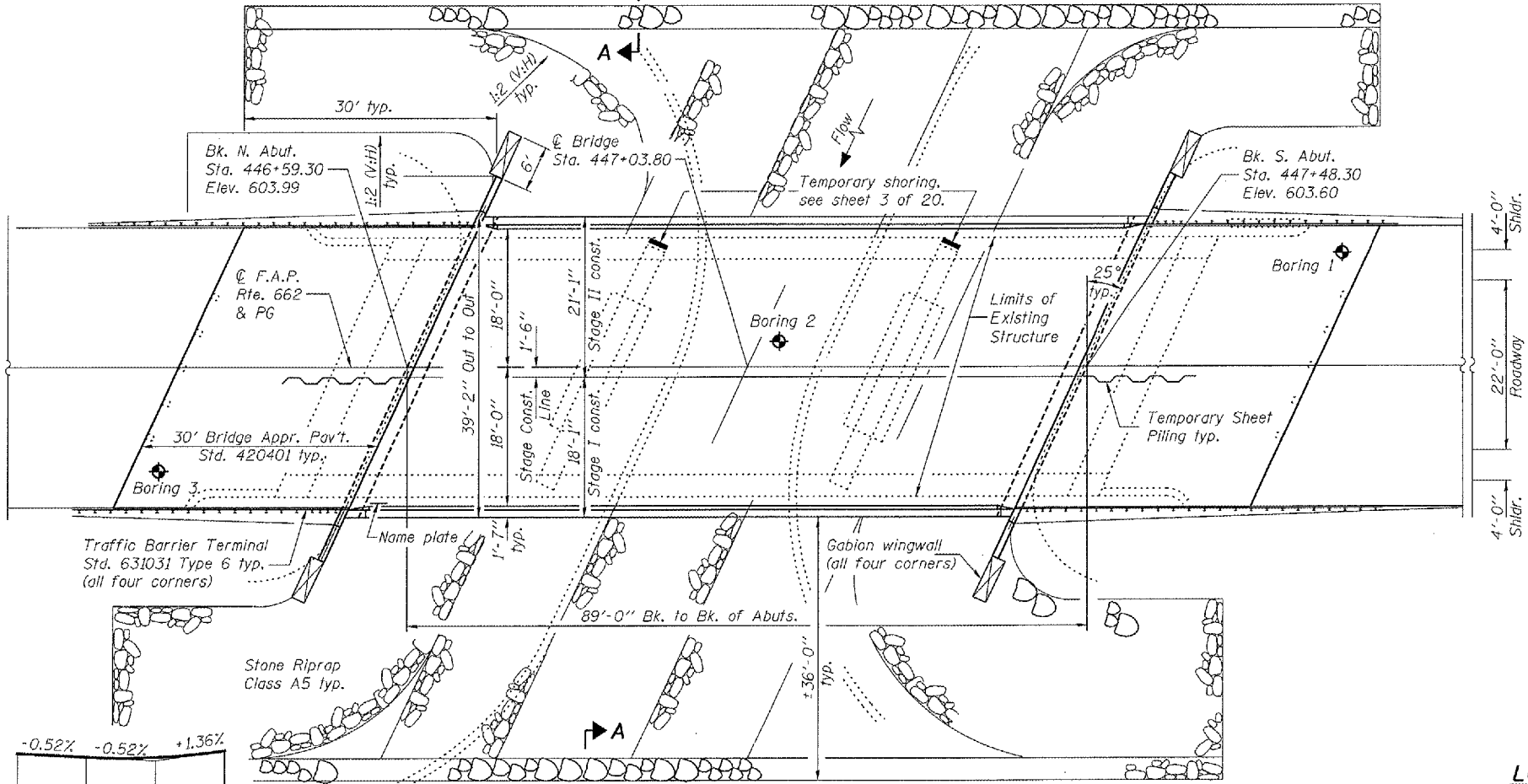
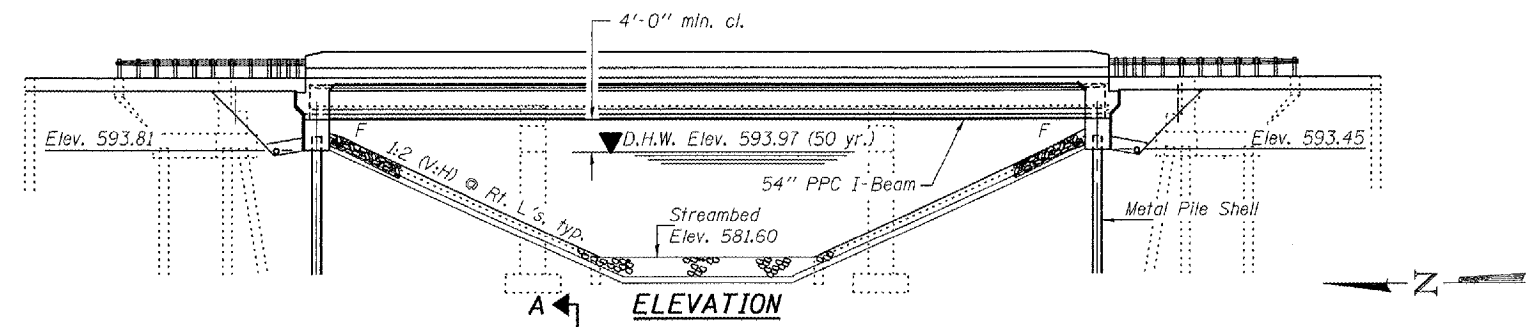
ROUTE NO.	SECTION	COUNTY	SHEET	SHEET NO.
FAP 662	(V,T)B-2	MACOUPIN	68	32
FED. ROAD DIST. NO. 7			FULLSCALE	FED. AID PROJECT
Contract #72993				

INDEX OF SHEETS

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- 2 Stage Construction Details
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- 4 Temporary Concrete Barrier Details
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- 9 Diaphragm Details
- 10 Framing Plan
- 11-12 Beam Details
- 13 North Abutment
- 14 South Abutment
- 15 Gabion Wingwall Details
- 16 Metal Shell Pile Details
- 17 Bar Splicers Details
- 18-20 Boring Logs

GENERAL NOTES

Reinforcement bars shall conform to the requirements of ASTM A 706 Grade 60 (IL Modified). See Special Provisions.
Layout of slope protection system may be varied in the field to suit ground conditions as directed by the Engineer.
The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
Reinforcement bars designated (E) shall be epoxy coated.
The embankment configuration shown shall be the minimum that must be placed and compacted prior to construction of the abutments.
The Contractor shall drive test piles to 110% of the nominal required bearing specified in the production locations at substructures specified or approved by the Engineer before ordering the remainder of piles.



STONE RIPRAP ANCHOR DETAIL

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Porous Granular Embankment (Special)	Cu. Yd.		269.0	269.0
Stone Riprap, Class A5	Sq. Yd.		1465	1465
Filter Fabric	Sq. Yd.		1525	1525
Removal of Existing Structures	Each	1		1
Structure Excavation	Cu. Yd.		260	260
Concrete Structures	Cu. Yd.		52.3	52.3
Concrete Superstructure	Cu. Yd.	144.5		144.5
Bridge Deck Grooving	Sq. Yd.	335		335
Protective Coat	Sq. Yd.	431		431
Furnishing and Erecting Precast Prestressed Concrete I-Beams, 54"	Foot	524.5		524.5
Reinforcement Bars, Epoxy Coated	Pound	25920	6200	32120
Furnishing Metal Shell Piles 14"	Foot		931	931
Driving Piles	Foot		931	931
Test Pile Metal Shells	Each		2	2
Temporary Sheet Piling	Sq. Ft.		595	595
Name Plates	Each	1		1
Bar Splicers	Each	331	24	355
Gabions	Cu. Yd.		30.7	30.7
Pipe Underdrain for Structures, 4"	Foot		176	176
Geocomposite Wall Drain	Sq. Yd.		113	113
Temporary Shoring	Each		2	2

STATION 447+03.80
BUILT 200 BY
STATE OF ILLINOIS
F.A.P. RT. 662 SEC. (V,T)B-2
LOADING HL93
STRUCTURE NO. 059-0504

NAME PLATE
See Std. 515001

LOADING HL-93

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

DESIGN SPECIFICATIONS

2004 AASHTO LRFD with 2005 & 2006 Interims

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 ($1/2$ " ϕ low lax. strands)
 $f_{si} = 201,960$ psi ($1/2$ " ϕ low lax. strands)

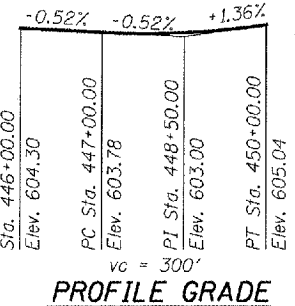
SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Bedrock Acceleration Coefficient (A) = 6.7%
Site Coefficient (S) = 1.5

WATERWAY INFORMATION

Drainage Area = 14.5 sq. mi. Exist. Low Grade Elev. 602.40 @ Sta. 447+08.8
Prop. Low Grade Elev. 603.58 @ Sta. 447+60

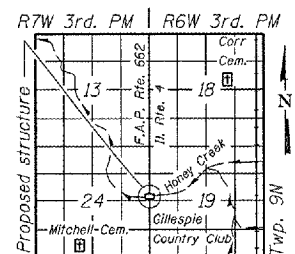
Flood	Freq. Yr.	Q	Opening Sq. Ft.		Not. H.W.E.		Head - Ft.		Headwater El.	
			Exist.	Prop.	Exist.	Prop.	Exist.	Prop.	Exist.	Prop.
Design	50	4020	534	652	593.97	0.69	0.20	593.52	593.03	
Base	100	4629	562	682	594.37	0.92	0.34	593.75	593.17	
Overtopping										
Max. Calc.	500	6099	622	748	595.22	1.56	0.76	594.39	593.59	



DESIGNED	<i>Phyo P.</i>
CHECKED	<i>Nguyen S.</i>
DRAWN	h.t. duong
CHECKED	DPN AIB

EXAMINED: *Thomas J. ...* Jan 23, 2007
PASSED: *Robert S. ...*
ENGINEER OF BRIDGE DESIGN
ENGINEER OF GRADGES AND STRUCTURES

EXPIRES 11-30-2008



LOCATION SKETCH

GENERAL PLAN & ELEVATION
ILLINOIS ROUTE 4 OVER
HONEY CREEK
F.A.P. RT. 662 SECTION (V,T)B-2
MACOUPIN COUNTY
STATION 447+03.80
STRUCTURE NO. 059-0504