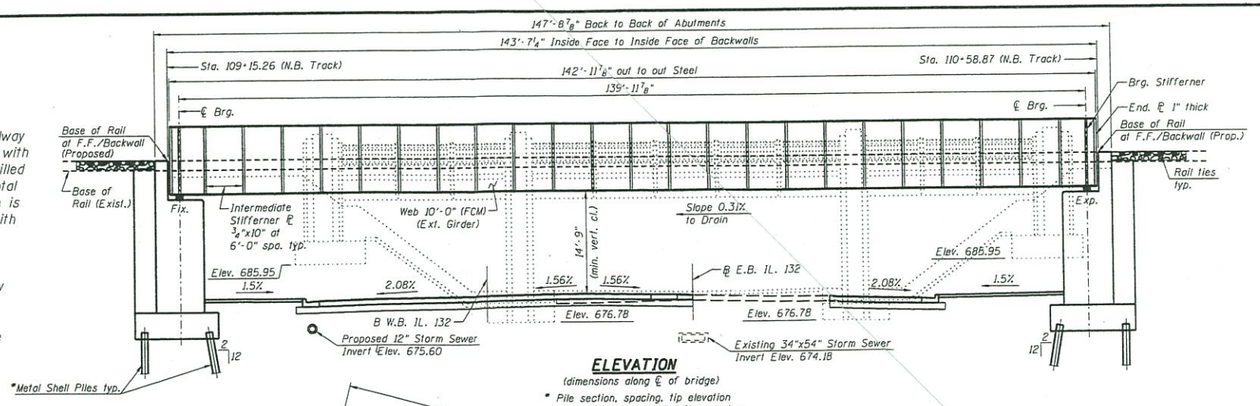
BENCH MARK:

TMB "A" - Elev. 696.20, NW Bolt of old billbord foundation ±50 ft. south of Rte. 132 ℄ and ±50 ft. west of Pine Grove Ave.

EXISTING STRUCTURE:

Existing bridge S.N. 049-0106 was constructed in 1938 for C&NW Railway as Bridge No. 296 in Wisconsin Division. It is a three span structure with four steel beam stringers for each track supporting steel T-frames filled with concrete. The middle span is 51'-7" with end spans of 31'-6" Total length of the deck is 114'-7" and a width of 46 ft. Bridge center line is skewed 14°-33'. Substructure consists of wall type open abutments with slope walls and multi-column piers supported on spread footings.

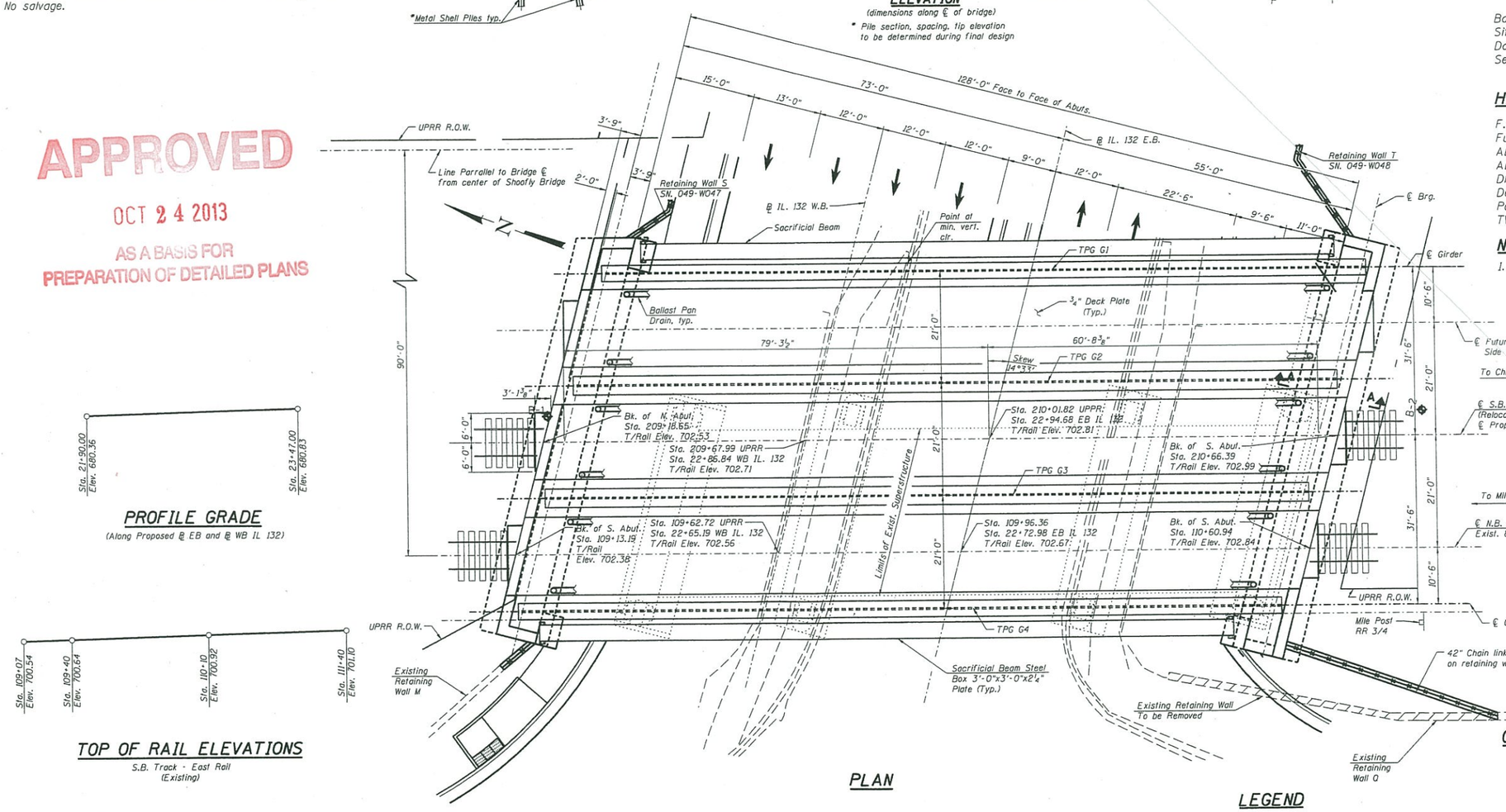
The existing structure will be completely removed and replaced with a single span through girder superstructure. The total length of the new bridge will be 128'-0" between abutment faces at right angle to the centerline of IL 132. The deck width will be 63'-0" feet and it will have closed abutments on pile foundations. A temporary shoofly bridge will be constructed to maintain railroad traffic during construction. No salvage.



ELEVATION

(dimensions along ℄ of bridge)

* Pile section, spacing, tip elevation to be determined during final design



PLAN

PROFILE GRADE

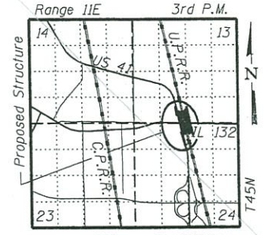
(Along Proposed ℄ EB and ℄ WB IL 132)

TOP OF RAIL ELEVATIONS

S.B. Track - East Rail (Existing)

LEGEND

◆ - indicates soil boring



LOCATION SKETCH

DESIGN SPECIFICATIONS

2010 AREMA Manual for Railway Engineering
2007 BNSF Railway-Union Pacific Railroad Guide for Railroad Grade Separation Project

DESIGN STRESSES

FIELD UNITS

f'c = 4,000 psi
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (Structural Steel ASTM A709 Grade 50)

LOADING

Cooper E80 or Alrenative Load on 4 Axles per AREMA Manual
Sacrificial beam vehicle impact load = 100 Kips

SEISMIC DATA

Base Acceleration Coefficient (AR) =4.0%g (100yr.)
Site Coefficient (S) = 1.0
Damping Adjustment Factor (D) = 1.0
Seismic Response Coefficent = 10.0 (100yr.)

HIGHWAY CLASSIFICATION

F.A.U. Rte. 1218 - IL Rte. 132
Functional Class: Prinipal Arterial
ADT: 25,200 (2013) 33,940 (2033)
ADTT: 685 (2013) 923 (2033)
DHV: 2,330
Design Speed: 40 m.p.h.
Posted Speed: 35 m.p.h.
TWO-Way Traffic

NOTES:

1. For limits of shoring, soil retention system, existing contours, and existing and proposed utilities see Sht. 3 of 3.

APPROVED
OCT 24 2013
AS A BASIS FOR PREPARATION OF DETAILED PLANS

GENERAL PLAN
UPRR BRIDGE MP 37.76
MILWAUKEE SUBDIVISION
OVER IL. ROUTE 132 (GRAND AVE.)
F.A.U. 1218 - SEC. 125X-N
GURNEE, LAKE COUNTY, ILLINOIS
STATION 22+94.68EB
STRUCTURE NO. 049-0602

HOH HARRY D. HEFTER-ASSOCIATES, INC. DESIGN AND CONSULTING ENGINEERS
55 East Jackson Blvd. Chicago, Illinois 60604 312/346-8131

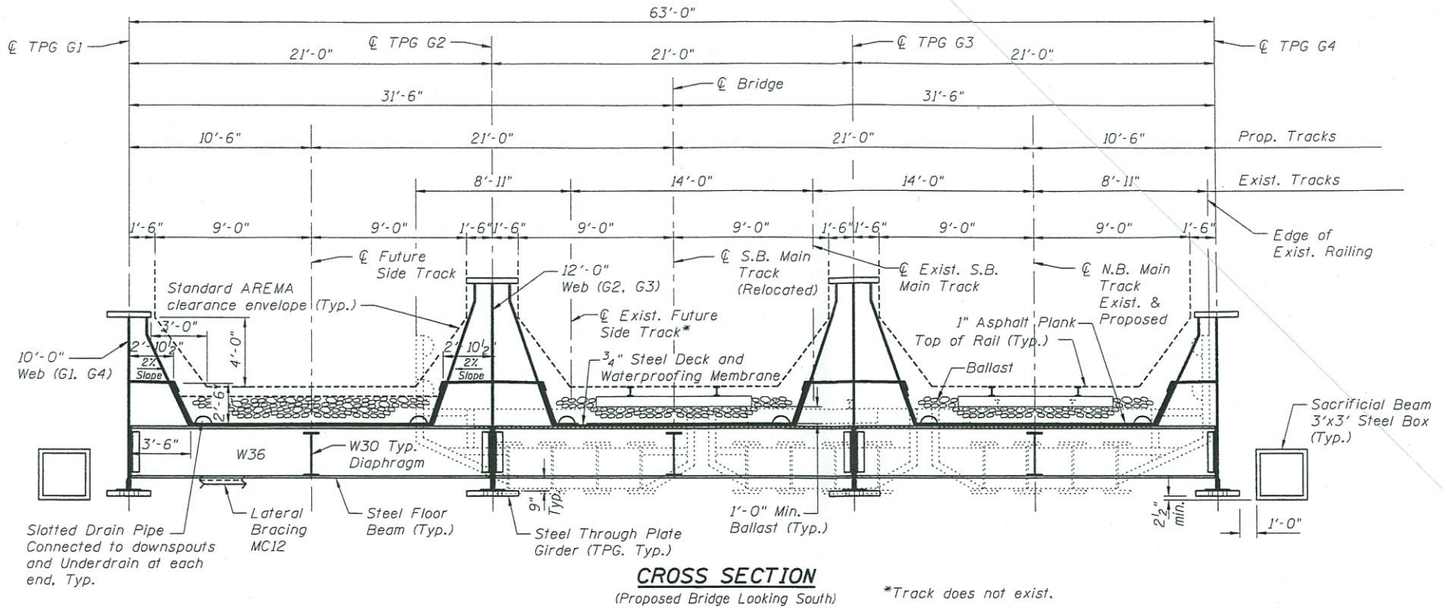
FILE NAME =	USER NAME = $USER$	DESIGNED - MMH	REVISED - ---
PROJECT NO. 3366		CHECKED - DNB	REVISED - ---
	PLOT SCALE = 23:7.9187 ' / IN.	DRAWN - R.VEJAR	REVISED - ---
	PLOT DATE = 9/25/2013	CHECKED - DNB	REVISED - ---

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

UNION PACIFIC RAILROAD BRIDGE
PLAN AND ELEVATION
SHEET NO. 1 OF 3 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1218	125X-N	LAKE		
DATE: 9/20/2013		CONTRACT NO. 60K80		
ILLINOIS FED. AID PROJECT				

H:\Projects\3366\Drawings\Structure\1\Bridge Plans\Bridge TSL-1-Rdgn



CROSS SECTION

(Proposed Bridge Looking South)

*Track does not exist.

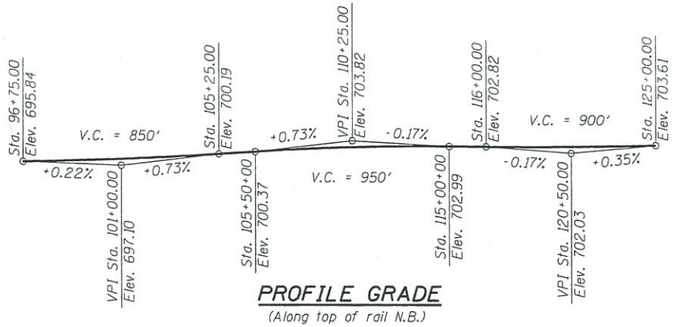
NOTE:

The flange sizes, web thicknesses, waterproofing system details, structural notes and connection details shall be provided in design phase.

APPROVED

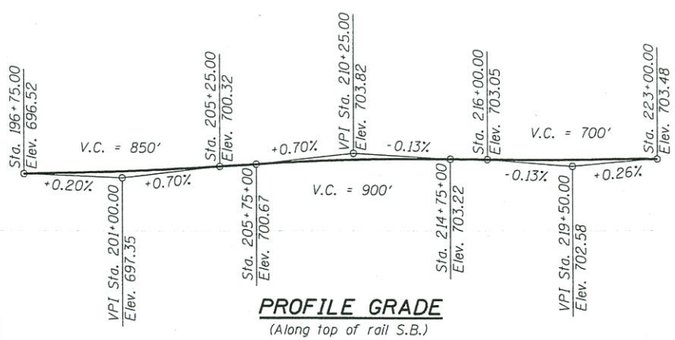
OCT 24 2013

AS A BASIS FOR PREPARATION OF DETAILED PLANS



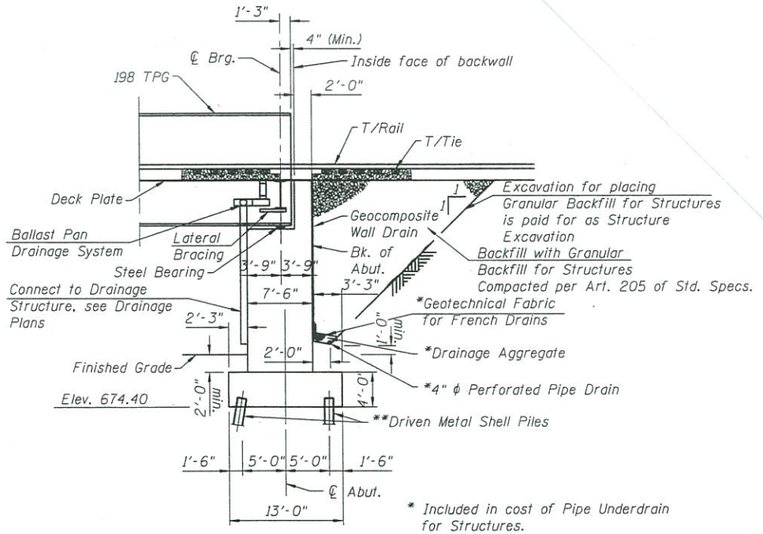
PROFILE GRADE

(Along top of rail N.B.)



PROFILE GRADE

(Along top of rail S.B.)



* Included in cost of Pipe Underdrain for Structures.

** Metal shell pile sections, spacing & tip elevations to be determined in the final design.

SECTION A-A
ABUTMENT SECTION

HOH HARRY O. HEFTER-ASSOCIATES, INC. DESIGN AND CONSULTING ENGINEERS
55 East Jackson Blvd. Chicago, Illinois 60604 312/346-8131

FILE NAME =	USER NAME = $USER$	DESIGNED - MMH	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SECTIONS AND DETAILS STRUCTURE NO. 049-0602
PROJECT NO. 3366		CHECKED - DNB	REVISED -		SHEET NO. 2 OF 3 SHEETS
	PLOT SCALE = 17.9390 '/ IN.	DRAWN - R.VEJAR	REVISED -		
	PLOT DATE = 9/25/2013	CHECKED - DNB	REVISED -		

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1218	125X-N	LAKE		
DATE: 9/20/2013		CONTRACT NO. 60K80		
ILLINOIS FED. AID PROJECT				

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