

Benchmark #103 : 5/8" Rebar with yellow cap south side of Pratt Boulevard east of Willow Creek. Elev. 674.20

Existing Structure: S.N. 016-7852 built in 1959, is a triple 72"  $\phi$  cell corrugated metal pipe culvert with reinforced concrete sloped headwalls, approximate length is 140'-11". Structure to be removed and replaced by a reinforced triple barrel concrete box culvert. Roadway will be closed during construction.

No Salvage.

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	*	COOK	27	20
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

\* 02-00048-00-BR

**GENERAL NOTES**

1. Reinforcement bars shall conform to the requirements of AASHTO M31, M42, or M53 Grade 60.
2. Reinforcement bars designated (E) shall be epoxy coated.
3. All construction joints shall be bonded.
4. Exposed edges shall have a standard 3/4" chamfer unless otherwise noted.
5. Layout of slope protection system may be varied in the field to suit the ground conditions as directed by the Engineer.
6. F.F. = Front Face  
B.F. = Back Face
7. The cost of concrete and excavation for the wingwall facing is included in the cost of "Concrete Box Culverts".
8. The sheet pile section chosen for use shall be selected by the contractor from the table provided in Special Provision "Permanent Steel Sheet Piling" and shall have an "Effective Section Modulus" larger than or equal to that shown on the plans.

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	TOTAL
Stone Riprap, Class A4	sq yd	150
Filter Fabric For Use With Riprap	sq yd	220
Removal of Existing Structures No. 2	each	1
Reinforcement Bars, Epoxy Coated	pound	30,390
Concrete Box Culverts	cu yd	234.2
Form Liner Textured Surface	sq ft	157
Clear Protective Coating For Concrete	sq ft	902
Permanent Steel Sheet Piling	sq ft	1143

**LOADING HS20-44**

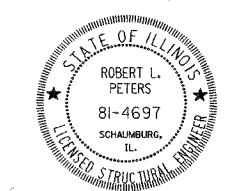
Allow 50#/sq. ft. for future wearing surface.

**DESIGN SPECIFICATIONS**

2002 AASHTO "Standard Specifications for Highway Bridges"

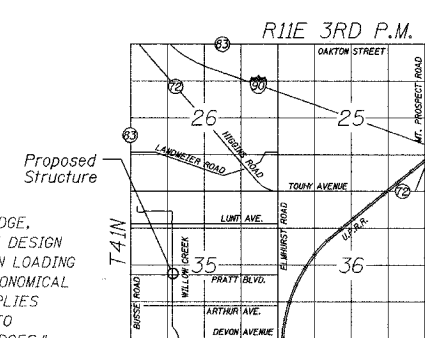
**DESIGN STRESSES**

$f'_c = 3,500$  psi  
 $f_y = 60,000$  psi (reinforcement)  
 $f_y = 38,500$  psi (sheet piling)  
 (AASHTO 202 Grade 38.5)



Robert L. Peters  
 ROBERT L. PETERS, P.E., S.E.  
 NO. 081-04697  
 EXP. DATE 11/30/06

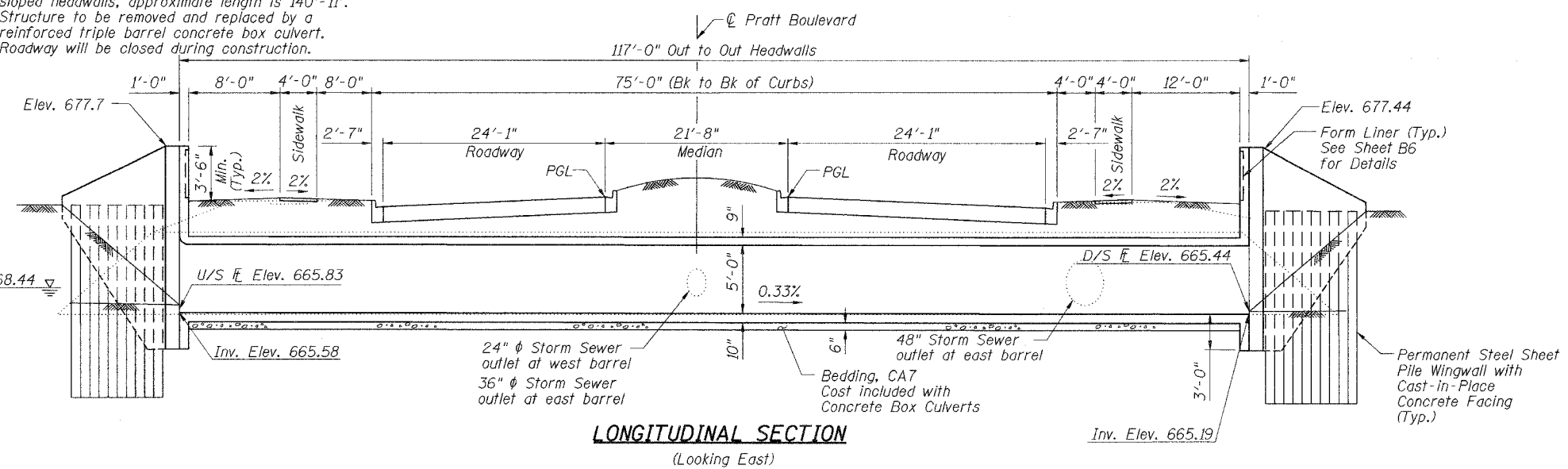
I CERTIFY THAT TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF, THIS BOX CULVERT DESIGN IS STRUCTURALLY ADEQUATE FOR THE DESIGN LOADING SHOWN ON THE PLANS. THE DESIGN IS AN ECONOMICAL ONE FOR THE STYLE OF STRUCTURE AND COMPLIES WITH REQUIREMENTS OF THE CURRENT "AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES."



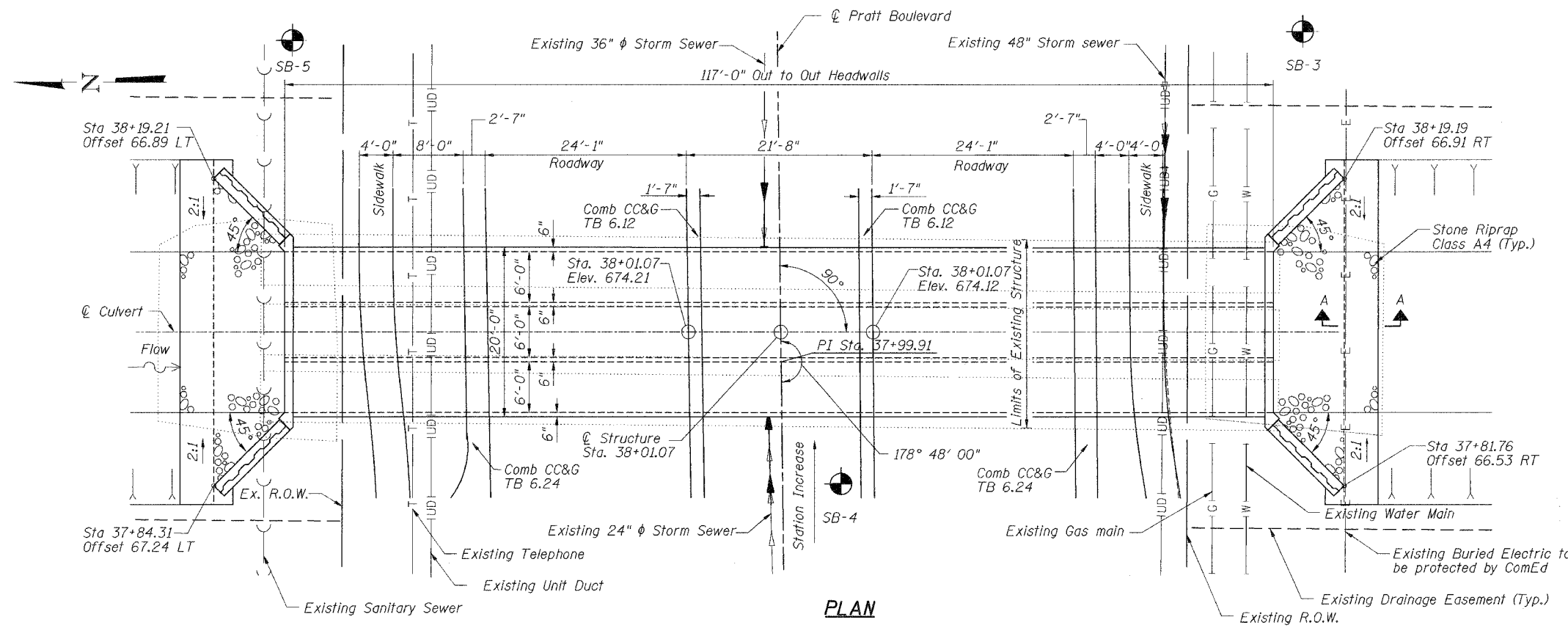
**LOCATION SKETCH**

**GENERAL PLAN**

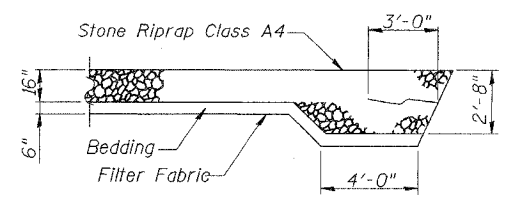
PRATT BOULEVARD OVER WILLOW CREEK  
 SECTION 02-00048-00-BR  
 COOK COUNTY  
 STATION 38+01.07



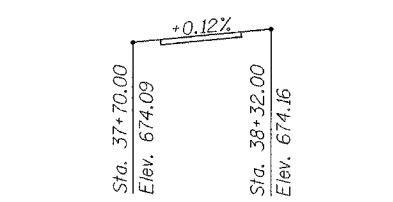
**LONGITUDINAL SECTION**  
(Looking East)



**PLAN**



**SECTION A-A**



**PROPOSED PROFILE GRADE**  
(along center median edge of pavement)

**WATERWAY INFORMATION**

Drainage Area = 345 Acres Low Grade Elev. 674.10 ft @ Sta. 37+78.8

Flood	Freq. Yr.	Q. C.F.S.	Opening Sq. Ft.		Natural H.W.E.		Head - Ft.		Headwater El.	
			Exist.	Prop.	Exist.	Prop.	Exist.	Prop.		
Design	30	129	44.1	53.7	668.44	0.37	0.09	668.81	668.53	
Base	100	163	51.9	61.5	668.84	0.40	0.12	669.24	668.96	
Overtopping	-	-	-	-	-	-	-	-	-	
Max. calc.	500	260	69.9	79.8	669.80	0.53	0.19	670.33	669.99	

DESIGNED	SLD
CHECKED	JRS
DRAWN	BAW
CHECKED	SLD

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11-01-04 12-02-04