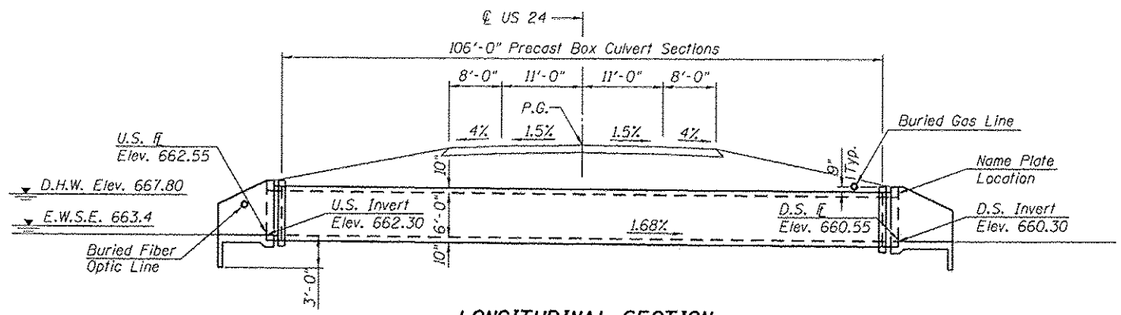
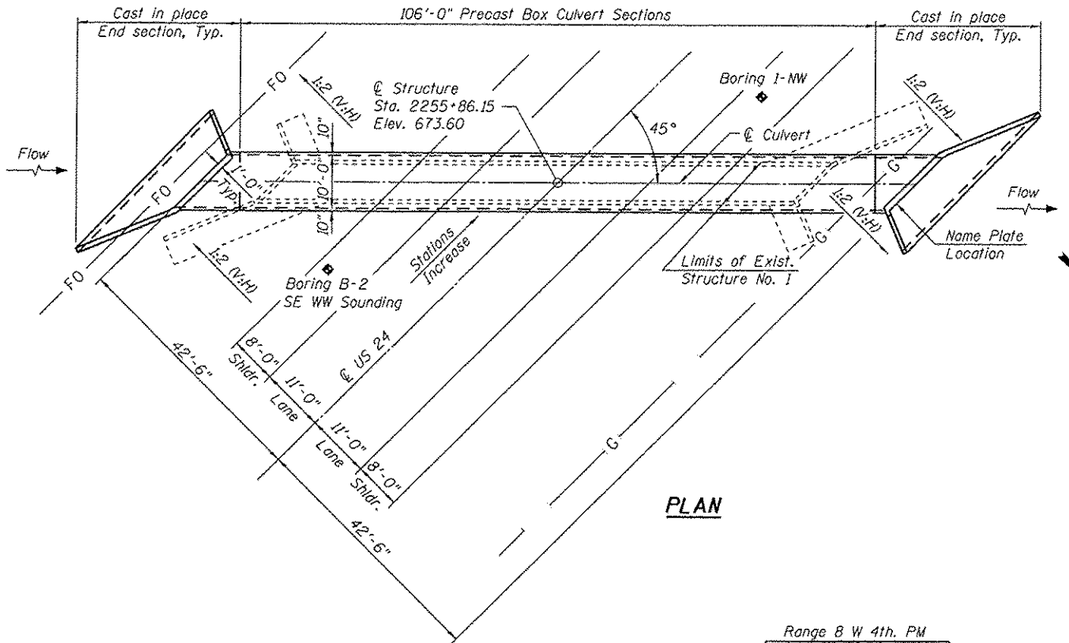
Benchmark: Chiseled "□" on south headwall; just west of N. 48th Street and U.S. 24 intersection, Sta. 2255+48.0, 34.0' Lt., Elev. 669.12.
Existing Structure: S.N. 001-7099 is a 6' by 6' reinforced concrete box culvert at a 45° skew originally built in 1955 as S.B.I. 31, Section (1,2,3)W.
The existing structure shall be removed and replaced. The roadway will be closed and traffic detoured during construction.
No Salvage.

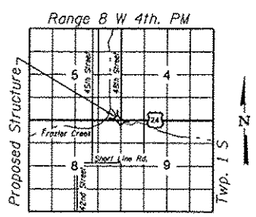


LONGITUDINAL SECTION

(Looking West - Dimensions at Rt. L's to ℄ Roadway unless noted otherwise)

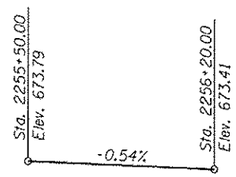


PLAN



LOCATION SKETCH

INDEX OF SHEETS



(No Curve)

PROFILE GRADE

(along ℄ roadway - US 24)

STATION 2255+86.15
BUILT 201_ BY
STATE OF ILLINOIS
F.A.P. RTE. 63 SEC. 1(RS-5, CR-1,2,3) 2(RS-6)
LOADING HL-93
STRUCTURE NO. 001-7129

NAME PLATE

See Std. 515001

UTILITY LEGEND

G = Buried Gas Line
FO = Buried Fiber Optic Line

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Removal of Existing Structures No. 1	Each	1
Name Plates	Each	1
Reinforcement Bars	Pound	3,980
Concrete Box Culverts	Cu. Yd.	47.0
Precast Concrete Box Culverts 10' X 6'	Feet	106
Granular Culvert Backfill	Cu. Yd.	916

* The cost of Structure Excavation shall be included in the pay item for "Precast Concrete Box Culverts 10' X 6'"

** The cost of Cast-In-Place End Sections shall be included in the respective individual pay items.

WATERWAY INFORMATION

Drainage Area = 0.44 mi.² — Exist. Overtopping Elev. 673.4 @ Sta. 2256+86.1 — Prop. Overtopping Elev. @ Sta.

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	290	30	50	667.0	2.2	0.0	669.2	667.0
Design	50	480	30	55	667.8	5.7	1.0	673.4	668.8
Base	100	570	35	60	667.9	5.8	2.3	673.8	670.2
Max. Calc.	500	790	40	60	668.5	5.8	3.6	674.2	672.0

10 Year Velocity through Proposed Culvert = 8.8 fps

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	Upstream	Downstream
	659.30	657.30

LOADING HL-93

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

DESIGN SPECIFICATIONS

2012 AASHTO LRFD Specifications with 2013 interims

DESIGN STRESSES

FIELD UNITS
f'_c = 3,500 psi
f_y = 60,000 psi (Reinforcement)
PRECAST UNITS
f'_c = 5,000 psi
f_y = 65,000 psi (welded wire fabric)

GENERAL NOTES

The precast concrete box culverts shall conform to the requirements of ASTM C1577.
Contact the District Geotechnical Engineer to verify foundation conditions meet plan requirements.
For riprap layout and quantities, see Roadway Plans.

STATE OF ILLINOIS
ALAN D. LUKENS
081-005167
QUINCY, ILLINOIS
LICENSED STRUCTURAL ENGINEER

12-4-13
Alan D. Lukens — Date
Licensed Structural Engineer
State of Illinois No. 081-005167
License Expires 11/30/2014

KLINGNER & ASSOCIATES, P.C.
Engineers · Architects · Surveyors
STATE OF ILLINOIS DESIGN FIRM # 1842738

1 REVISED SHEET 12-27-13

GENERAL PLAN & LONGITUDINAL SECTION
US 24 OVER TRIBUTARY TO FRAZIER CREEK
F.A.P. ROUTE 63
SECTION 1(RS-5, CR-1,2,3) 2(RS-6)
ADAMS COUNTY
STATION 2255+86.15
S.N. 001-7129

FILE NAME = O:\00files\000224\WO 1 - US 24 over Frazier Creek - Structure Plans\SN 001-7098 & SN 001-7099 Design Sheets\S.N. 001-7129 Design.dgn	USER NAME =	DESIGNED RJP	REVISED SEB 10-28-13
		CHECKED RJP	REVISED SEB 10-30-13
	PLOT SCALE =	DRAWN ADL	REVISED -
	PLOT DATE =	CHECKED RJP	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN
STRUCTURE NUMBER 001-7129
SHEET NO. 1 OF 5 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
63	(1)CR-1, (2)CR	ADAMS	43	17
		CONTRACT NO. 72C12		
	ILLINOIS FED. AID PROJECT			

Klingner & Associates P.C.