

Benchmark BM 157-26: RR spike driven 1' above the ground on the north side of PP located 31' south of the center of IL 140, 77' east of the center of IL 157, and 36' west of the center of Wolf Avenue in Hamel. Approximate Lat. & Long.: N38°50'20"; 89°50'40"

Existing Structure: SN 060-2454 was built in 1921 as a single span reinforced concrete slab bridge supported on reinforced concrete vertical abutments. The original bridge length is 24'-0" end to end slab with no skew, and widened at unknown date with 12'x8' reinforced concrete culvert extensions on the east and west sides of the bridge with total out-to-out width of 45'-0".

Traffic to be detoured during construction.

No salvage.

**APPROVED**

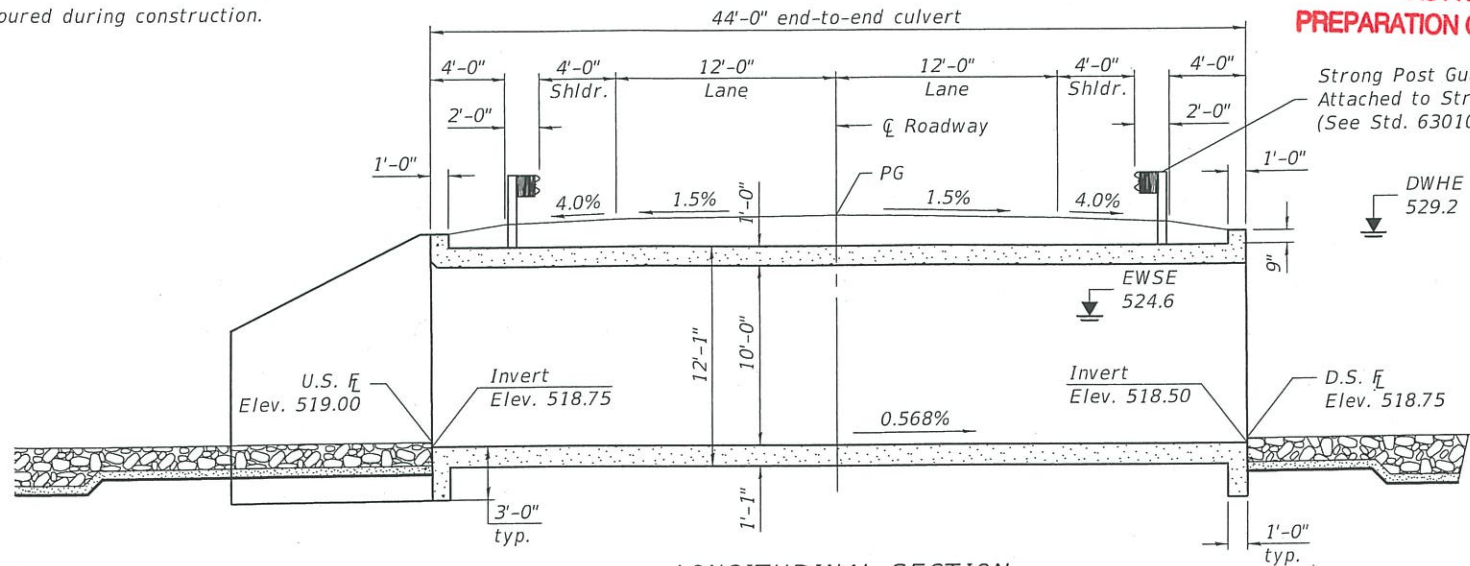
**MAY - 3 2018**

**AS A BASIS FOR PREPARATION OF DETAILED PLANS**

**WATERWAY INFORMATION**

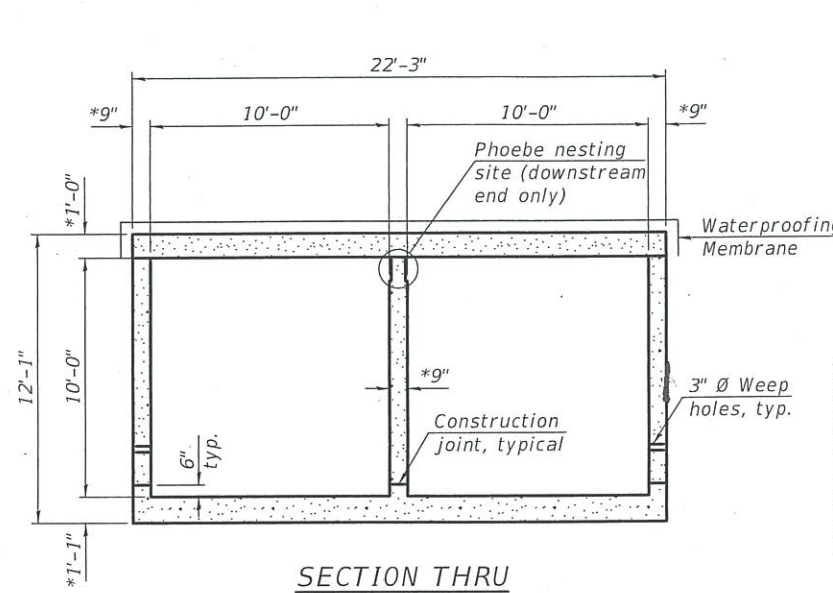
Drainage Area = 2.06 sq. mi.		Existing Overtopping Elev. 530.4 ft. @ Sta. 378+00.00 Proposed Overtopping Elev. 531.4 ft. @ Sta. 378+00.00							
Flood	Freq. Yr.	Discharge C.F.S.	Opening Ft <sup>2</sup>		Natural H.W.E.	Head - Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	10	630	94	166	527.3	0.9	0.6	528.2	527.9
Base	50	1020	96	200	529.2	1.9	1.2	531.1	530.4
Exist. Overtopping	100	1200	96	200	529.9	2.4	1.6	532.3	531.5
Prop. Overtopping	35	950	96	--	528.9	1.7	--	530.6	--
Scour Check	100	1200	--	200	529.9	--	1.6	--	531.5
Max. Calc.	200	1380	96	200	530.5	2.8	1.8	533.3	532.3
	500	1630	96	200	531.3	2.2	2.0	533.5	533.3

10 year outlet velocity from existing structure = 6.7 ft./sec.  
10 year outlet velocity from proposed structure = 3.8 ft./sec.



**LONGITUDINAL SECTION**

(Horizontal dimensions are at right angles)

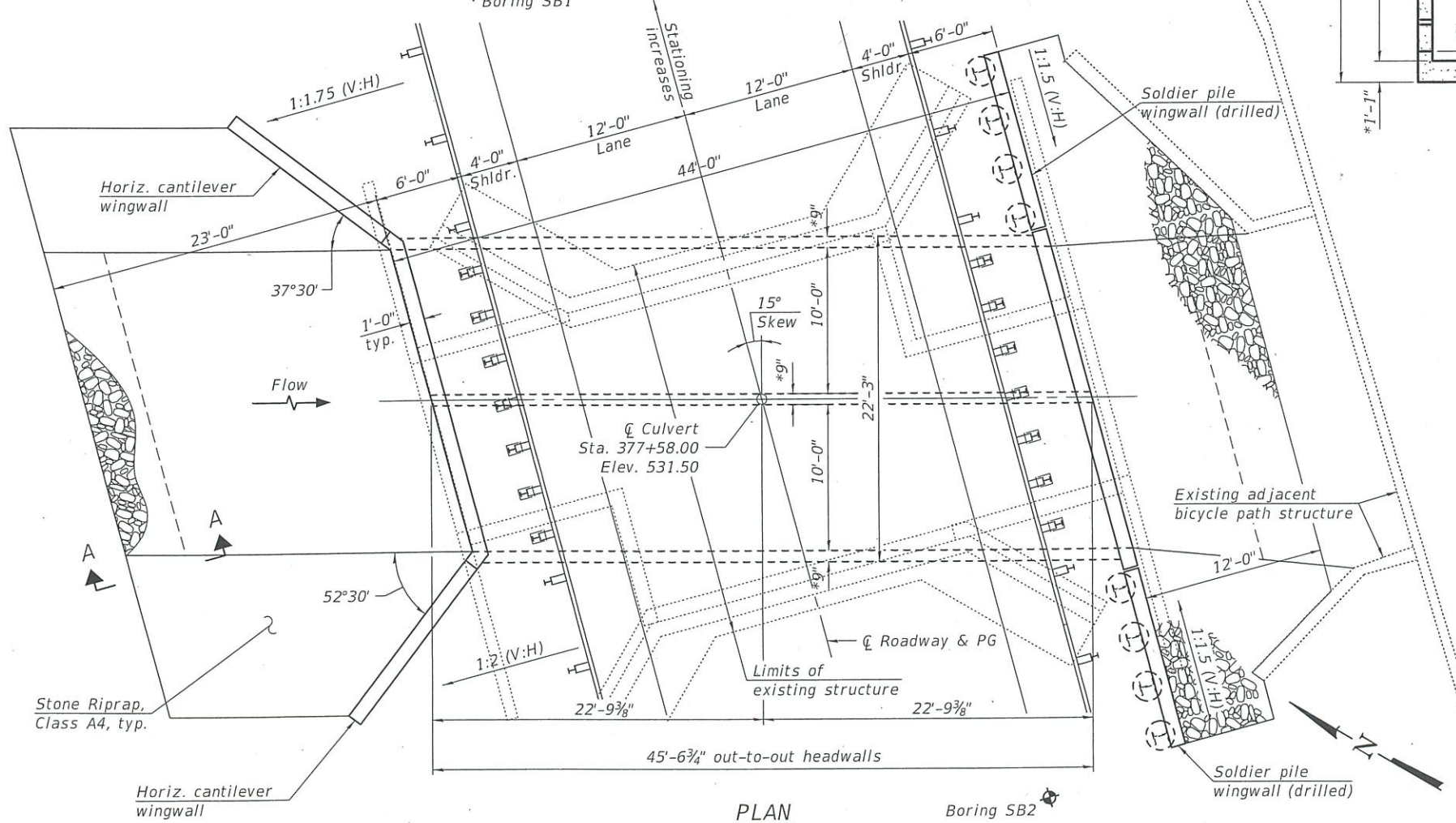


**SECTION THRU BARREL**

\* Refine in final design.

**PROFILE GRADE**

Along  $\bar{C}$  Roadway



**PLAN**

**DESIGN SPECIFICATIONS**

2017 AASHTO LRFD Bridge Design Specifications, 8th Edition

**DESIGN STRESSES**

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

**HIGHWAY CLASSIFICATION**

F.A.S. Rte. 770 - IL Rte.157  
Functional Class: Major Collector  
ADT: 2550 (2018); 2900 (2038)  
ADTT: 6.5% (2018/38)  
DHV: 250 (2018)  
Design Speed: 50 m.p.h.  
Posted Speed: 35 m.p.h.  
Two-Way Traffic  
Directional Distribution: 50:50

**LOADING HL-93**

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



**LOCATION SKETCH**

**GENERAL PLAN & ELEVATION**

IL RTE. 157 OVER  
TRIBUTARY TO SILVER CREEK  
F.A.S. RTE. 770, SEC. 66-BR  
MADISON COUNTY  
STATION 377+58.00  
STRUCTURE NO. 060-2052

MODEL: 0602052-76F18-TSL-001  
FILE NAME: pw:\1084EBID\INTEG. Illinois.gov\PWIDOT\Documents\IDOT Offices\Bureau of Bridges and Structures\Projects\0602052\CADD Plans\0602052-76F18.dgn

DESIGNED -	AL-BARRAE R. SHEBIB
CHECKED -	HAREEM I. DAR
DRAWN -	IAN J. ANDREWS / M.B.M.
CHECKED -	RICHARD J. CHAPUT

5/1/2018 - 11:21:10 AM

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SHEET 1 OF 1 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
770	66-BR	MADISON	1	1
CONTRACT NO.				
ILLINOIS FED. AID PROJECT				