

Benchmark #101: "x" in curb south side of Lunt Avenue east of Willow Creek. Elev. 674.45

Existing Structure: S.M. 016-7853 built in 1959, is a triple 66"  $\phi$  cell corrugated metal pipe culvert with reinforced concrete sloped headwalls, approximate length is 86'-4". 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.	SHEET NO. 89
11	*	COOK	27	24	12 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			

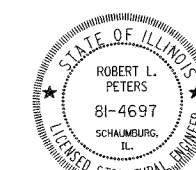
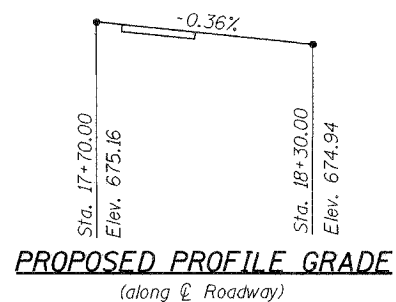
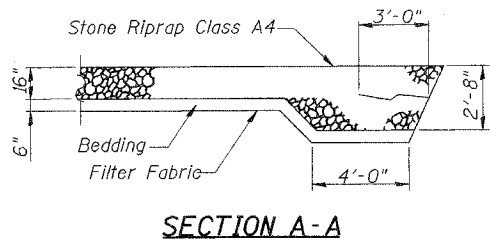
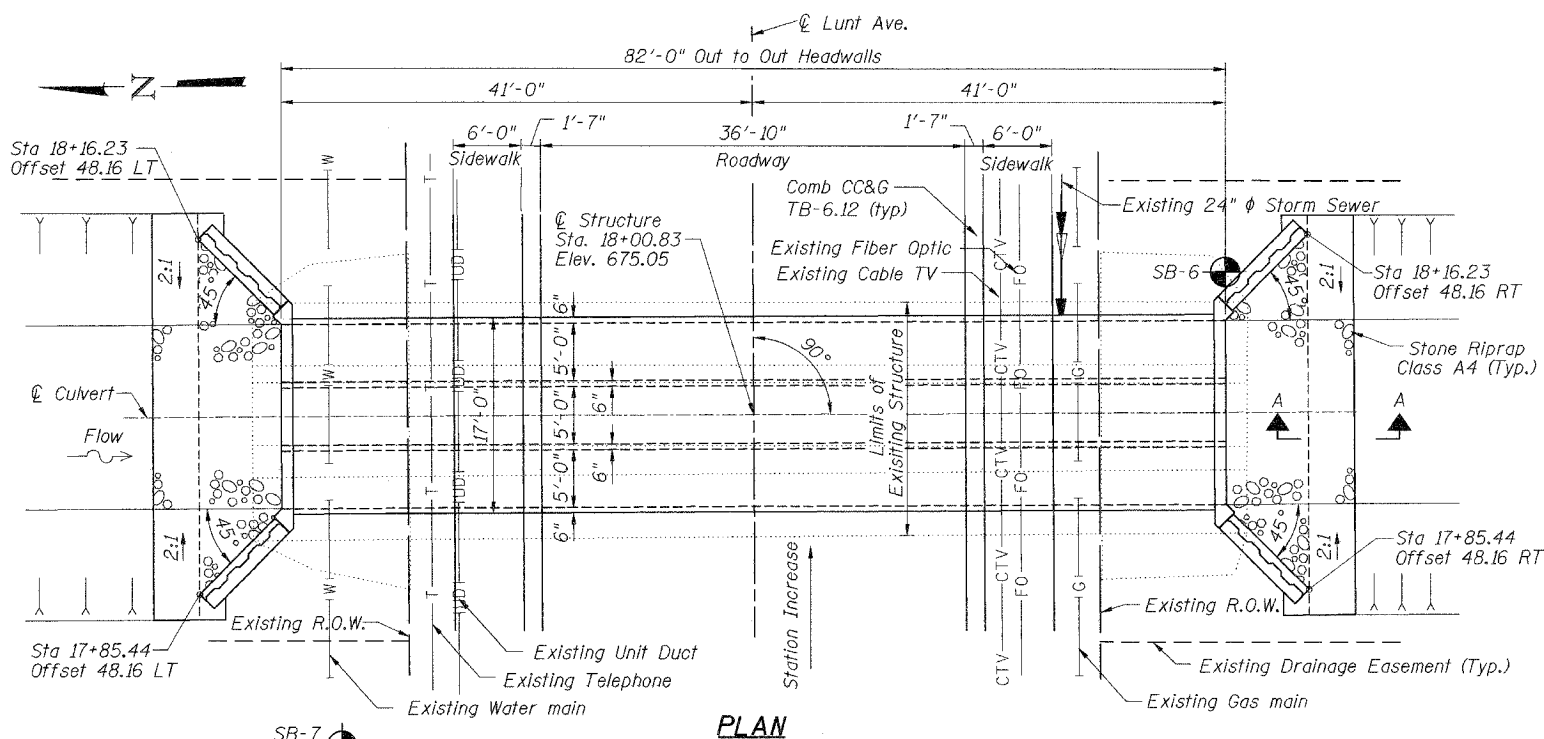
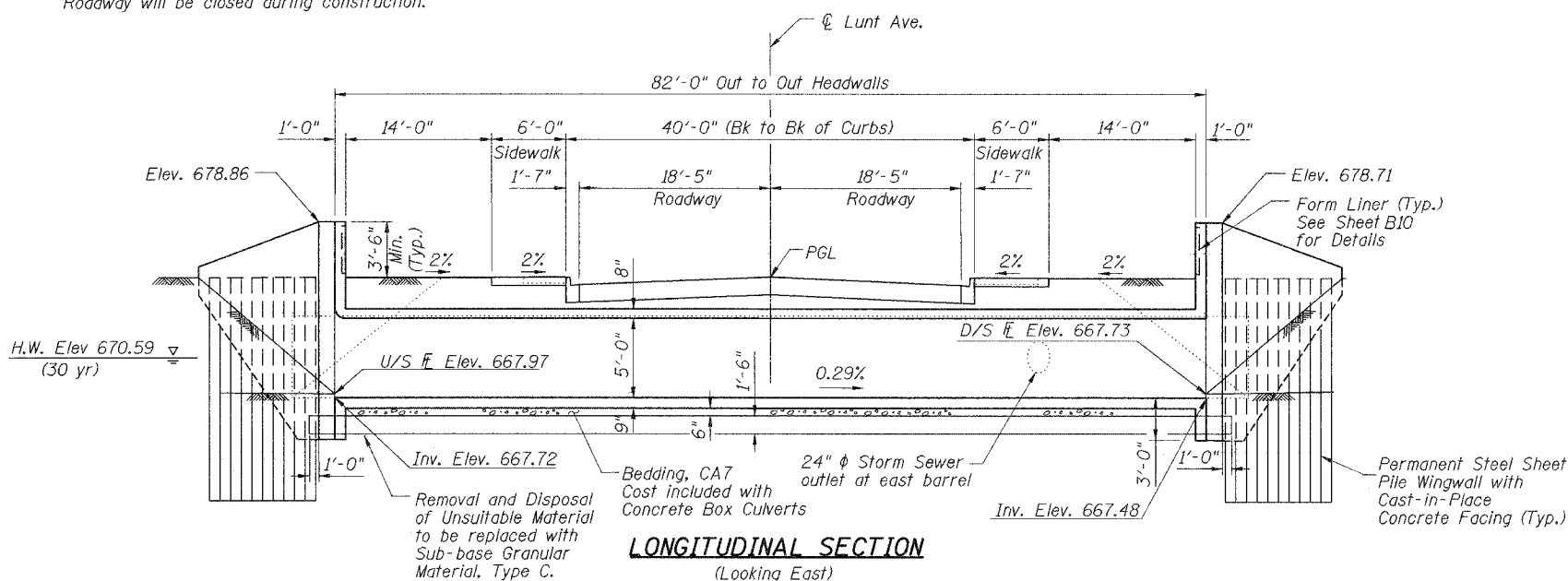
\*02-00048-00-BR #83779

**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  $\frac{3}{4}$ " 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
Removal and Disposal of Unsuitable Material	cu yd	100
Stone Riprap, Class A4	sq yd	130
Filter Fabric For Use With Riprap	sq yd	190
Sub-base Granular Material, Type C	cu yd	100
Removal of Existing Structures No. 3	each	1
Reinforcement Bars, Epoxy Coated	pound	18,670
Concrete Box Culverts	cu yd	144.5
Form Liner Textured Surface	sq ft	136
Clear Protective Coating For Concrete	sq ft	710
Permanent Steel Sheet Piling	sq ft	934



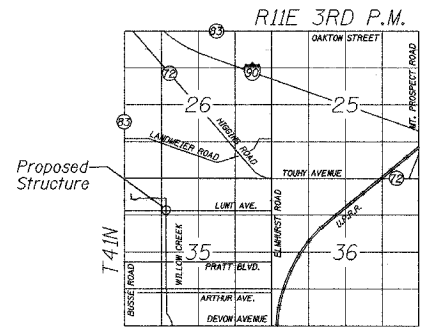
ROBERT L. PETERS, P.E., S.E.  
NO. 081-04697  
EXP. DATE 11/30/06

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."

**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)



**WATERWAY INFORMATION**

Drainage Area = 345 Acres Low Grade Elev. 674.95 ft @ Sta. 18+29.0

Flood	Freq. Yr.	Q. C.F.S.	Opening Sq. Ft.		Natural Head - Ft.		Headwater El.		
			Exist.	Prop.	Exist.	Prop.	Exist.	Prop.	
Design	30	129	42.9	45.3	670.59	0.36	0.19	670.95	670.78
Base	100	163	50.4	52.5	670.99	0.43	0.27	671.42	671.26
Overtopping	-	-	-	-	-	-	-	-	-
Max. calc.	500	260	67.5	70.8	672.04	0.67	0.45	672.71	672.49

**GENERAL PLAN**  
LUNT AVENUE OVER WILLOW CREEK  
SECTION 02-00048-00-BR  
COOK COUNTY  
STATION 18+00.83

**TRANSYSTEMS CORPORATION**  
3051 PERIMETER DRIVE, SUITE 1025  
SCHAUMBURG, IL 60173-5058  
TEL (847) 605-9600  
FAX (847) 605-9610

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