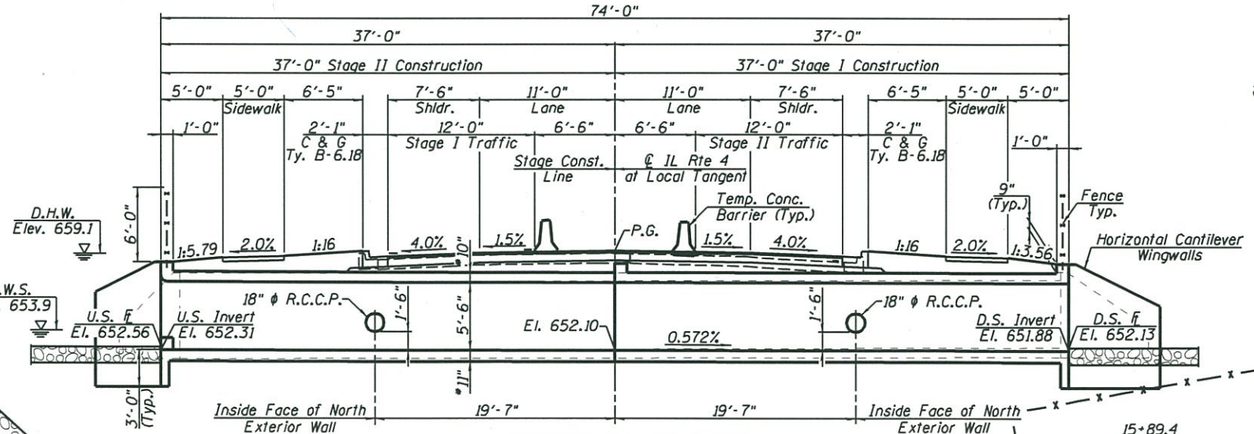
Benchmark: BM#108 - Chiseled "X" on west bolt of fire hydrant
27.4' Lt., Sta. 17+61.8, Elev. 665.05

Existing Structure: 059-7007 is a 9.3' x 5.5' concrete box culvert approximately 74 ft. in length. The existing structure is to be removed and replaced with a double 9' x 5.5' concrete box culvert. Traffic to be maintained utilizing Stage Construction.
No Salvage.

APPROVED

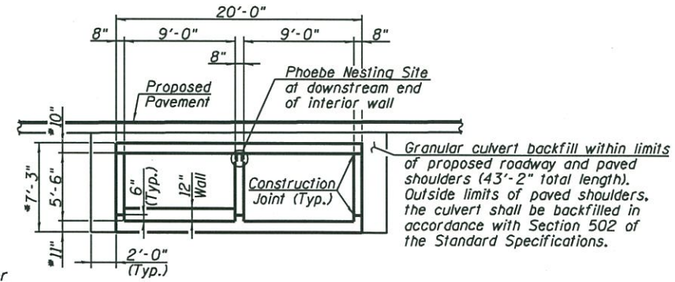
JUL 19 2016

AS A BASIS FOR PREPARATION OF DETAILED PLANS



LONGITUDINAL SECTION

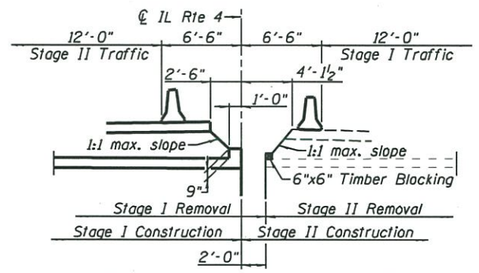
All dimensions are at Rt. L's to ℄ Rdwy. at Local Tangent



SECTION THRU BARREL

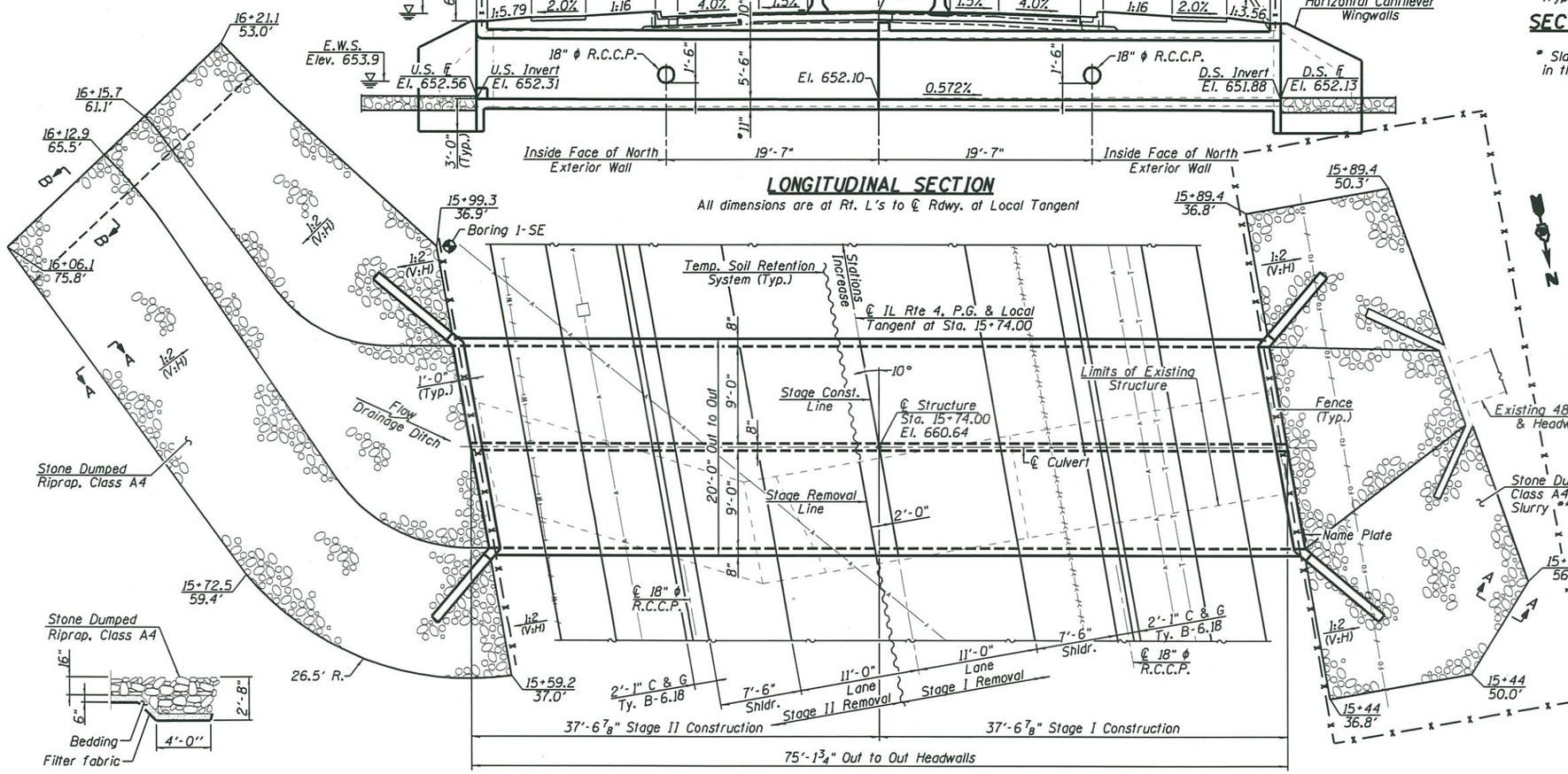
(Looking West)

* Slab thickness may be refined in the final design



STAGE CONSTRUCTION SKETCH

(Looking North)



PLAN

SECTION B-B

HIGHWAY CLASSIFICATION

F.A.P. 662 - IL Rte. 4
Functional Class: Minor Arterial (Non-Urban); Class II Truck Route
ADT: 5750 (2013); 9931 (2034)
ADTT: 460 (2013); 795 (2034)
DHV: 1190 (2034)
Design Speed: 50 m.p.h.
Posted Speed: 30 m.p.h.
Two-way Traffic Directional Distribution 50:50

LOADING HL 93

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

DESIGN SPECIFICATIONS

2014 AASHTO LRFD Bridge Design Specifications, 7th Edition with 2015 & 2016 Interim Revisions.

DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)

HORIZONTAL CURVE DATA

PI Sta. = 12+74.11
Δ = 0° 28' 33" (Rt.)
D = 0° 02' 57"
R = 116,392.40'
T = 483.40'
L = 966.79'
E = 1.00'
P.C. Sta. = 7+90.71
P.T. Sta. = 17+57.51

WATERWAY INFORMATION

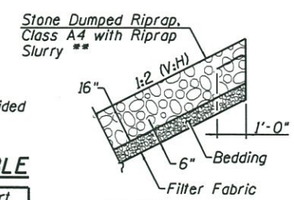
Drainage Area = 0.8 Sq. Mi.
Existing Overtopping Elevation 659.9 @ Sta. 15+28
Proposed Overtopping Elevation 660.6 @ Sta. 15+25

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	190	42	88	659.1	0.4	0.0	659.5	659.2
Design	50	384	42	88	659.6	0.7	0.3	660.3	659.9
Base	100	504	42	88	659.8	0.6	0.6	660.4	660.4
OVT(E)	28	277	42	88	659.4	0.5	0.2	659.9	659.5
OVT(P)	>500								
Max. Calc.	500	691	42	88	659.9	0.3	0.4	660.2	660.3

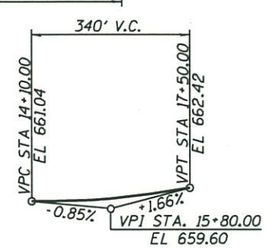
** Riprap Slurry to be provided at downstream end only

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	D.S. Invert 648.88	U.S. Invert 649.31

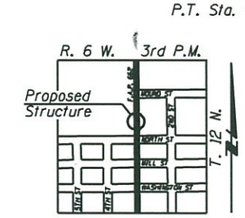


SECTION A-A



PROFILE GRADE

(Along ℄ IL Rte 4)



LOCATION SKETCH

GENERAL PLAN
IL ROUTE 4
OVER DRAINAGE DITCH
F.A.P. ROUTE 662 - SECTION (D)CR
MACOUPIN COUNTY
STA. 15+74.00
STRUCTURE NO. 059-2517

Veenstra & Kimm, Inc.
Springfield, IL Phone: (217)544-8033

USER NAME = ___	DESIGNED - GBR	REVISED - ___
	CHECKED - CPK	REVISED - ___
PLOT SCALE = ___	DRAWN - JRP	REVISED - ___
PLOT DATE = ___	CHECKED - CPK	REVISED - 7-19-16

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN
STRUCTURE NO. 059-2517
SHEET NO. __ OF __ SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
662	(D)CR	MACOUPIN	___	___

CONTRACT NO. 72C80

ILLINOIS FED. AID PROJECT