Existing Structure (SN 066-0006):
The plans dated 1927 show that the original truss structure was erected with 7 cast-in-place approach spans on S.B.I. Route 83 in Sections 123 B & C. The plans dated 1971 show the superstructure was replaced with 9 spans of PPC deck beams on a widened substructure and one additional pier. The plans from 1994 show the removal of the asphalt overlay and installation of a 5½ inch concrete overlay with epoxy coated reinforcement.

Traffic Control:
Staged Construction will be utilized to maintain one lane of traffic during construction.

No Salvage

Bench Mark: RM 6
Chiseled square on top of the northeast corner of the concrete gage structure.
Elev. 563.386

Bench Mark: RM 8
Lag bolt in telephone pole 30 ft. upstream and 100 ft. landward of gage.
Elev. 555.378

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

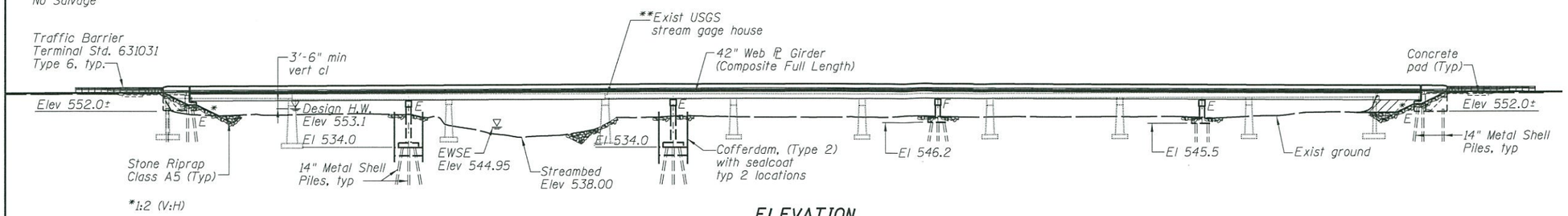
DESIGN SPECIFICATIONS
2014 AASHTO LRFD Bridge Design Specifications
7th Edition

DESIGN STRESSES
FIELD UNITS

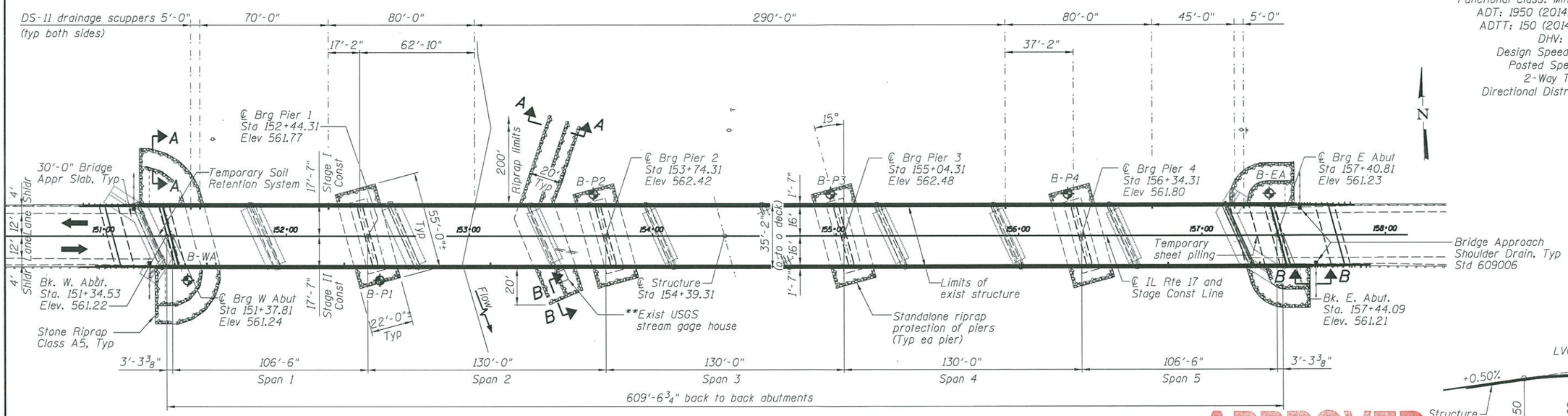
f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (M270 Grade 50W)

SEISMIC DATA
Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.089g
Design Spectral Acceleration at 0.2 sec. (S_{DS}) = 0.125g
Soil Site Class = D

HIGHWAY CLASSIFICATION
Il Rte. 17 (FAP 639)
Functional Class: Minor Arterial (Rural)
ADT: 1950 (2014); 3699 (2035)
ADTT: 150 (2014); 407 (2035)
DHV: 195
Design Speed: 55 m.p.h.
Posted Speed: 55 m.p.h.
2-Way Traffic
Directional Distribution: 50:50



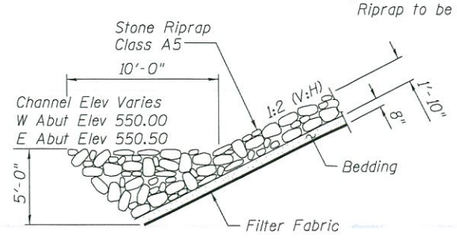
ELEVATION



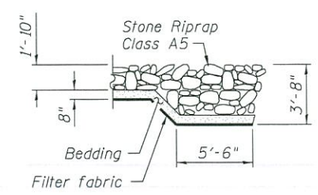
PLAN

**Existing USGS stream gage house and instrumentation shall be removed and discarded. Location of gage house pad to be determined by USGS and the Engineer. Gage house will be built and paid for by USGS.

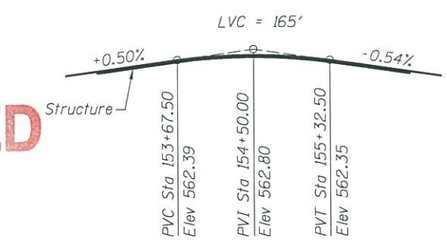
Note:
Riprap to be detailed and paid for in Roadway plans.



SECTION A-A

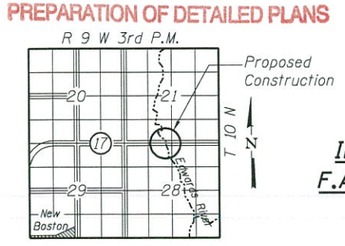


SECTION B-B



PROFILE GRADE
(Along ℄ Rdwy.)

APPROVED
MAY 11 2015
AS A BASIS FOR PREPARATION OF DETAILED PLANS



LOCATION SKETCH

WATERWAY INFORMATION

Drainage Area = 445 sq mi Low Grade Elev. 558.00 @ Sta. 167+92

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	8,230	1,895	2,017	552.2	2.1	1.5	554.3	553.7
Design	50	11,700	2,405	2,534	553.1	2.8	1.9	555.9	555.0
Base	100	13,200	2,576	2,706	553.4	3.0	2.1	556.4	555.5
Max. Calc.	500	16,700	2,975	3,112	554.1	3.6	2.4	557.7	556.5

10 Year Velocity through Existing Structure = 4.3 ft/s
10 Year Velocity through Proposed Structure = 4.1 ft/s

DESIGN SCOUR ELEVATION TABLE

Event/Limit	Design Scour Elev (ft.)						Item 113
State	W Abut	Pier 1	Pier 2	Pier 3	Pier 4	E Abut	
Q100	552.0	505.0	505.0	541.2	540.5	552.0	5
Q500	552.0	500.0	500.0	539.2	538.5	552.0	
Design	552.0	505.0	505.0	541.2	540.5	552.0	
Check	552.0	500.0	500.0	539.2	538.5	552.0	

GENERAL PLAN
IL. RT. 17 OVER EDWARDS RIVER
F.A.P. RT. 639 SECTION (123B)BR-1
MERCER COUNTY
STATION 154+39.31
STRUCTURE NO. 066-0021

FILE NAME = I:\1001\5375_ILRte17\CADD\Structural\ts&l.dgn

CHASTAIN & ASSOCIATES LLC
CONSULTING ENGINEERS
184-001397

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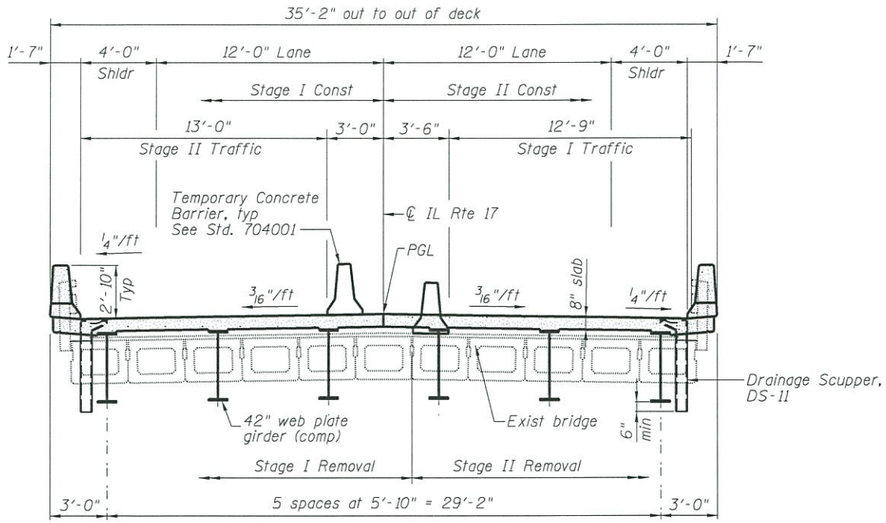
PLOT SCALE = 60.0000 ' / in.	DRAWN - RLK	REVISED -	
PLOT DATE = 5/4/2015	CHECKED - JMB	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

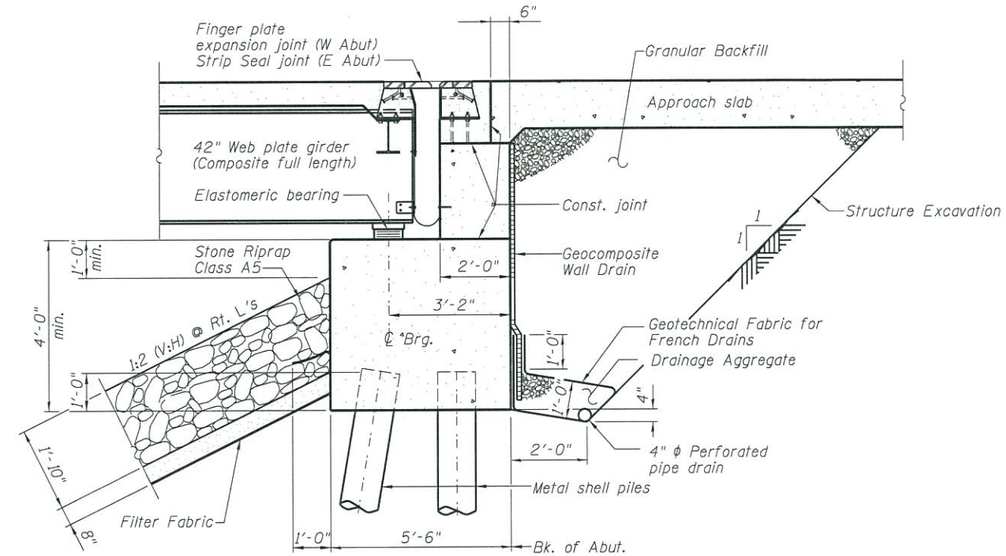
GENERAL PLAN AND ELEVATION

SHEET NO. OF SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
639	(123B)BR-1	MERCER		
		CONTRACT NO. 68663		
		ILLINOIS FED. AID PROJECT		

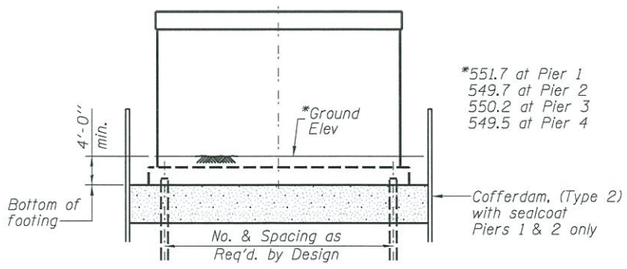


CROSS SECTION THRU DECK

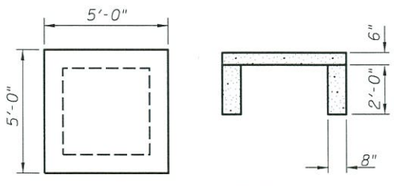


SECTION THRU PILE SUPPORTED STUB ABUTMENT

(Horiz. dim. @ Rt. L's)



PIER SKETCH



PLAN

SECTION

GAGE HOUSE PAD DETAIL

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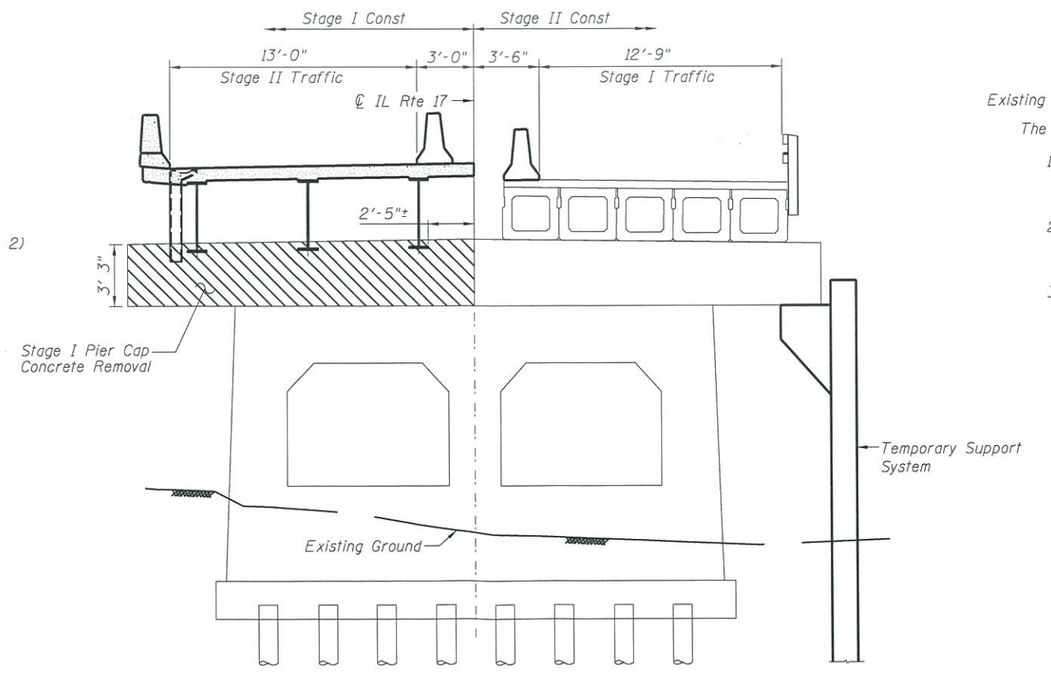

EXISTING PIERS 4 THRU 8

Existing Substructure Staging Notes:

The following items need addressed during the preparation of the Final Plans:

1. The West and East Abutment will need a temporary support system to provide stability to the abutment caps during the Stage I traffic period. Details and design loads will be provided to the Contractor in the Final Plans.
2. Piers 1 thru 3 shall only have the pier cap removed to the centerline of pier during Stage I removal, similar to as shown for existing piers 4 thru 8 on this sheet.
3. Piers 4 thru 8 shall have the pier cap cantilever supported by temporary support systems during the Stage I traffic period. Final design loads for the Contractor will be provided in the Final Plans.

APPROVED

MAY 11 2015

AS A BASIS FOR PREPARATION OF DETAILED PLANS

DETAILS
IL. RT. 17 OVER EDWARDS RIVER
F.A.P. RT. 639 SECTION (123B)BR-1
MERCER COUNTY
STATION 154+76.19
STRUCTURE NO. 066-0021

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	PLOT SCALE = 8.0000 ' / in.	DRAWN - RLK	REVISED -
	PLOT DATE = 5/4/2015	CHECKED - JMB	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DETAILS

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