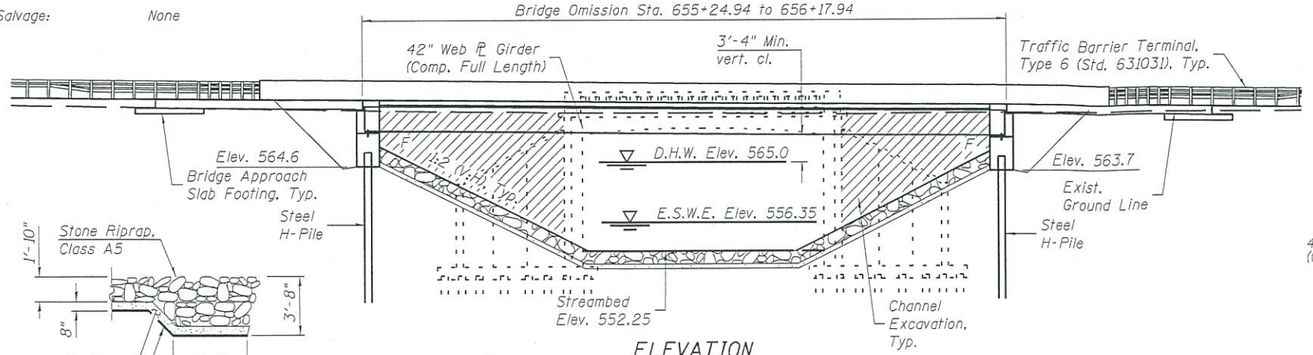
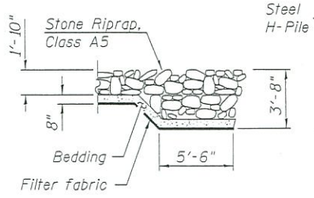
Benchmark: WS-1, Chiseled "□" on southeast abutment of old Township Road bridge: Sta. 656+31.7, 198.9' Rt., Elev. 564.54

Existing Structure: S.N. 059-0029 has an estimated construction date of 1935. The three sided rigid frame structure is 40'-0" bk.-bk. of sidewalls and 43'-6" out to out of deck. Abutments and vertical cantilever wing walls are supported by untreated timber pile footings. Structure to be removed and replaced. Road to be closed during construction of the bridge.

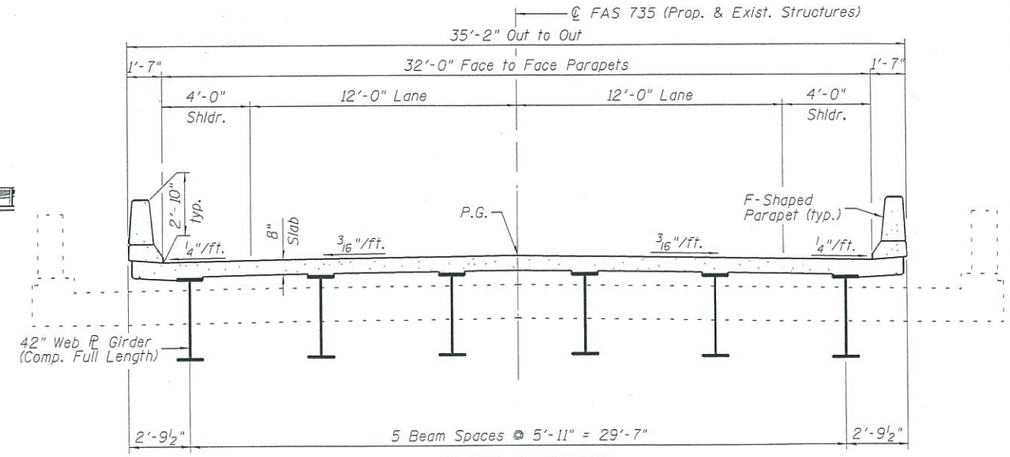
Salvage: None



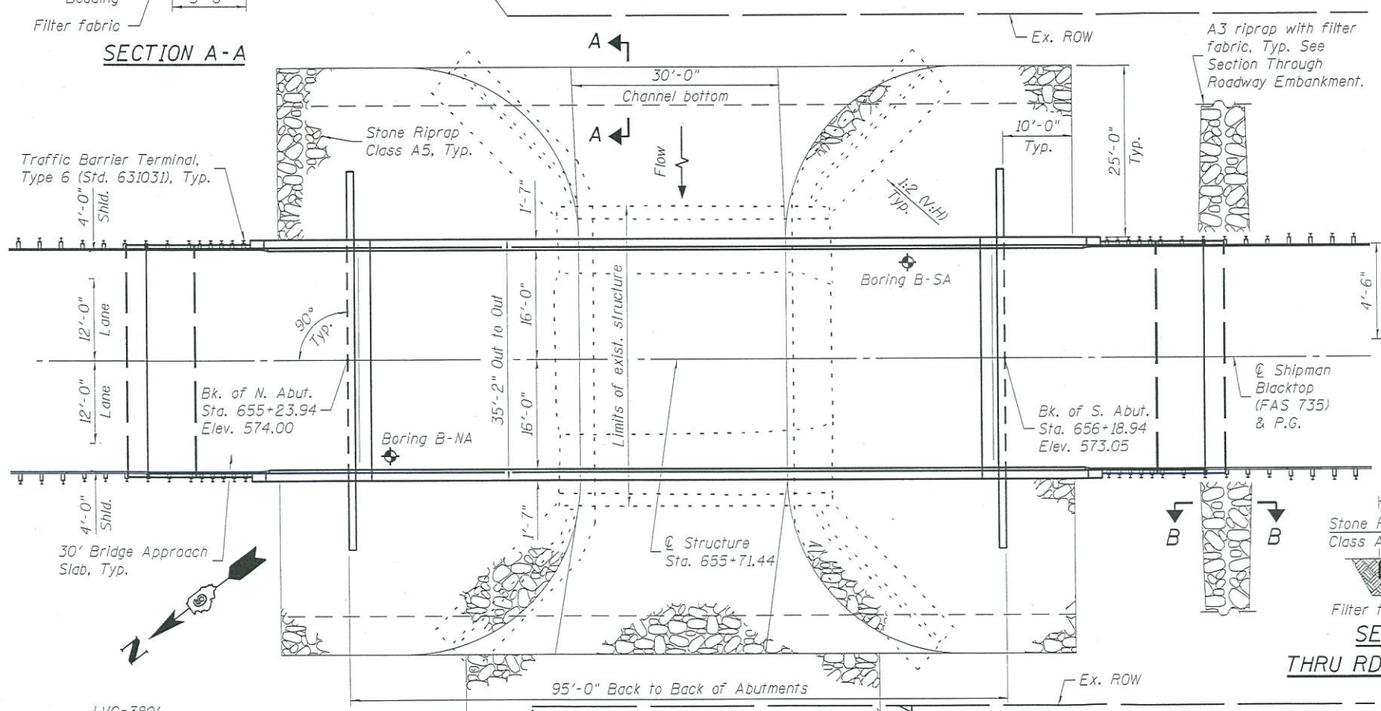
ELEVATION

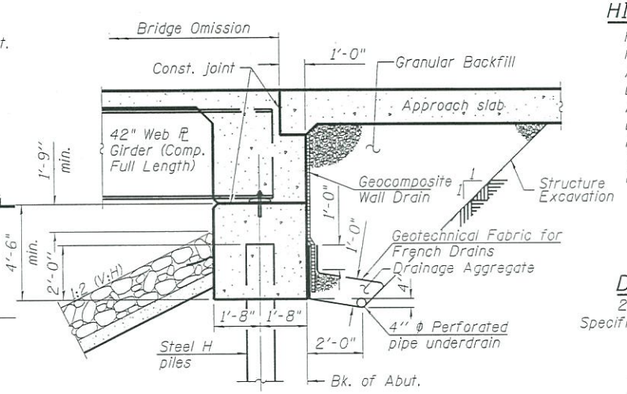


SECTION A-A

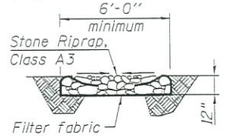


CROSS SECTION
(Looking South)

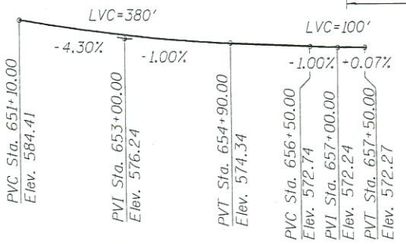




SECTION THRU INTEGRAL ABUTMENT



SECTION B-B
THRU RDWY. EMBANKMENT



PROFILE GRADE
Along ℄ Roadway

APPROVED
PLAN
APR 15 2016
AS A BASIS FOR
PREPARATION OF DETAILED PLANS

DESIGN SCOUR ELEVATION TABLE

Event / Limit State	Design Scour Elevations (ft.) N. Abut.	S. Abut.	Item 113
Q100	564.6	563.7	8
Q200	564.6	563.7	
Design	564.6	563.7	
Check	564.6	563.7	

WATERWAY INFORMATION

Drainage Area = 21.3 sq. mi.
Exist. Low Grade Elev. 571.6 @ Sta. 640+93
Prop. Low Grade Elev. 571.8 @ Sta. 659+25

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	3358	382	595	563.7	1.2	0.0	564.8	563.7
Design	50	5456	426	696	565.0	3.2	0.3	568.2	565.3
Base	100	6409	438	724	565.3	4.7	0.5	570.0	565.8
Scour Check	200	6961	444	738	565.5	5.5	0.6	571.0	566.1
Overtop Exist.	>500								
Overtop Prop.	>500								
Max. Calc.	500	8773	459	775	565.9	8.4	1.2	574.3	567.1

10-year existing velocity = 10.0 ft/s
10-year proposed velocity = 6.7 ft/s

HIGHWAY CLASSIFICATION

FAS Route 735 (Shipman Blacktop)
Functional Class: Major Collector
ADT: 1400 (2015); 1500 (2032)
DHV: 150 (2032)
ADTT: 252 (2015); 270 (2032)
Design Speed: 55 mph
Posted Speed: 55 mph
Two-Way Traffic
Directional Distribution: 50/50

LOADING HL-93

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

DESIGN SPECIFICATIONS

2014 AASHTO LRFD Bridge Design Specifications, 7th Edition with 2015 Interims

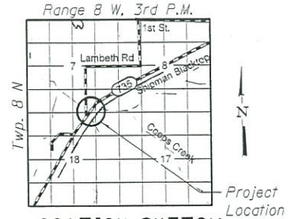
DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi
f'c = 4,000 psi (Superstructure Concrete)
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (M270 Grade 50W)

SEISMIC DATA

Seismic Performance Zone (SPZ) = 2
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.279g
Design Spectral Acceleration at 0.2 sec. (S_{DS}) = 0.630g
Soil Site Class = E



LOCATION SKETCH

GENERAL PLAN & ELEVATION
SHIPMAN BLACKTOP OVER
COOPS CREEK
F.A.S. RTE. 735 - SEC. (7)B-2
MACOUPIN COUNTY
STATION 655+71.44
STRUCTURE NO. 059-0511

PRINT DATE: 4/15/2016 7:20:40 AM Y:\15040.0106 WO\Shipman\DGN\Bridge\prelim\Plotsheets\059-0511TSL 01.dgn

EFK•Moen, LLC
Civil Engineering Design
303 Fountains Parkway, Suite 240
Fairview Heights, IL 62208
Phone 618-206-4250

USER NAME = cdl	DESIGNED - CDL	REVISED -	
	CHECKED - CTW	REVISED -	
PLOT SCALE = 0.2 '=' / in.	DRAWN - JAA	REVISED -	
PLOT DATE = 4/15/2016	DATE - 4/15/2016	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

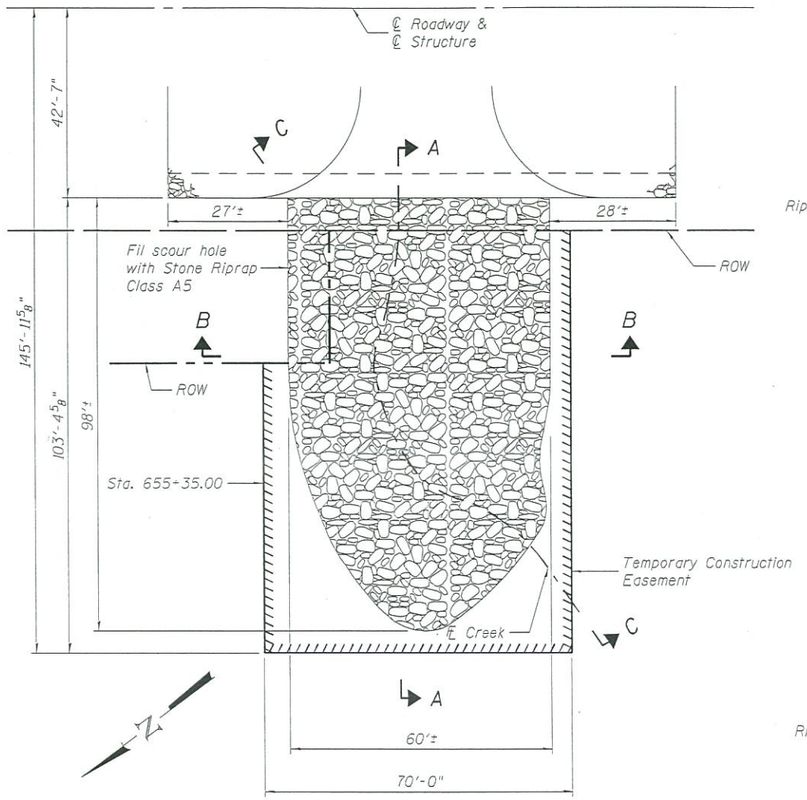
SHEET NO. 1 OF 2 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
735	(7)B-2	MACOUPIN		
		CONTRACT NO.		
	ILLINOIS FED. AID PROJECT			

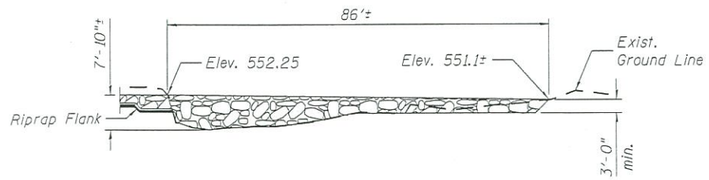
APPROVED

APR 15 2016

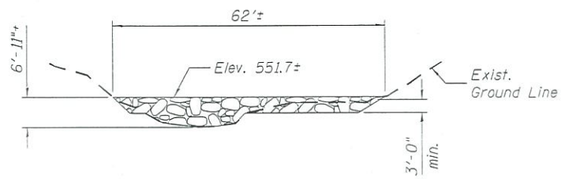
AS A BASIS FOR
PREPARATION OF DETAILED PLANS



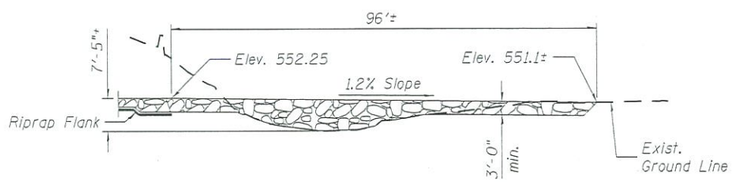
PLAN OF EXISTING SCOUR HOLE



SECTION A-A



SECTION B-B



SECTION C-C

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EFK•Moen, LLC Civil Engineering Design 303 Fountains Parkway, Suite 240 Fairview Heights, IL 62208 Phone 618-206-4250	USER NAME = cdl	DESIGNED - CDL	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	
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	PLOT DATE = 4/15/2016	DATE - 4/15/2016	REVISED -		

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
735	(7)B-2	MACOUPIN		
		CONTRACT NO.		
	ILLINOIS	FED. AID PROJECT		