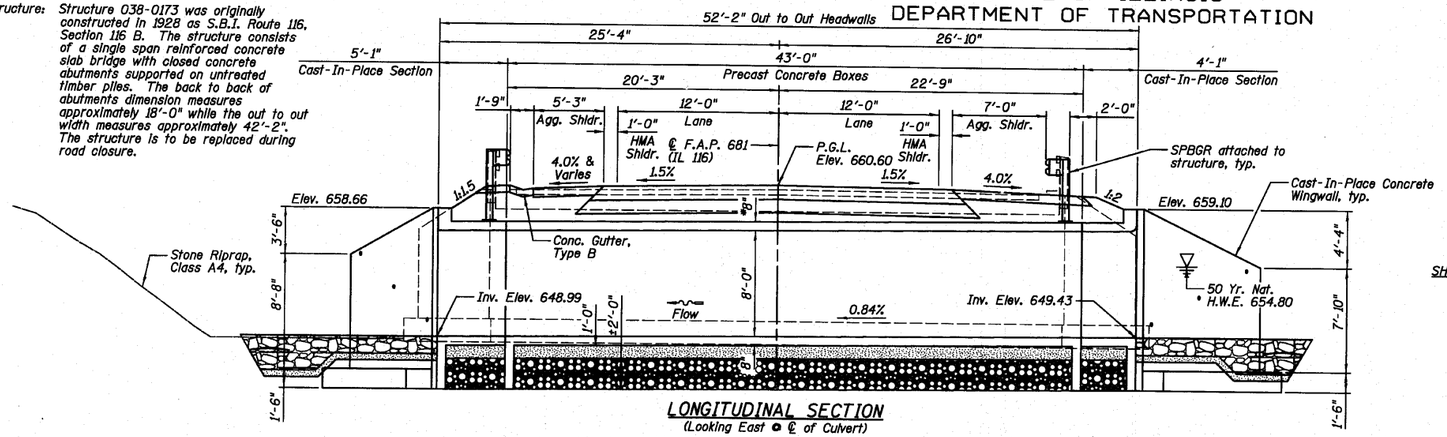
Benchmarks: 1.) BM#1 R.R. spike in power pole, Station 283+36/39' Rt., Elevation 659.15
2.) BM#2 Chiseled "□" on southwest wingwall Station 283+91/22' Rt., Elevation 660.04

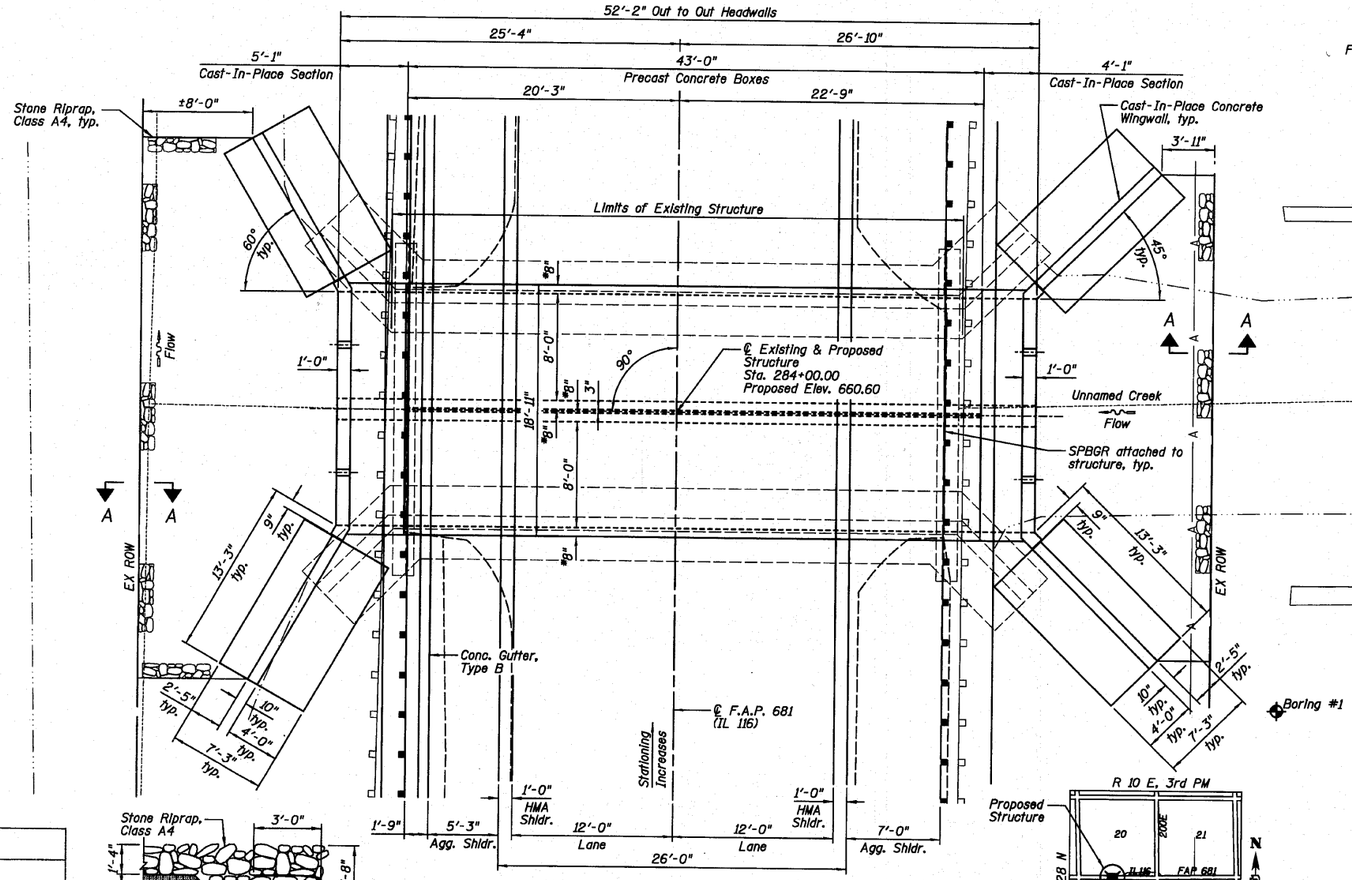
Existing Structure: Structure 038-0173 was originally constructed in 1928 as S.B.I. Route 116, Section 116 B. The structure consists of a single span reinforced concrete slab bridge with closed concrete abutments supported on untreated timber piles. The back to back of abutments dimension measures approximately 18'-0" while the out to out width measures approximately 42'-2". The structure is to be replaced during road closure.

No Salvage.

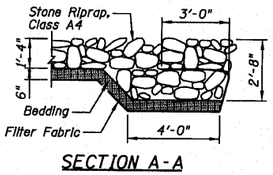
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



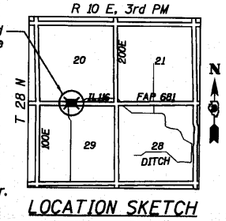
LONGITUDINAL SECTION
(Looking East ℄ of Culvert)



PLAN



SECTION A-A



LOCATION SKETCH

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

WATERWAY INFORMATION

Drainage Area = 1.81 Sq. Mi.
Existing Low Grade Elev. 660.28 ℄ Sta. 285+20
Proposed Low Grade Elev. 660.28 ℄ Sta. 285+20

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	128	53	68	653.7	0.1	0.0	653.8	653.7
Design	50	194	70	86	654.8	0.1	0.0	654.9	654.8
Base	100	223	77	92	655.2	0.1	0.0	655.3	655.2
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	289	91	107	656.1	0.1	0.0	656.2	656.1

10 Yr. Velocity = 1.7 fps (Proposed)
10 Yr. Velocity = 1.8 fps (Existing)

INDEX OF SHEETS

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.

TOTAL BILL OF MATERIAL - BOX CULVERT

ITEM	UNIT	TOTAL
Removal and Disposal of Unsuitable Material	Cu. Yd.	144
Stone Riprap, Class A4	Sq. Yd.	102
Filter Fabric	Sq. Yd.	102
Removal Of Existing Structures No. 7	Each	1
Reinforcement Bars	Pound	6,840
Reinforcement Bars, Epoxy Coated	Pound	690
Concrete Box Culverts	Cu. Yd.	59.0
Precast Concrete Box Culvert 8'x8' (M273)	Foot	86
Rock Fill	Cu. Yd.	144

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 ¾".
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 Sheets F9 and F10 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 F2.
13.) The pay item "Removal and Disposal of Unsuitable Material" shall include the excavation of unsuitable material for a depth of ±3'-4" below the structure for a width of 22'-11" 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 CA-7 and Gradation 1 below the structure for a width of 22'-11" 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.

MARK S. WYLIE 081-005002 LICENSED STRUCTURAL ENGINEER OF ILLINOIS

Mark S Wylie Date 8/4/10
MARK S. WYLIE
ILLINOIS STRUCTURAL ENGINEER
NO. 081-005002
Exp. Date 11/30/10

GENERAL PLAN AND ELEVATION
IL. ROUTE 116 OVER
UNNAMED DRAINAGE DITCH
F.A.P. 681 - SEC. 116 BR
IROQUOIS COUNTY
STATION 284+00.00
STRUCTURE NO. 038-2549

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. F1
10 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
681	*	FORD/IROQUOIS	146	104
		CONTRACT NO. 66880		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

* 116 BR/[116 BR, (BR-2)BR, I & BR-3]

24-8271