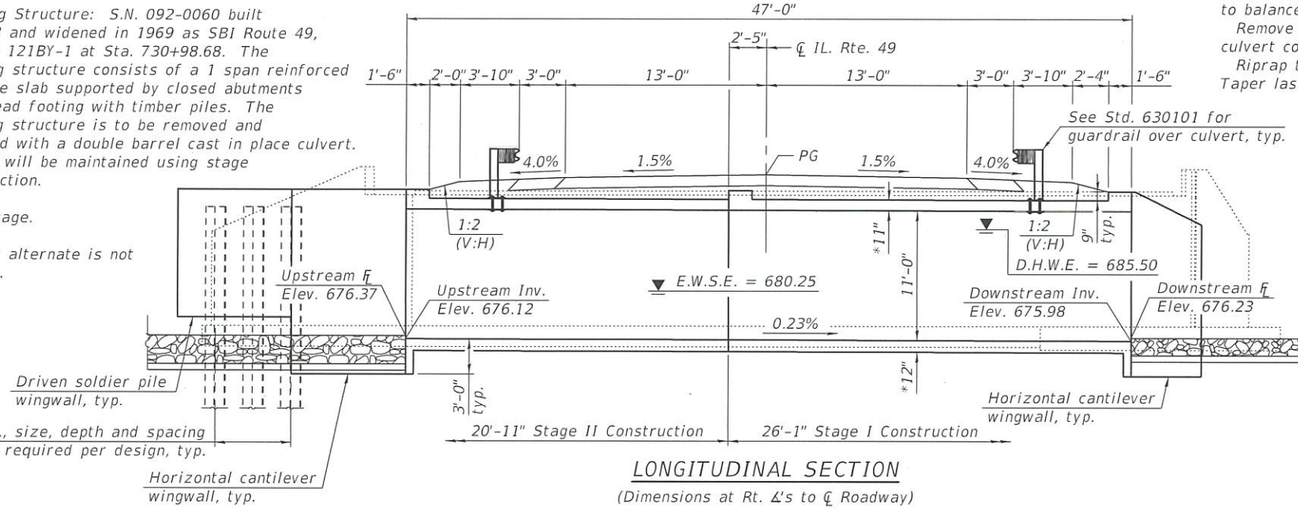
Benchmark ARM-2A-4963-2: Chiseled "□" on top of SE wingwall of S.N. 092-0060, Elev. 690.391.

Existing Structure: S.N. 092-0060 built in 1928 and widened in 1969 as SBI Route 49, Section 121BY-1 at Sta. 730+98.68. The existing structure consists of a 1 span reinforced concrete slab supported by closed abutments on spread footing with timber piles. The existing structure is to be removed and replaced with a double barrel cast in place culvert. Traffic will be maintained using stage construction.

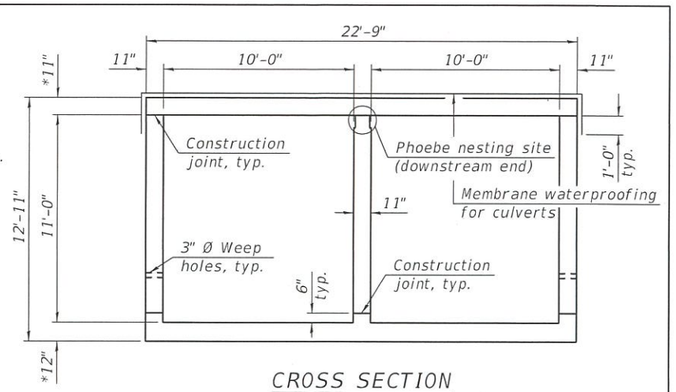
No Salvage.

Precast alternate is not allowed.

Note:
Contractor shall excavate behind existing abutments prior to removal of superstructure to balance front and back soil pressure.
Remove existing abutment footings prior to culvert construction.
Riprap to remain 3" above invert elevation. Taper last 10 ft. to the existing streambed elevation.



LONGITUDINAL SECTION
(Dimensions at Rt. ∠'s to ℄ Roadway)



CROSS SECTION
* Slab thickness may be refined in final design.

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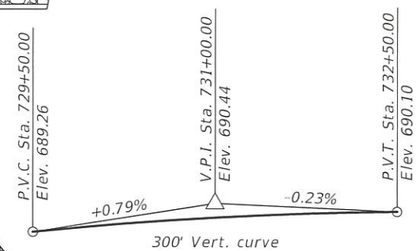
MAR 06 2019
AS A BASIS FOR PREPARATION OF DETAILED PLANS



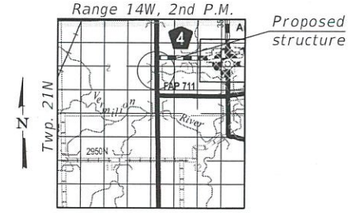
PROFILE GRADE
(Along ℄ IL. Rte. 49)

DESIGN SPECIFICATIONS
2017 AASHTO LRFD Bridge Design Specifications, 8th Edition

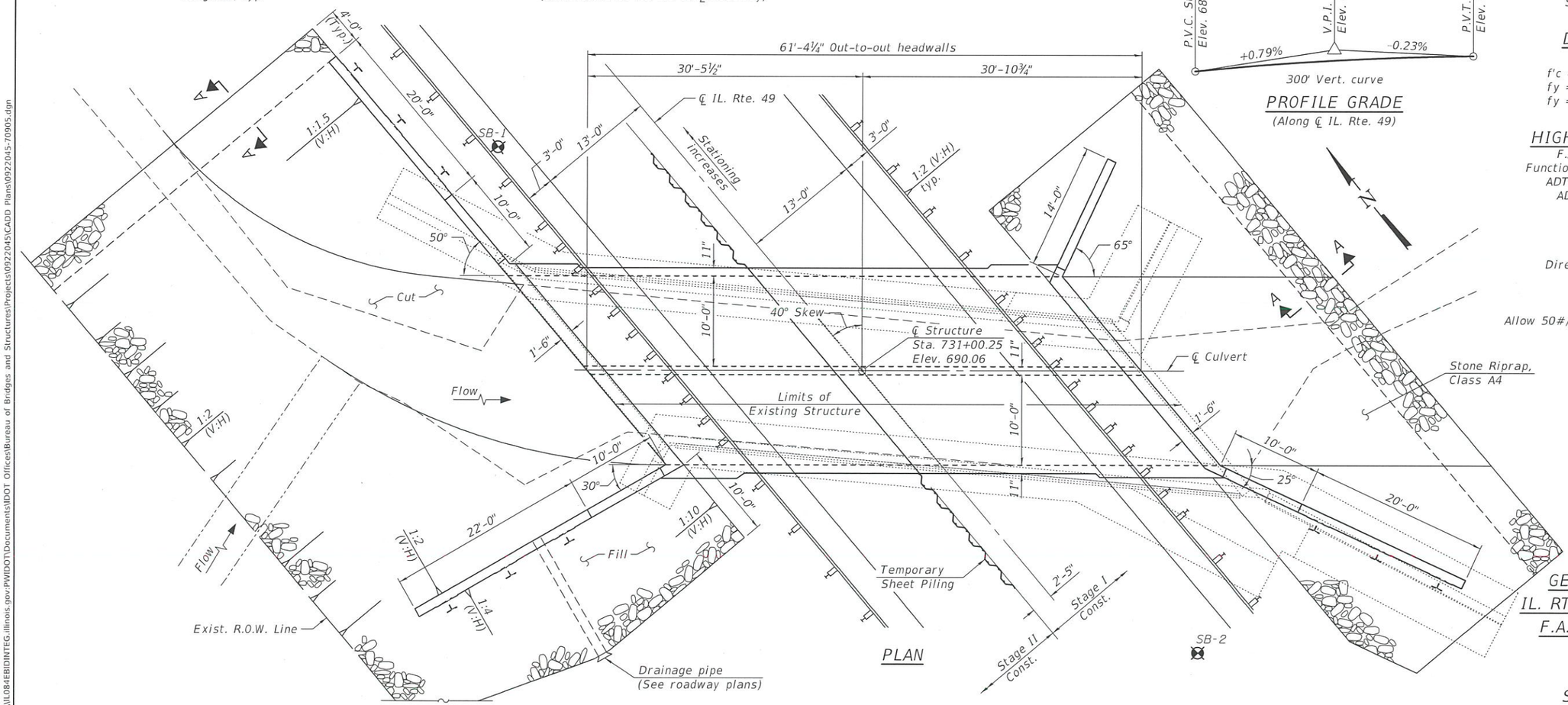
DESIGN STRESSES
FIELD UNITS
f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (M270 Grade 50)

HIGHWAY CLASSIFICATION
F.A.P. Rte. 840 - IL. Rte. 49
Functional Class: Rural Minor Arterial
ADT: 2150 (2016); 2350 (2036)
ADTT: 80 (2013); 87 (2033)
DHV: 225
Design Speed: 60 m.p.h.
Posted Speed: 55 m.p.h.
2-Way Traffic
Directional Distribution: 50/50

LOADING HL-93
Allow 50#/sq. ft. for future wearing surface.



LOCATION SKETCH



PLAN

GENERAL PLAN & ELEVATION
IL. RTE. 49 OVER DRAINAGE DITCH
F.A.P. RTE. 840 - SEC. (121)BR
VERMILION COUNTY
STATION 731+00.25
STRUCTURE NO. 092-2045

DESIGNED -	ANDREW BAUER
CHECKED -	ALLY KELLEY
DRAWN -	DENNIS A. POP
CHECKED -	RICHARD J. CHAPUT

3/6/2019 - 9:29:05 AM

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET 1 OF 2 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
840	121BR	VERMILION		
		CONTRACT NO. 70905		
		ILLINOIS FED. AID PROJECT		

MODEL: 0922045-70905-TSL-001
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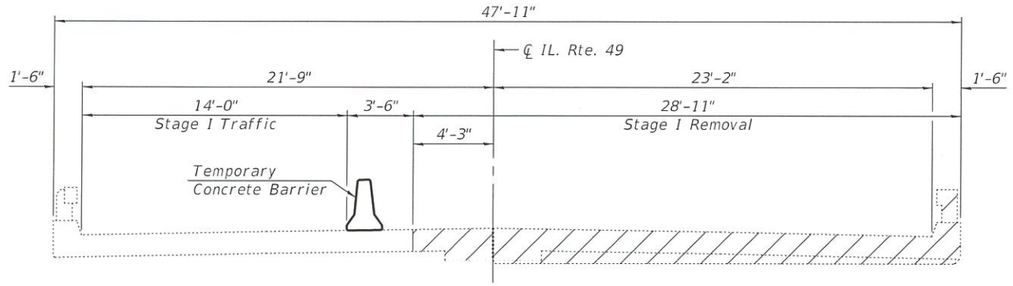


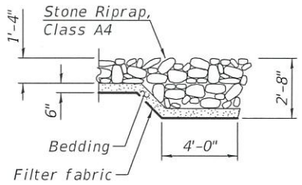
STAGE I REMOVAL

(Dimensions at Rt. ∠'s to ℄ Roadway)

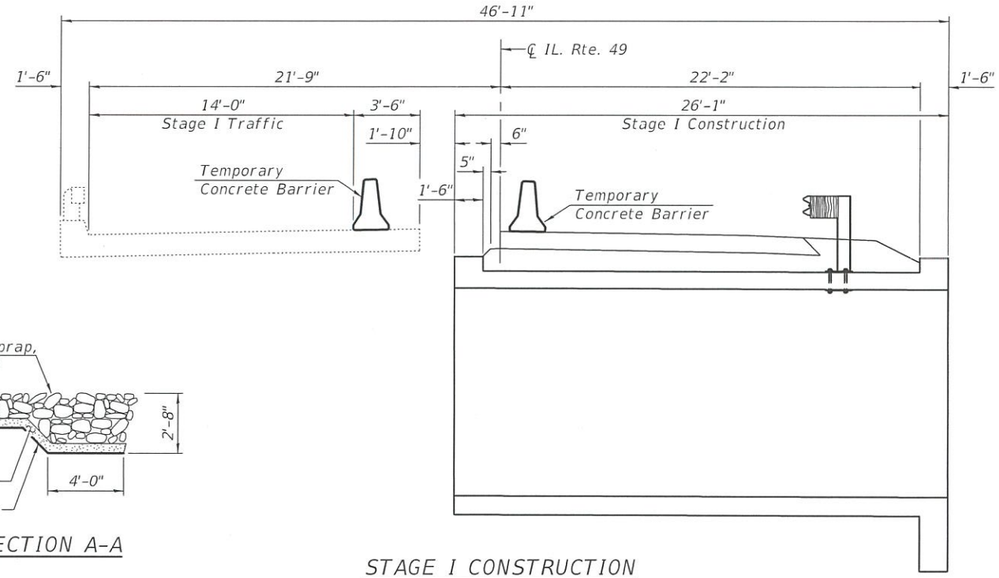
APPROVED

MAR 06 2019

AS A BASIS FOR
PREPARATION OF DETAILED PLANS

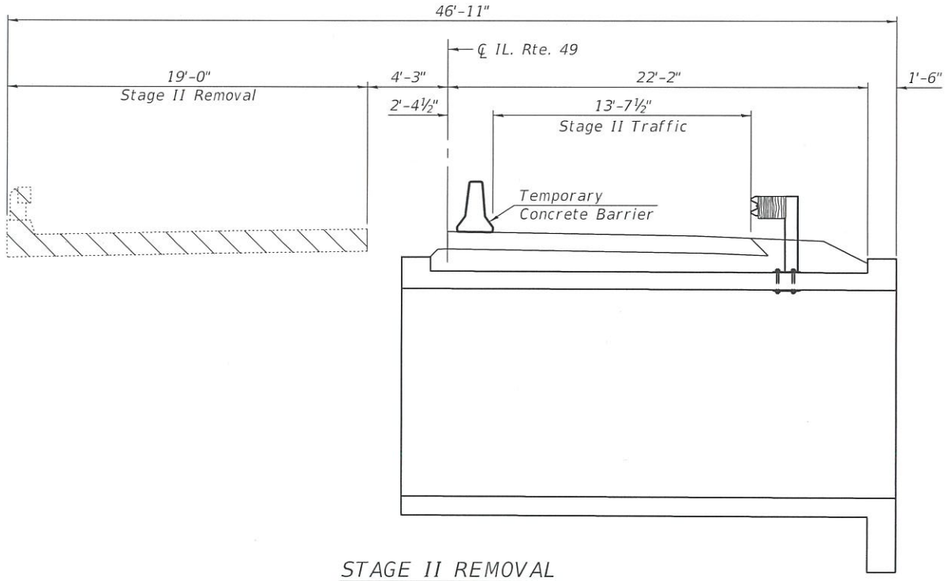


SECTION A-A



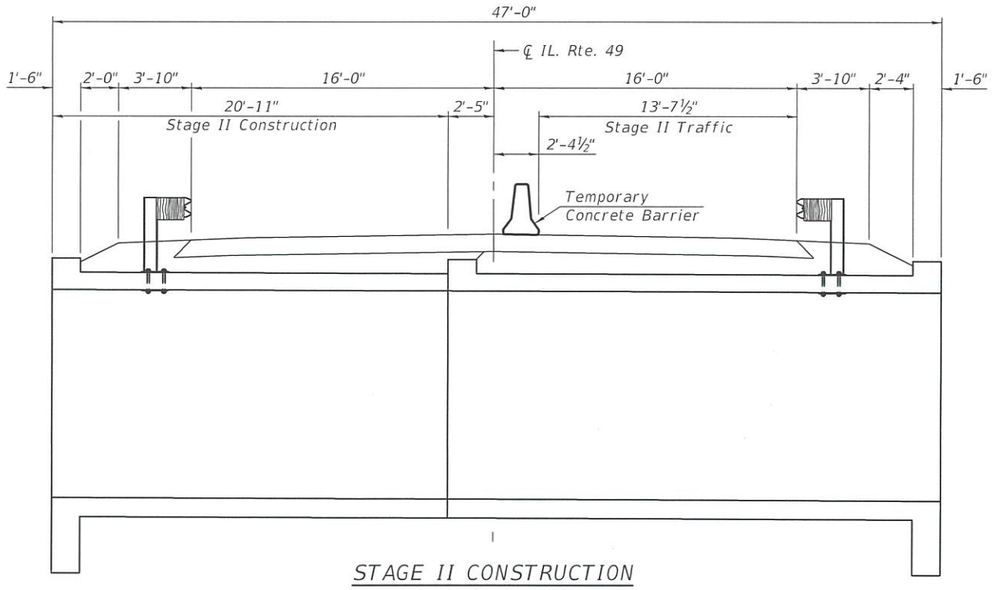
STAGE I CONSTRUCTION

(Dimensions at Rt. ∠'s to ℄ Roadway)



STAGE II REMOVAL

(Dimensions at Rt. ∠'s to ℄ Roadway)



STAGE II CONSTRUCTION

(Dimensions at Rt. ∠'s to ℄ Roadway)

WATERWAY INFORMATION

Drainage Area = 1.36 Sq. Mi. Low Grade Elev. 688.05 @ Sta. 727+89.80

Flood	Freq. Yr.	Q C.F.S.	Opening Ft²		Nat. H.W.E.	Head - Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
	10	540	84	144	684.3	0.8	0.1	685.1	684.4
Design	50	910	103	168	685.5	1.5	0.5	687.0	686.0
Base	100	1080	111	176	685.9	2.1	0.6	688.0	686.5
Overtopping	100	1080	111	-	685.9	2.1	-	688.0	-
Scour	200	1261	119	186	686.4	1.9	0.8	688.3	687.2
Max. Calc.	500	1500	123	192	686.7	1.7	1.1	688.4	687.8

10-year velocity through existing bridge = 6.43 ft/s
10-year velocity through proposed culvert = 3.75 ft/s

DETAILS
IL. RTE. 49 OVER DRAINAGE DITCH
F.A.P. RTE. 840 - SEC. (121)BR
VERMILION COUNTY
STATION 731+00.25
STRUCTURE NO. 092-2045

DESIGNED -	ANDREW BAUER
CHECKED -	ALLY KELLEY
DRAWN -	DENNIS A. POP
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3/6/2019 - 9:29:44 AM

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET 2 OF 2 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
840	121BR	VERMILION		
		CONTRACT NO.		
	ILLINOIS	FED. AID PROJECT		

MODEL: 0922045-70905-TSL-002
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