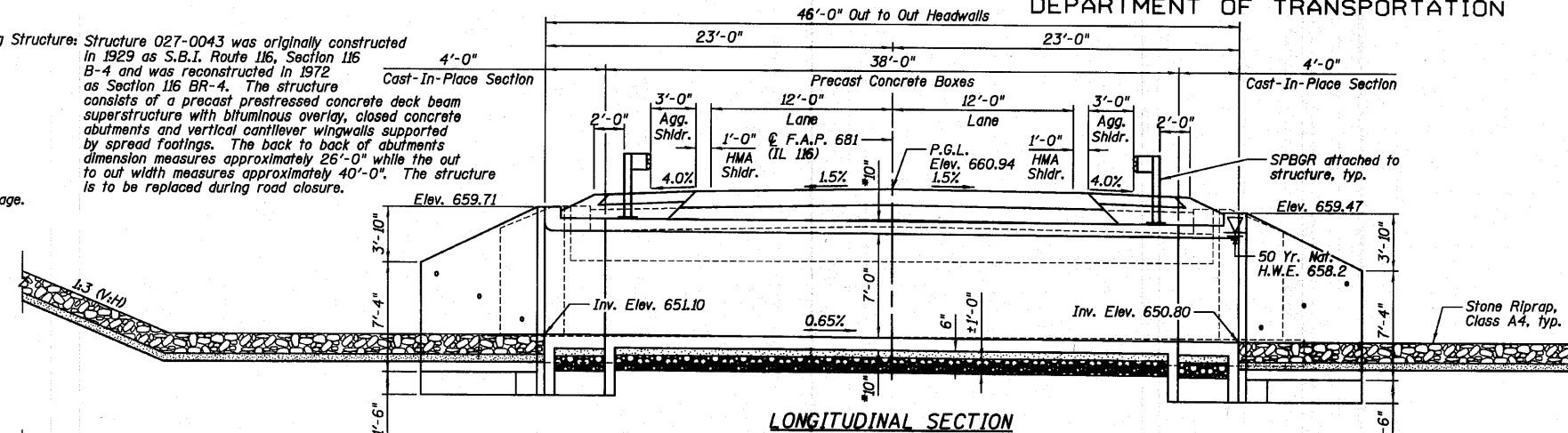


Benchmarks: 1.) BM #90 Chiseled "C" on northwest wingwall, station 26+51/22' Lt., Elevation 661.83
 2.) BM #91 R.R. spike in power pole, station 30+33/39' Lt., Elevation 662.19

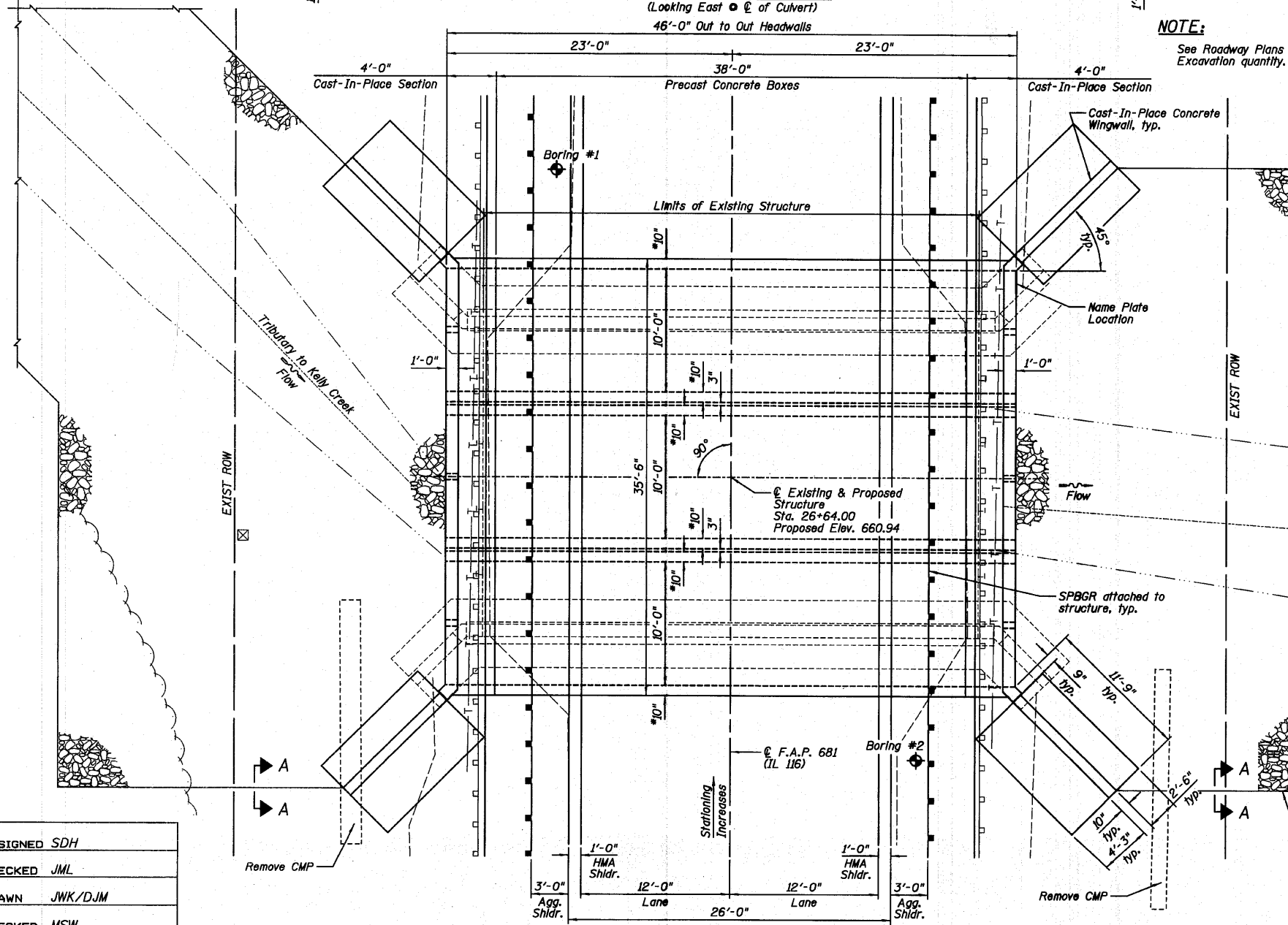
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

Existing Structure: Structure 027-0043 was originally constructed in 1929 as S.B.I. Route 116, Section 116 B-4 and was reconstructed in 1972 as Section 116 BR-4. The structure consists of a precast prestressed concrete deck beam superstructure with bituminous overlay, closed concrete abutments and vertical cantilever wingwalls supported by spread footings. The back to back of abutments dimension measures approximately 26'-0" while the out to out width measures approximately 40'-0". The structure is to be replaced during road closure.

No Salvage.



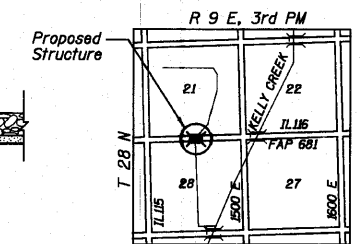
LONGITUDINAL SECTION
 (Looking East @ C of Culvert)



PLAN

STATION 26+64.00
 BUILT 20 BY
 STATE OF ILLINOIS
 F.A.P. 681 (IL116) SECTION 116-BR
 LOADING: HS20-44
 STR. NO. 027-2018

NAME PLATE
 See Standard 515001



LOCATION SKETCH

NOTE:
 See Roadway Plans for Channel Excavation quantity.

WATERWAY INFORMATION

Flood	Freq. Yr.	C.F.S.	Opening Sq. Ft.		Head - Ft.		Headwater EL.		
			Exist.	Prop.	Exist.	Prop.	Exist.	Prop.	
10	339	118	196	657.4	0.1	0.0	657.5	657.4	
Design	50	562	124	210	658.2	0.4	0.1	658.6	658.3
Base	100	663	124	210	658.4	0.6	0.2	659.0	658.6
Overtopping (exist.)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Overtopping (prop.)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Max. Calc.	500	913	124	210	659.0	1.0	0.4	660.0	659.4

10 Yr. Velocity = 1.7 ft/sec. (Proposed)
 10 Yr. Velocity = 2.9 ft/sec. (Existing)

TOTAL BILL OF MATERIAL - BOX CULVERT

ITEM	UNIT	TOTAL
Removal and Disposal of Unsuitable Material	Cu. Yd.	98
Stone Riprap, Class A4	Sq. Yd.	371
Filter Fabric	Sq. Yd.	371
Removal Of Existing Structures No. 2	Each	1
Reinforcement Bars	Pound	10,130
Reinforcement Bars, Epoxy Coated	Pound	510
Name Plates	Each	1
Concrete Box Culverts	Cu. Yd.	71.4
Precast Concrete Box Culvert 10'x7' (M273)	Foot	114
Rock Fill	Cu. Yd.	98

GENERAL NOTES

- 1.) Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60 (IL Modified). See Special Provisions.
- 2.) Reinforcement bars designated (E) shall be epoxy coated.
- 3.) Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.
- 4.) Cast-In-Place concrete exposed edges shall be beveled 3/4".
- 5.) It shall be the responsibility of the Contractor to divert the stream flow during construction in order to keep the construction area free of water. The method of water diversion shall be subject to the approval of the Engineer and the cost shall be included with the cost of "Concrete Box Culverts".
- 6.) Structural seal does not include design of precast elements.
- 7.) The precast concrete culvert sections shall be designed and manufactured in accordance with AASHTO M273 (ASTM C 850).
- 8.) For backfilling and embankment, see Standard Specifications.
- 9.) End of precast section shall not have a bell or spigot.
- 10.) Contractor to confirm all precast culvert dimensions with supplier before starting construction. All applicable cast-in-place concrete dimensions shall match precast culvert dimensions.
- 11.) See Sheet B8 for soil borings.
- 12.) The last section of precast culvert shall have an integral toe wall and reinforcing bars extending from the precast culvert as shown on Sheet B3.
- 13.) The pay item "Removal and Disposal of Unsuitable Material" shall include the excavation of unsuitable material for a depth of ±1'-6" below the structure for a width of 39'-6" within the limits of the toe walls as shown on the plans. The actual amount shall be determined in the field by the Engineer.
- 14.) The pay item "Rock Fill" shall include the placement of CA-7 and Gradation 1 below the structure for a width of 39'-6" within the limits of the toe walls as shown on the plans. The actual amount shall be determined in the field by the Engineer.
- 15.) The Contractor shall reshape the channel within the Right-Of-Way in order to facilitate drainage and the placement of riprap as directed by the Engineer. The cost of reshaping the channel shall be included in the cost of "Removal of Existing Structures".
- 16.) Alternate extended bars from precast section in slabs so top and bottom mats of reinforcement do not lap at the same location.

DESIGN SPECIFICATIONS

AASHTO 2002

DESIGN STRESSES

FIELD UNITS

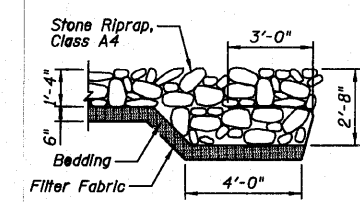
f'c = 3,500 psi (Cast-In-Place)
 fy = 60,000 psi (Reinforcement)

PRECAST UNITS

f'c = 5,000 psi (Precast)
 fy = 60,000 psi (Reinforcement)
 fy = 65,000 psi (Welded Wire Fabric)

LOADING HS20-44

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



SECTION A-A



Mark S. Wylie Date 8/14/10
 MARK S. WYLIE
 ILLINOIS STRUCTURAL ENGINEER
 NO. 081-005002
 Exp. Date 11/30/10

NOTES:

- 1.) Confirm slab and wall thickness with Precaster.
- 2.) P.G.L. denotes Profile Grade Line.

DESIGNED	SDH
CHECKED	JML
DRAWN	JWK/DJM
CHECKED	MSW
DATE	08/04/10

Farnsworth GROUP, INC.
 2709 McGraw Drive
 Bloomington, Illinois 61704
 309/663-8435, 309/663-1571 fax

SHEET NO. B1
 8 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
681	*	FORD/IROQUOIS	146	48
CONTRACT NO. 66880				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

GENERAL PLAN AND ELEVATION
 IL. ROUTE 116 OVER
 TRIBUTARY TO KELLY CREEK
 F.A.P. 681 - SECTION 116BR
 FORD COUNTY
 STATION 26+64.00
 STRUCTURE NO. 027-2018