

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. 001-7098 was originally built as a 39'-6" box culvert at a 3° left ahead skew. The original year of construction is unknown. In 1955 the headwalls were removed and the structure was extended 6'-8" left and 4'-11" right under SBI Route 31, Section (1.2,3)W and (1.2,3)RS. The left extension was constructed at a 45° angle to the original box culvert and the right extension followed the existing 3° skew. In 1970 the headwalls were removed again and the structure was extended 27'-6" left and 27'-6" right under SBI Route 31, Section (1.2,3&4) RS-2. The right extension was constructed at a 45° angle to the original box culvert.
 The existing structure shall be removed and replaced. The roadway will be closed to all traffic during construction.
 No Salvage.

INDEX OF SHEETS

1. General Plan
2. General Data
3. Culvert Details
4. -
- 5.-6. Boring Logs

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Removal of Existing Structures No. 2	Each	1
Rock Excavation for Structures	Cu. Yd.	127
Name Plates	Each	1
Reinforcement Bars	Pound	5,030
Concrete Box Culverts	Cu. Yd.	53.1
Precast Concrete Box Culverts 12' X 6'	Feet	108
Granular Culvert Backfill	Cu. Yd.	1,192

GENERAL NOTES

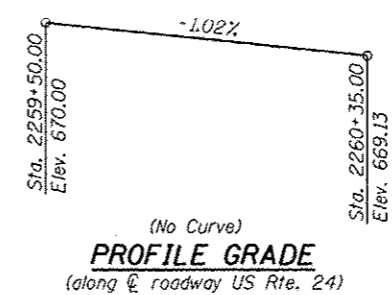
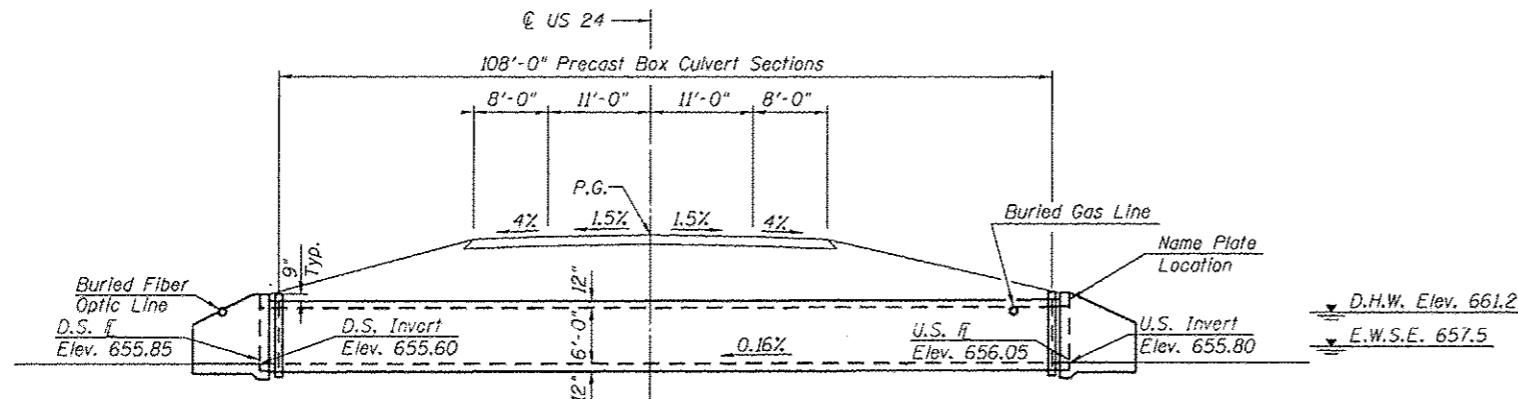
The precast concrete box culverts shall conform to the requirements of ASTM C1577.
 Contact District Geotechnical Engineer to verify foundation conditions meet plan requirements.
 For riprap layout and quantity, see Roadway Plans.

*The cost of Structure Excavation shall be included in the pay item for "Precast Concrete Box Culverts 12' X 6"
 ** The cost of Cast-In-Place End Sections shall be included in the respective individual pay items.

WATERWAY INFORMATION

		Exist. Low Grade Elev. 668.7 @ Sta. 2261+50		Prop. Low Grade Elev. @ Sta.		
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Nat. Prop. H.W.E.	Head - Ft. Exist. Prop.	Headwater El. Exist. Prop.
Design	10	390	50	660.2	0.7	660.9
Base	100	780	55	661.6	5.4	667.0
Max. Calc.	500	1,080	55	662.5	6.3	669.3

10 Year Velocity through Proposed Culvert = 9.1 fps



DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	Upstream	Downstream
	654.88	654.68

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)

UTILITY LEGEND

- G = Buried Gas Line
- FO = Buried Fiber Optic Line

PROFILE GRADE

(along @ roadway US Rte. 24)

STATION 2259+94.00
 BUILT 2011 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. 001-7130

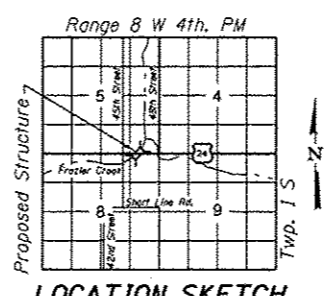
NAME PLATE
 See Std. 515001



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

12-4-13
 Date

GENERAL PLAN & LONGITUDINAL SECTION
US 24 OVER FRAZIER CREEK
F.A.P. ROUTE 63
SECTION 1(RS-5, CR-1.2.3) 2(RS-6)
ADAMS COUNTY
STATION 2259+94.00
S.N. 001-7130



PLAN

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

GENERAL PLAN
 STRUCTURE NUMBER 001-7130
 SHEET NO. 1 OF 6 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
63	1(RS-1, 2)CR	ADAMS	43	22

CONTRACT NO. 72C12
 ILLINOIS FED. AID PROJECT
 Klingner & Associates P.C.

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

FILE NAME	USER NAME	DESIGNED	REVISION	DATE
	RJP	RJP	SEB	10-28-13
	ADL	ADL	REVIS	10-30-13
	RJP	RJP	REVIS	
	ADL	ADL	REVIS	