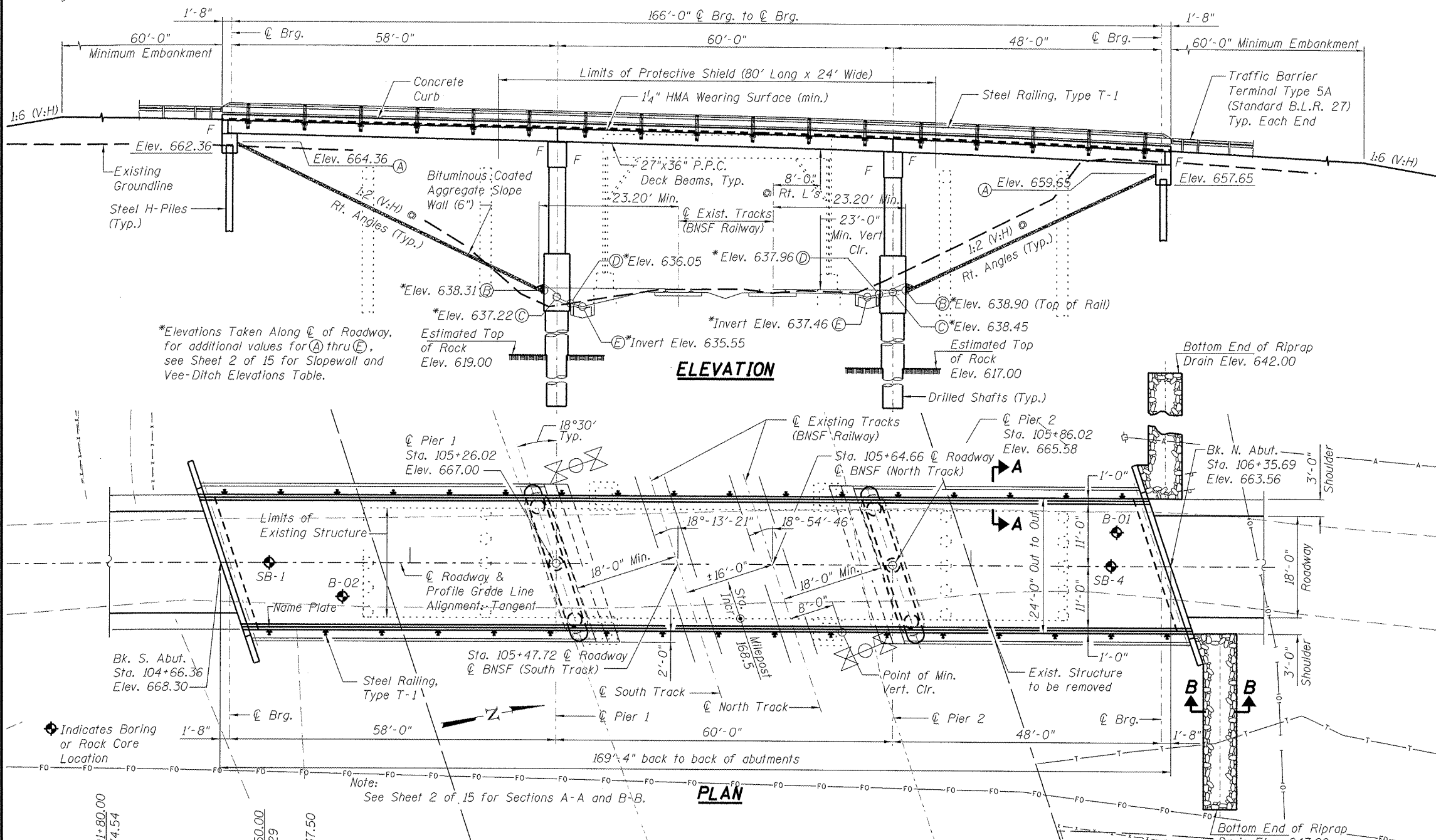


Bench Mark: Point 402 - Nail in east side of power pole west side of Barefoot Road approximately 45' North of Old Wagon Road @ - Elevation 631.51
 Point 401 - Nail in west side of fence post on the east side of Barefoot Road approximately 235' south of existing south Creek Bridge abutment - Elevation 642.03

Existing Historical Structure: Structure No. 048-9919. Existing five span structure was built in 1903 and consists of approach spans of twelve lines of timber stringers which support timber deck covered with oil and chip surface. The main span is composed of the same timber deck and surface supported on steel floor beams that are attached to steel through plate girders. The structure consists of two timber pile bent abutments with timber lagging, two timber pile bent piers and two steel bent piers that are set on concrete foundations. Bk. to Bk. abutment length = 128'-6". Out to Out of deck = 19'-0". Existing road will be closed and the existing structure to be removed and replaced. The BNSF RR will remove the Existing Structure.

No Salvage.

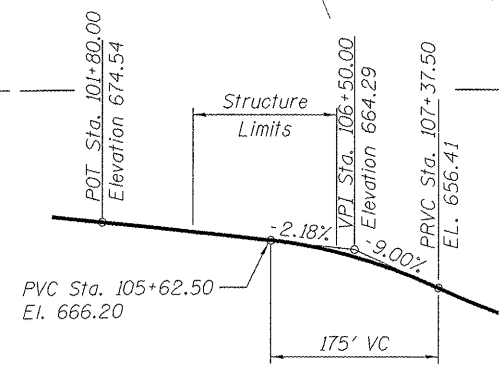


*Elevations Taken Along ϕ of Roadway, for additional values for (A) thru (E), see Sheet 2 of 15 for Slope Wall and Vee-Ditch Elevations Table.

ELEVATION

PLAN

PROFILE GRADE
(along ϕ roadway)



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

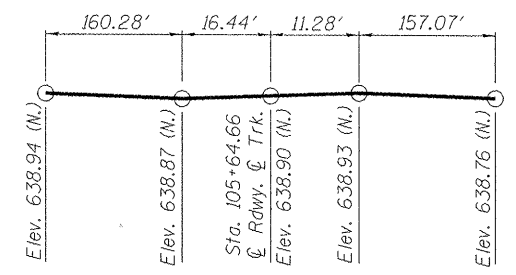
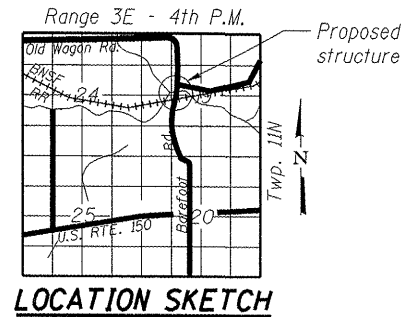
SEISMIC DATA
Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec (S₁) = 0.07
Design Spectral Acceleration at 0.2 sec (S_{0.2}) = 0.12
Soil Site Class = C

DESIGN SPECIFICATIONS
2010 AASHTO LRFD Bridge Design Specifications - 5th Edition with 2010 Interims

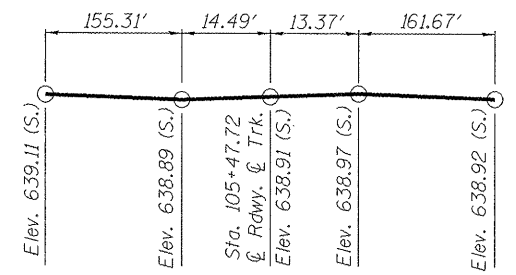
DESIGN STRESSES

Field Units:
 $f'_c = 3,500$ p.s.i.
 $f_y = 60,000$ p.s.i. (reinforcement)

Precast Prestressed Units:
 $f'_c = 6,000$ p.s.i.
 $f'_{ci} = 5,000$ p.s.i.
 $f_{pu} = 270,000$ p.s.i. ($\frac{1}{2}$ " ϕ low lax. strands)
 $f_{pbl} = 201,960$ p.s.i. ($\frac{1}{2}$ " ϕ low lax. strands)
 $f_y = 60,000$ p.s.i. (reinforcement)



**TOP OF NORTH RAIL ELEVATIONS
NORTH BNSF TRACK**
(Looking North)



**TOP OF NORTH RAIL ELEVATIONS
SOUTH BNSF TRACK**
(Looking North)



Signature: *Michael N. Mendenhall*
 DATE: 11-23-2011
 LIC. EXP. DATE: 11-30-2012

I certify that to the best of knowledge, information and belief, this bridge/box culvert design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the current AASHTO Standard Specifications for Highway Bridges

GENERAL PLAN
BAREFOOT ROAD (TR 176) OVER BNSF RAILWAY
SEC. 05-15103-00-BR
KNOX COUNTY
STATION 105+51.03
STRUCTURE NO. 048-9927

FILE NAME =	USER NAME =	DESIGNED - BWC	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL PLAN STRUCTURE NO. 048-9927	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
		CHECKED - BWC	REVISED -			TR 176	05-15103-00-BR	KNOX	97	27	
		PLOT SCALE =	REVISED -			CONTRACT NO. 89429					
		PLOT DATE =	REVISED -			SHEET NO. 01 OF 15 SHEETS					
ILLINOIS FED. AID PROJECT BROS 0095 128											

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