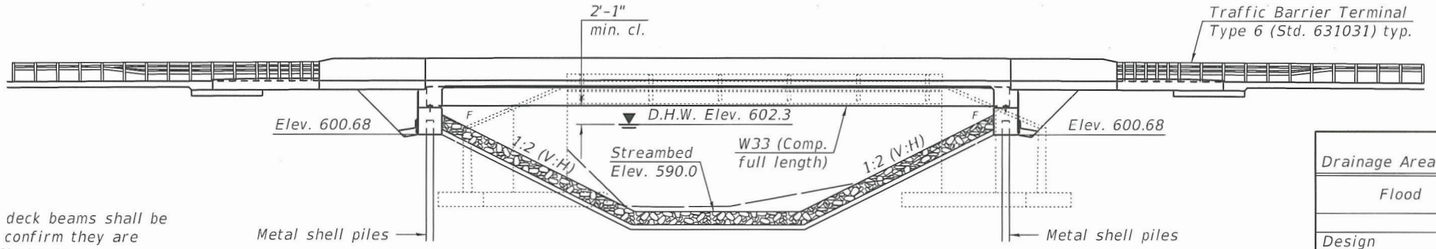
Benchmark: Brass disk in NE wingwall of SN 058-0029; Elev. 606.90, Sta. 382+46, Offset 18.6' Rt.

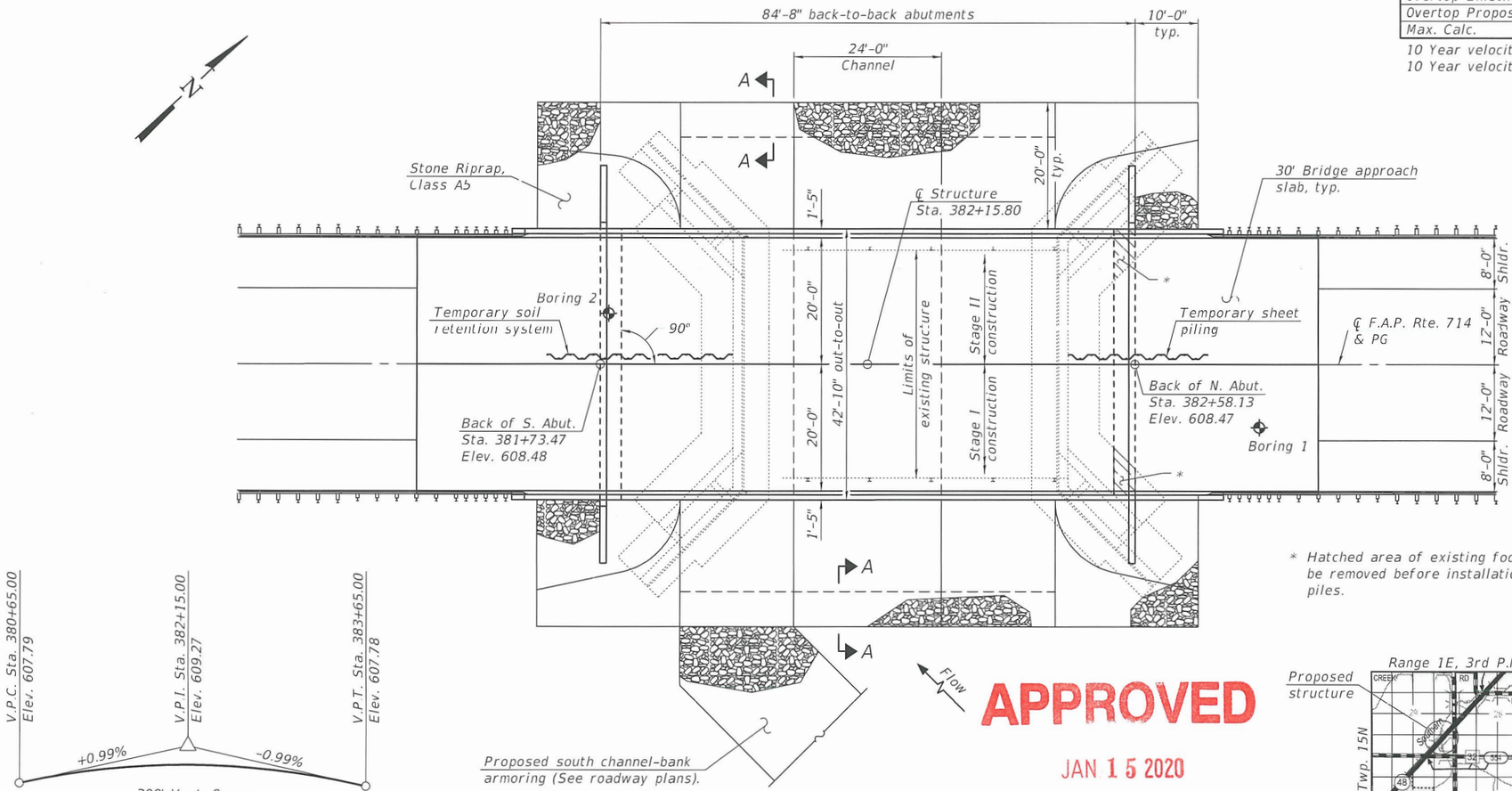
Existing Structure: Structure No. 058-0029 was originally constructed in 1928 as F.A.P. Route 714, Section 128-8. The original structure was a single span, 52'-9½" reinforced concrete deck girder superstructure supported on closed abutments with wingwalls on untreated timber pile foundation. In 1951, the structure was widened from 22 ft. to 36 ft. with new concrete wingwalls as Section 128-B-1; S.B.I. Route 48. In 1983, the concrete deck girder superstructure was removed and replaced with PPC deck beams and a bituminous wearing surface overlying a waterproofing membrane system as Section 128 BR-1. Existing structure will be removed and replaced utilizing stage construction.

No salvage.

Note:
The condition of the existing deck beams shall be verified during final design to confirm they are capable of carrying stage traffic loads.



ELEVATION



* Hatched area of existing footing to be removed before installation of piles.

PLAN

PROFILE GRADE

(Along ℄ F.A.P. Rte. 714)

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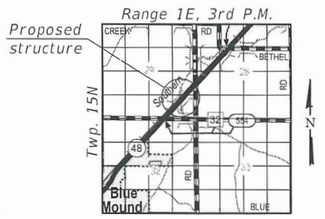
AS A BASIS FOR PREPARATION OF DETAILED PLANS



LOCATION SKETCH

DESIGN SCOUR ELEVATION TABLE

Event / Limit State	Design Scour Elevations (ft.)		
	S. Abut.	N. Abut.	Item 113
Q100	600.68	600.68	8
Q200	600.68	600.68	
Design	600.68	600.68	
Check	600.68	600.68	

WATERWAY INFORMATION

Drainage Area = 12.4 sq. mi.

Existing Overtopping Elev. = 606.74 at Sta. 381+00
Proposed Overtopping Elev. = 606.87 at Sta. 385+50

Flood	Freq. Yr.	Q C.F.S.	Opening Ft² Exist.	Opening Ft² Prop.	Nat. H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
	10	1720	397	495	600.9	0.3	0.2	601.2	601.1
Design	50	2820	468	594	602.3	0.5	0.3	602.8	602.6
Base	100	3310	497	636	602.9	0.5	0.3	603.4	603.2
Scour Design Check	200	3830	527	682	603.5	0.6	0.3	604.1	603.8
Overtop Existing	N/A	-	-	-	-	-	-	-	-
Overtop Proposed	N/A	-	-	-	-	-	-	-	-
Max. Calc.	500	4540	566	743	604.3	1.2	0.8	605.5	605.1

10 Year velocity through existing structure = 4.3 ft./sec.
10 Year velocity through proposed structure = 3.5 ft./sec.

DESIGN SPECIFICATIONS

2017 AASHTO LRFD Bridge Design Specifications, 8th Edition

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 50)

HIGHWAY CLASSIFICATION

IL Rte. 48 - F.A.P. Rte. 714
Functional Class: Minor Arterial
ADT: 5,200 (2020); 6,200 (2040)
ADTT: 750 (2020); 894 (2040)
DHV: 572 (2020); 682 (2040)
Design Speed: 60 m.p.h.
Posted Speed: 55 m.p.h.
Two-Way Traffic
Directional Distribution: 50:50

LOADING HL-93

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

SEISMIC DATA

Seismic Performance Zone (SPZ) = 2
Design Spectral Acceleration at 1.0 sec. (SD1) = 0.114
Design Spectral Acceleration at 0.2 sec. (SDS) = 0.227
Soil Site Class = C

GENERAL PLAN & ELEVATION
ILLINOIS ROUTE 48 OVER MOSQUITO CREEK
F.A.P. RTE. 714 - SEC. (128BR-1)B-1
MACON COUNTY
STATION 382+15.80
STRUCTURE NO. 058-0137

DESIGNED -	JUSTIN T. BELUE
CHECKED -	RICHARD J. CHAPUT
DRAWN -	MICHAEL B. MOSSMAN
CHECKED -	J.T.B. / R.J.C.

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET 1 OF 2 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
714	(128BR-1)B-1	MACON	__	__
		CONTRACT NO. 74368		
	ILLINOIS FED. AID PROJECT			

MODEL: 0580137-74368-TSL-001
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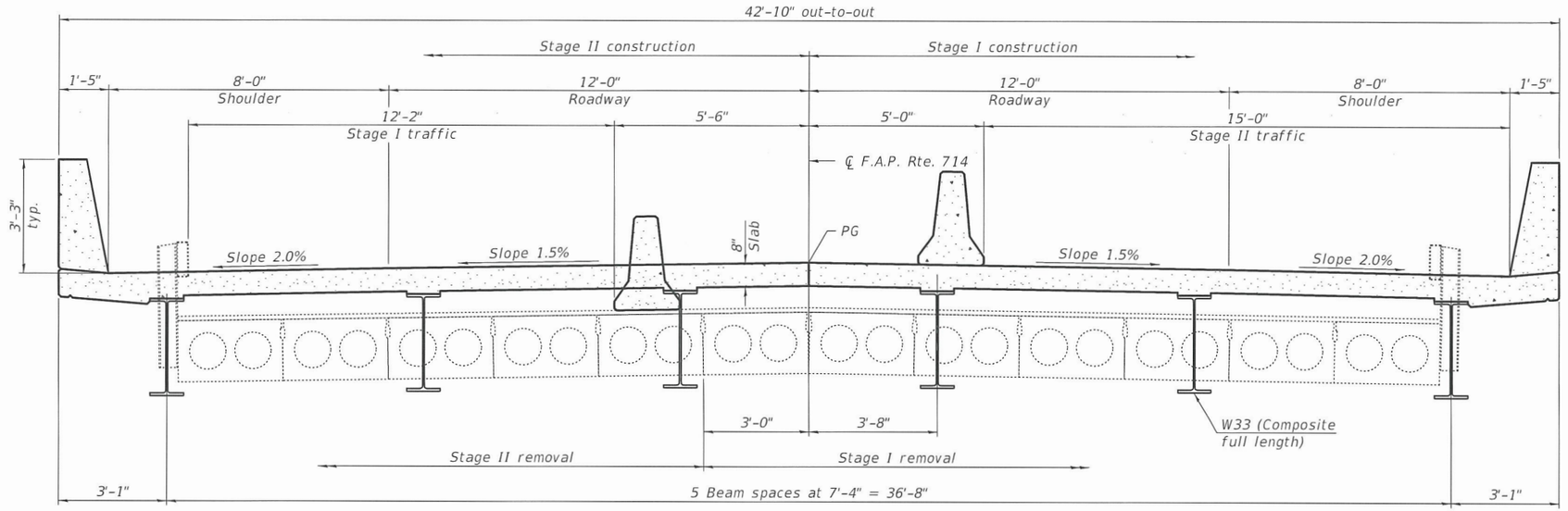
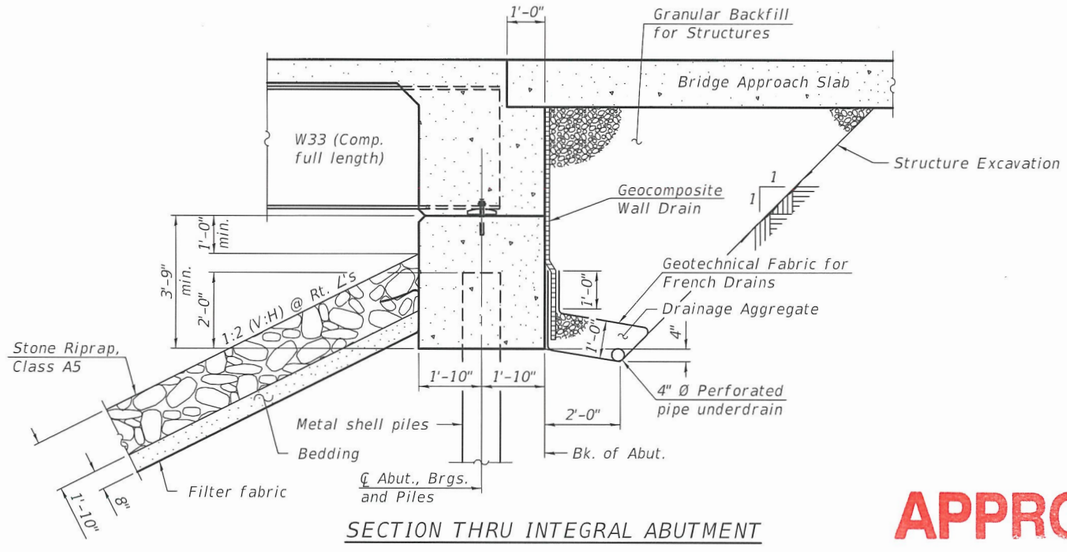
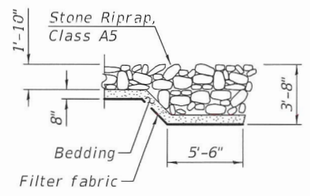


CROSS SECTION
(Looking North)



SECTION THRU INTEGRAL ABUTMENT



SECTION A-A

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AS A BASIS FOR
PREPARATION OF DETAILED PLANS

DETAILS
ILLINOIS ROUTE 48 OVER MOSQUITO CREEK
F.A.P. RTE. 714 - SEC. (128BR-1)B-1
MACON COUNTY
STATION 382+15.80
STRUCTURE NO. 058-0137

DESIGNED -	JUSTIN T. BELUE
CHECKED -	RICHARD J. CHAPUT
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CHECKED -	J.T.B. / R.J.C.

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET 2 OF 2 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
714	(128BR-1)B-1	MACON	—	—
		CONTRACT NO. 74368		
	ILLINOIS	FED. AID PROJECT		

MODEL: 0580137-74368_TSL-002
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