Benchmarks: #1: Chiseled "□" on northwest wing wall of SN 050-0052. Elev. = 649.92, Sta. 172+39.40, 17.92' LT.
#2: Railroad spike in power pole. Elev. = 647.55, Sta. 170+22.71, 60.04' RT.

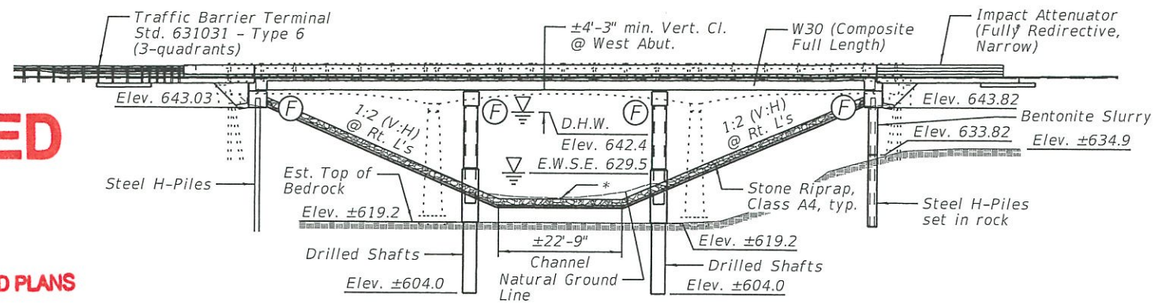
Existing Structure: Structure No. 050-0052 was originally constructed in 1956 as S.B.I. Route 69, Section 121-B-1. In 1984, the bridge was retrofitted with a thrie-beam type railing. The superstructure consists of three-span continuous, reinforced concrete T-Beams supporting a 6½" reinforced concrete deck. The substructure consists of stub abutments supported by driven steel H-piles and solid wall piers supported by spread footings on bedrock. The back-to-back of abutments length measures 146'-8" and the out-to-out width measures 35'-8". The span lengths are 42'-10½", 55'-9", and 42'-10½". The bridge is skewed 30° left forward. The bridge will be closed and traffic detoured during construction.

No Salvage.

APPROVED

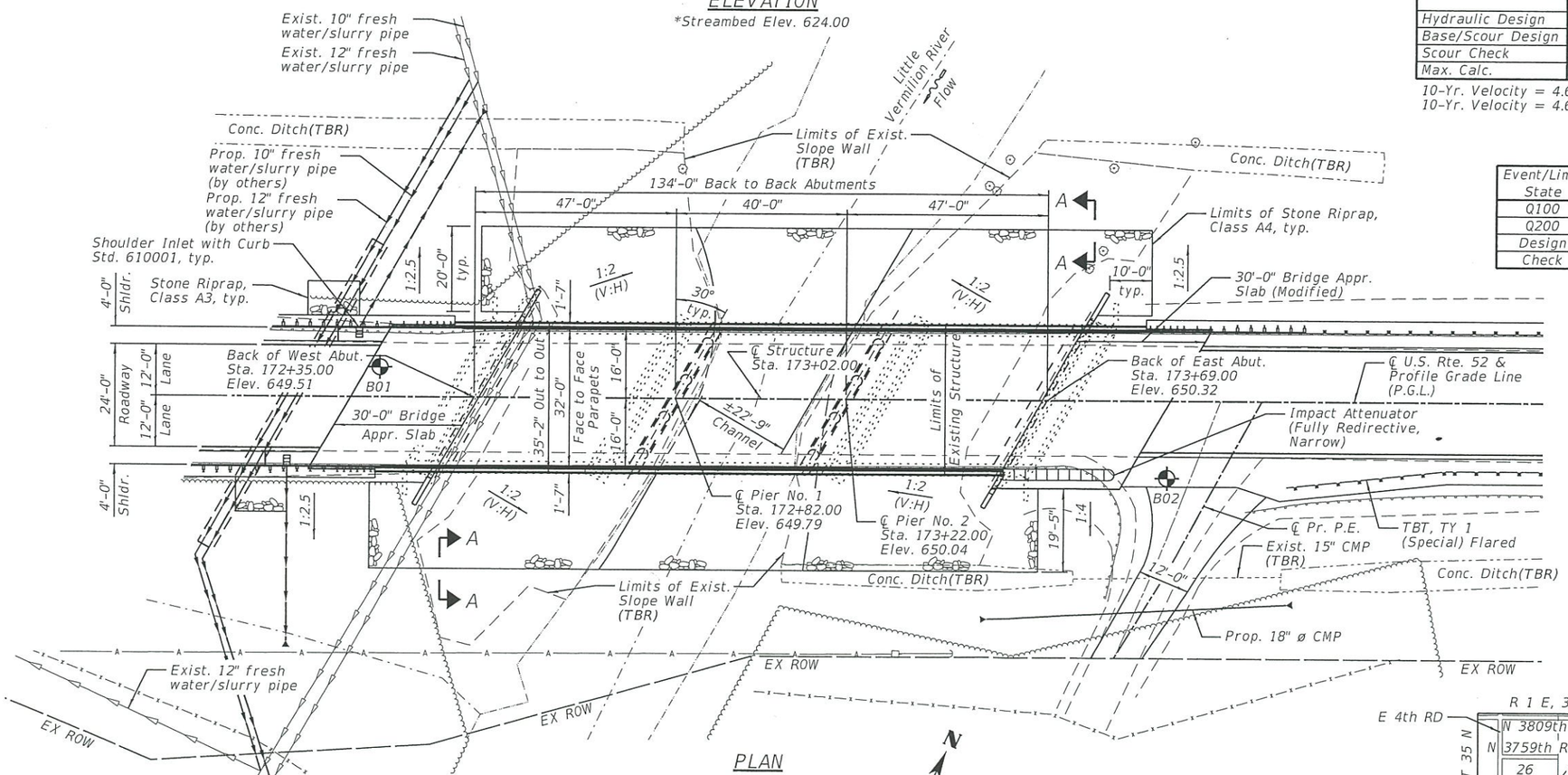
SEP 27 2017

AS A BASIS FOR PREPARATION OF DETAILED PLANS



ELEVATION

*Streambed Elev. 624.00



PLAN

DESIGN SPECIFICATIONS

2014 AASHTO LRFD Bridge Design Specifications, 7th Edition with 2015 and 2016 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 (AASHTO M270 Grade 50W)

LOADING HL-93

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

HIGHWAY CLASSIFICATION

F.A.S. Route 169 (U.S. 52)
Functional Class: Major Collector
A.D.T.: 1,500 (2016), 1,850 (2036)
D.H.V.: 141
A.D.T.T.: 360 (2016)
Design Speed: 55 M.P.H.
Posted Speed: 55 M.P.H.
Two Way Traffic
Directional Distribution: 50/50

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (SD1) = 0.068g
Design Spectral Acceleration at 0.2 sec. (SDs) = 0.121g
Soil Site Class = C

WATERWAY INFORMATION

Drainage Area = 55.1 Sq. Mi.

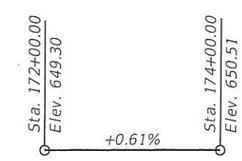
Existing Low Grade Elev. 648.39 @ Sta. 170+66
Proposed Low Grade Elev. 648.39 @ Sta. 170+66

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	4,160	746	755	638.7	0.2	0.2	638.9	638.9
Hydraulic Design	50	6,600	1,063	1,069	642.4	0.3	0.3	642.7	642.7
Base/Scour Design	100	7,680	1,204	1,206	643.8	0.4	0.3	644.2	644.1
Scour Check	200	8,820	1,360	1,353	645.3	0.4	0.3	645.6	645.5
Max. Calc.	500	10,300	1,468	1,434	646.7	0.4	0.4	647.1	647.1

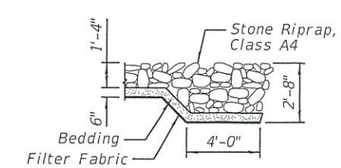
10-Yr. Velocity = 4.6 ft./sec. (Exist.)
10-Yr. Velocity = 4.6 ft./sec. (Prop.)

DESIGN SCOUR ELEVATION TABLE

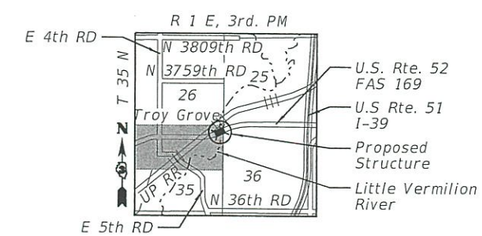
Event/Limit State	Design Scour Elevations (ft.) W. Abut.	Pier 1	Pier 2	E. Abut.	Item 113
Q100	642.8	±619.0	±619.0	643.6	8
Q200	642.8	±619.0	±619.0	643.6	
Design	642.8	±619.0	±619.0	643.6	
Check	642.8	±619.0	±619.0	643.6	



PROFILE GRADE
(Along ℄ Roadway)



SECTION A-A



LOCATION SKETCH

U.S. ROUTE 52 OVER
LITTLE VERMILION RIVER
F.A.S. 169 - SECTION 121BR
LASALLE COUNTY
STATION 173+02.00
STRUCTURE NO. 050-0259

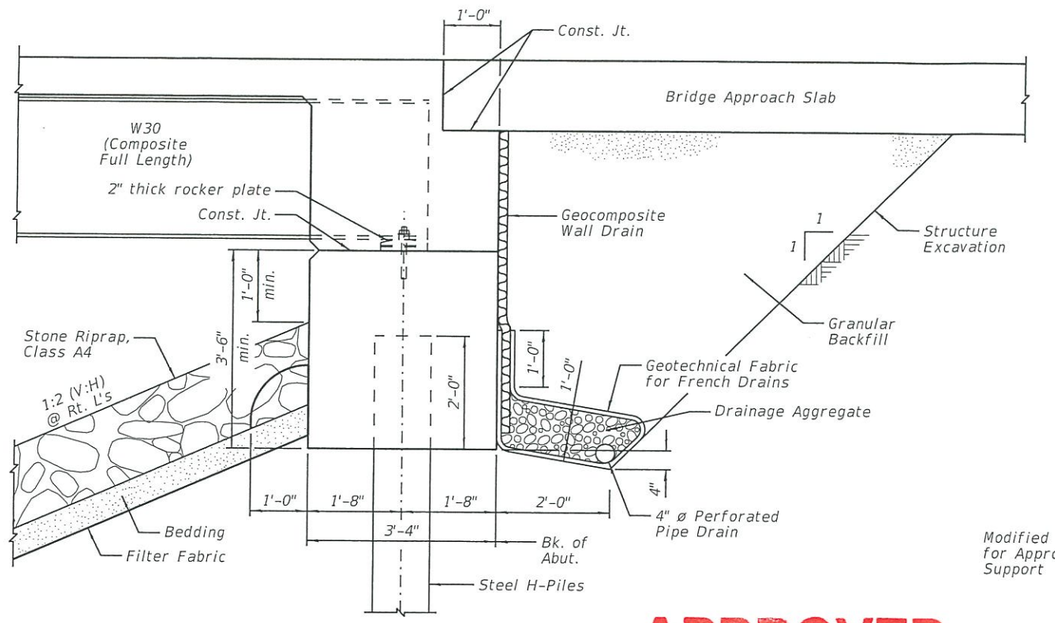
Farnsworth GROUP
2709 McGRAW DRIVE
BLOOMINGTON, ILLINOIS 61704
(309) 663-8435 / info@f-w.com

	DESIGNED - PMG	REVISED
	CHECKED - JCZ	REVISED
	DRAWN - DJM	REVISED
DATE - 09/22/17	CHECKED - JML	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

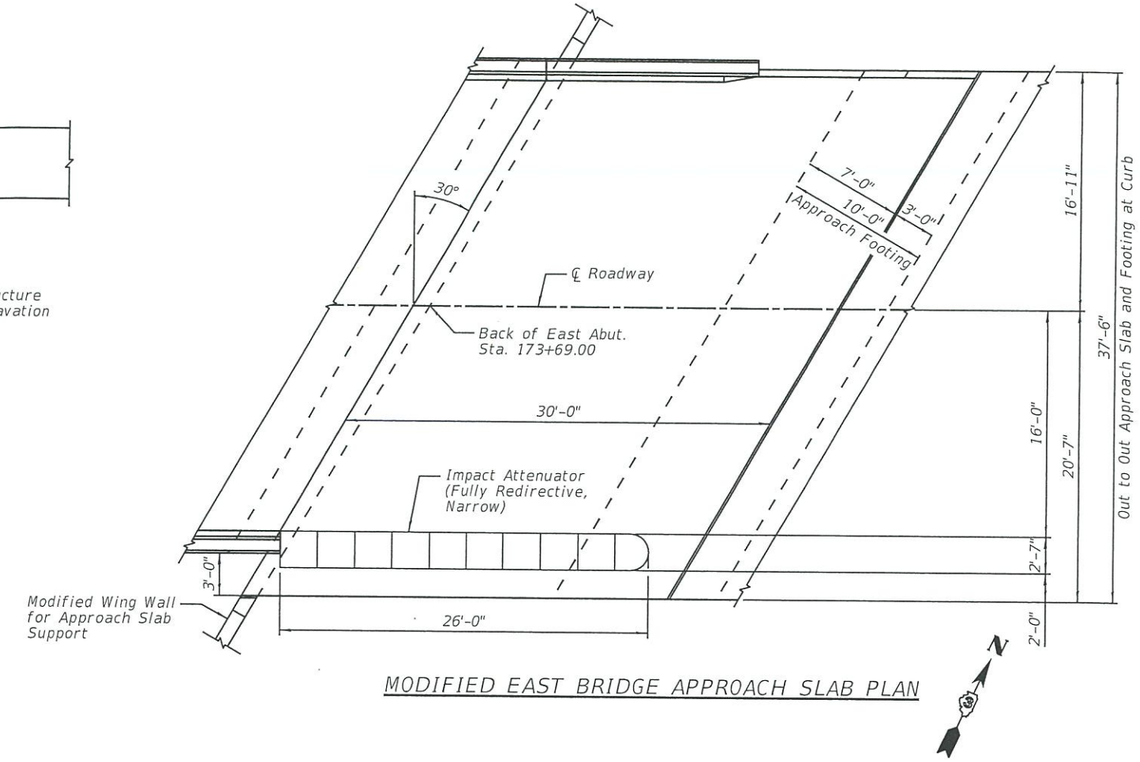
GENERAL PLAN
STRUCTURE NO. 050-0259
SHEET NO. 1 OF 2 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
169	121BR	LASALLE	2	1
		CONTRACT NO. 66A57		
		ILLINOIS FED. AID PROJECT		



SECTION THRU ABUTMENT

(Horiz. dimensions @ Rt. L's)

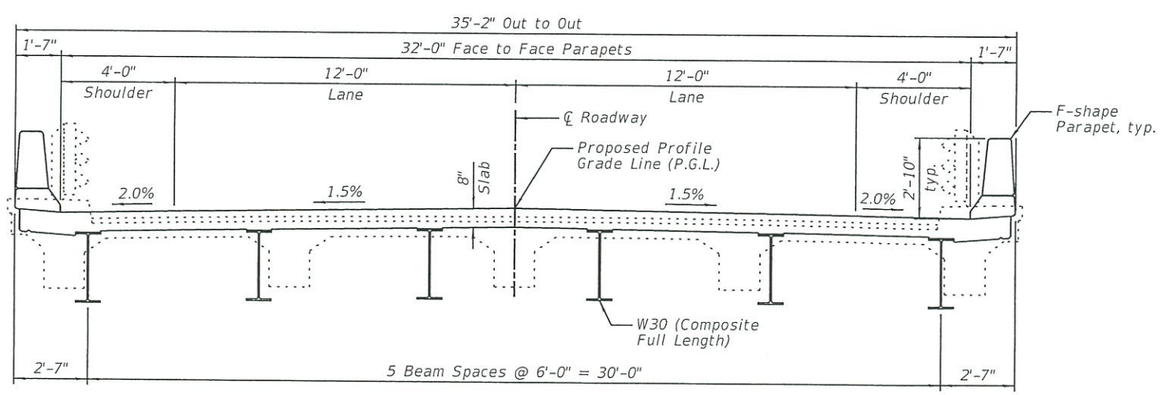


MODIFIED EAST BRIDGE APPROACH SLAB PLAN

APPROVED

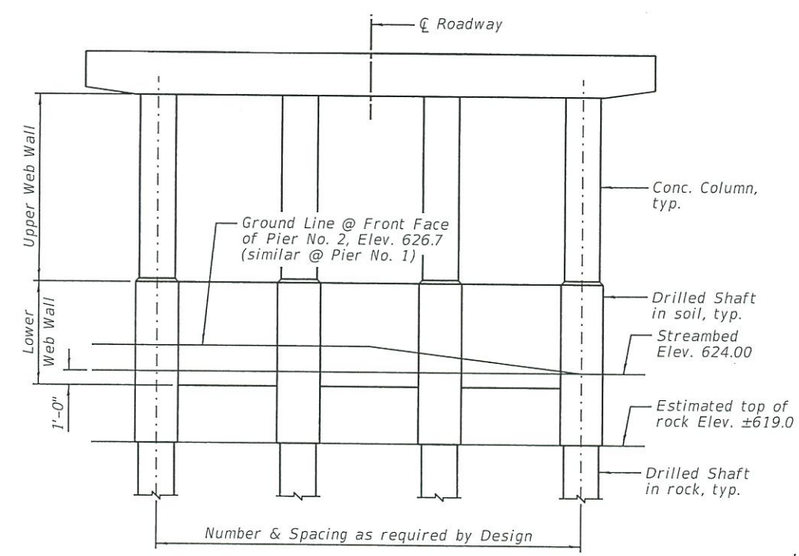
SEP 27 2017

AS A BASIS FOR
PREPARATION OF DETAILED PLANS



CROSS SECTION

(Looking East)



PIER SKETCH

(Looking East)

U.S. ROUTE 52 OVER
LITTLE VERMILION RIVER
F.A.S. 169 - SECTION 121BR
LASALLE COUNTY
STATION 173+02.00
STRUCTURE NO. 050-0259

Farnsworth GROUP
2709 McGRAW DRIVE
BLOOMINGTON, ILLINOIS 61704
(309) 663-8435 / info@f-w.com

DATE - 09/22/17	DESIGNED - PMG	REVISED
	CHECKED - JCZ	REVISED
	DRAWN - DJM	REVISED
	CHECKED - JML	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DETAILS
STRUCTURE NO. 050-0259
SHEET NO. 2 OF 2 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
169	121BR	LASALLE	2	2

CONTRACT NO. 66A57

ILLINOIS FED. AID PROJECT