

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

INDEX OF SHEETS

WATERWAY INFORMATION

Benchmarks: BM #30 Chiseled "□" on northwest wingwall, Station 106+73/29' Lt., Elevation 658.32.
BM #31 R.R. spike in power pole, Station 106+05/40' Rt., Elevation 657.03.

Existing Structure: Structure 027-2528 was originally constructed in 1929 as S.B.I. Route 116, Section 116 and was extended north in 1986 as Section (115,116) RS. The structure is a 10'x5' concrete box culvert with parallel wingwalls. The structure includes a 3'x3' concrete box culvert opening which crosses TR 1600E. The length of the culvert measures approximately 47'-0" out to out and varies. The structure is to be replaced during road closure.

No Salvage.

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.

SHEET NO. TITLE

- C1 GENERAL PLAN AND ELEVATION
- C2 STONE RIPRAP LAYOUT PLAN
- C3 LONGITUDINAL SECTION, PRECAST CONCRETE SECTION AND ELEVATION
- C4 NORTH AND SOUTH END WALL CONCRETE SECTION AND ELEVATION
- C5 CAST-IN-PLACE CONCRETE CULVERT SECTION, DETAILS AND BILL OF MATERIAL
- C6 NORTH END CAST-IN-PLACE TOP SLAB PLANS, SECTION AND DETAILS
- C7 NORTH END CAST-IN-PLACE BOTTOM SLAB PLANS, SECTION AND DETAILS
- C8 SOUTH END CAST-IN-PLACE TOP SLAB PLANS, SECTION AND DETAILS
- C9 SOUTH END CAST-IN-PLACE BOTTOM SLAB PLANS, SECTION AND DETAILS
- C10-C11 WINGWALLS
- C12 SOIL BORING LOGS

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.		*Head - Ft.		Headwater El.	
			Exist.	Prop.	Exist.	Prop.	Exist.	Prop.	Exist.	Prop.
Design	10	144	41	49	655.9	0.3	0.2	656.2	656.1	656.9
Base	50	234	49	58	656.6	0.4	0.3	657.0	656.9	
Overlapping (exist.)	100	275	50	60	656.8	0.6	0.3	657.4	657.1	
Max. Calc.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	500	372	50	60	656.9	1.4	1.3	658.3	658.2	

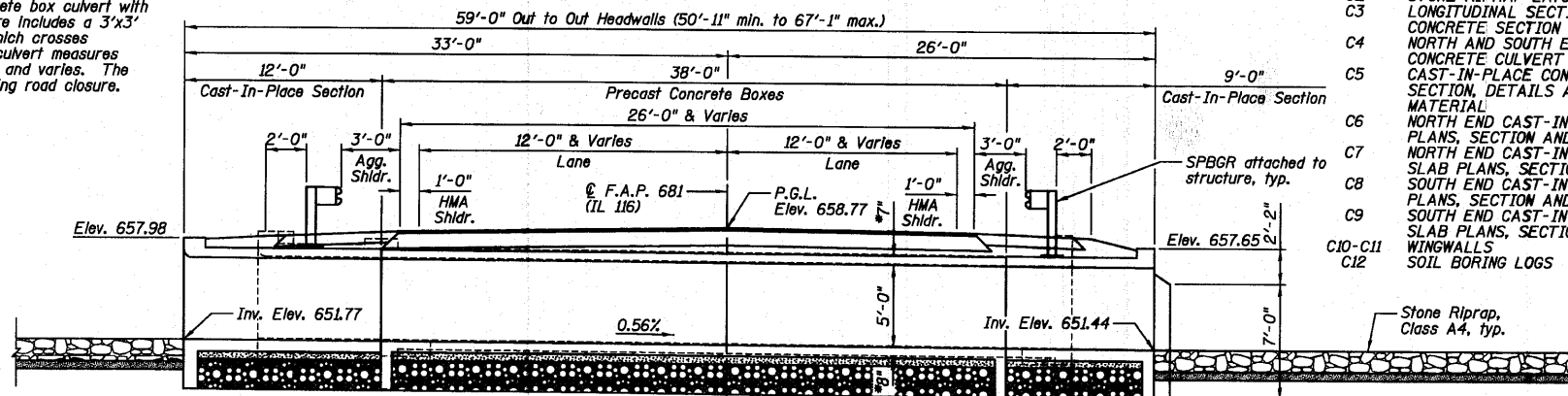
10 Yr. Velocity = 2.7 ft/sec. (Proposed)
10 Yr. Velocity = 3.2 ft/sec. (Existing)

TOTAL BILL OF MATERIAL-BOX CULVERT

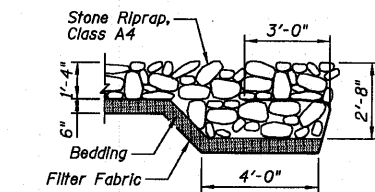
ITEM	UNIT	TOTAL
Removal and Disposal of Unsuitable Material	Cu. Yd.	96
Stone Riprap, Class A4	Sq. Yd.	415
Filter Fabric	Sq. Yd.	415
Removal Of Existing Structures No. 3	Each	1
Removal Of Existing Structures No. 4	Each	1
Reinforcement Bars	Pound	8,090
Concrete Box Culverts	Cu. Yd.	47.7
Precast Concrete Box Culvert 6'x5' (M273)	Foot	76
Rock Fill	Cu. Yd.	94

GENERAL NOTES

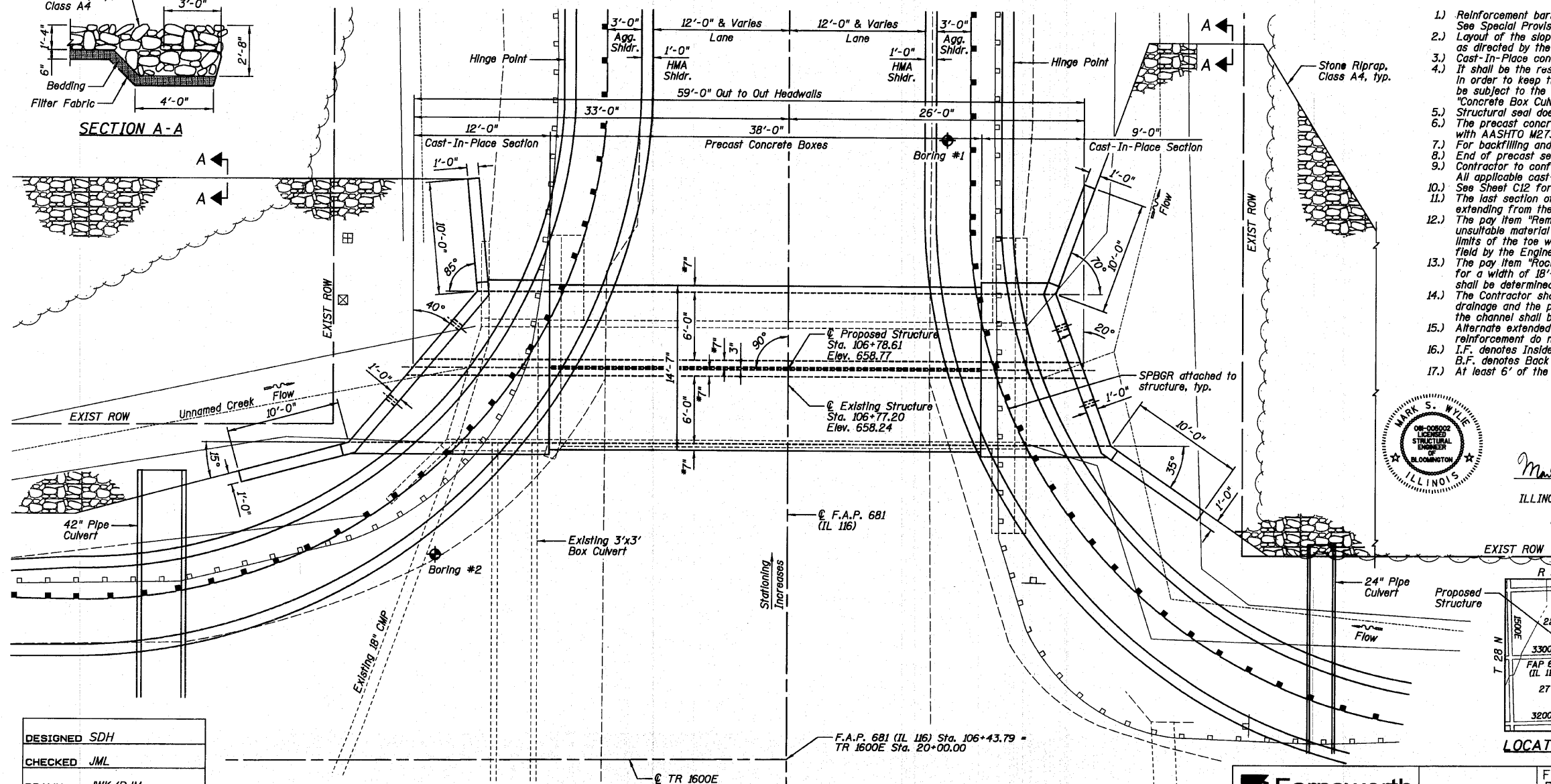
- 1.) Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60 (IL Modified). See Special Provisions.
- 2.) Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.
- 3.) Cast-in-place concrete exposed edges shall be beveled 3/4".
- 4.) 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".
- 5.) Structural seal does not include design of precast elements.
- 6.) The precast concrete culvert sections shall be designed and manufactured in accordance with AASHTO M273 (ASTM C 850).
- 7.) For backfilling and embankment, see Standard Specifications.
- 8.) End of precast section shall not have a bell or spigot.
- 9.) Contractor to confirm all precast culvert dimensions with supplier before starting construction. All applicable cast-in-place concrete dimensions shall match precast culvert dimensions.
- 10.) See Sheet C12 for soil borings.
- 11.) The last section of precast culvert shall have an integral toe wall and reinforcing bars extending from the precast culvert as shown on Sheet C2.
- 12.) The pay item "Removal and Disposal of Unsuitable Material" shall include the excavation of unsuitable material for a depth of ±2'-4" below the structure for a width of 18'-7" within the limits of the toe walls as shown on the plans. The actual amount shall be determined in the field by the Engineer.
- 13.) The pay item "Rock Fill" shall include the placement of Gradation 1 and CA-7 below the structure for a width of 18'-7" within the limits of the toe walls as shown on the plans. The actual amount shall be determined in the field by the Engineer. See Special Provision.
- 14.) 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 No. 4".
- 15.) Alternate extended bars from precast section in slabs so top and bottom mats of reinforcement do not lap at the same location.
- 16.) I.F. denotes Inside Face, O.F. denotes Outside Face, E.F. denotes Each Face, B.F. denotes Back Face, and F.F. denotes Front Face.
- 17.) At least 6' of the culvert walls shall be poured with the wingwalls.



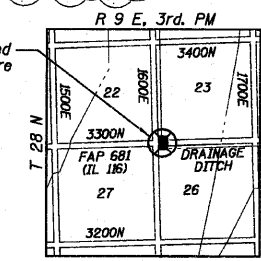
LONGITUDINAL SECTION
(Looking East @ C of Culvert)



SECTION A-A



Mark S. Wylie Date 8/17/10
MARK S. WYLIE
ILLINOIS STRUCTURAL ENGINEER
NO. 081-005002
Exp. Date 11/30/10



LOCATION SKETCH

GENERAL PLAN AND ELEVATION
IL. ROUTE 116 OVER
UNNAMED CREEK
F.A.P. 681 - SECTION (116)
FORD COUNTY
STATION 106+78.61
STRUCTURE NO. 027-2553

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

NOTES:

- 1.) *Confirm slab and wall thickness with Precaster.
- 2.) P.G.L. Denotes Profile Grade Line.
- 3.) See Roadway plans for ROW location.

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

SHEET NO. C1	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12 SHEETS	*	FORD/IROQUOIS	146	56

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
681	*	FORD/IROQUOIS	146	56
CONTRACT NO. 66880				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				