

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	**	IROQUOIS	190	46
FED. ROAD DIST. NO.	ILLINOIS	CONTRACT NO. 66757		
** (38-3.4)RS-2, (38-4)BR		Sheet 1 of 11		

Bench Mark:
Chisel "□" on top of northwest wingwall of southbound I-57 bridge, Structure Number 038-0012. Elevation 660.17

Existing Structures:
SN 038-0011, Northbound I-57 Bridge
SN 038-0012, Southbound I-57 Bridge

The structures were built in 1967 as single span Reinforced Concrete Slab Bridges supported by Closed Concrete Abutments. Vertical cantilever retaining walls with spread footings connect the two structures on either side of the channel in the median area of the highway. The superstructures were resurfaced in 2000 with a microsilica concrete overlay. The bridges measure 23'-4" back to back of abutments and 42'-4" out to out of deck. The Structures are to be replaced with a Double Box Culvert.

Salvage:
No Salvage
Staging:
One lane of traffic shall be maintained in each direction utilizing stage construction.

GENERAL NOTES

Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60.
Reinforcement bars designated (E) shall be epoxy coated.
Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

Layout of slope protection system may be varied in the field to suit ground conditions as directed by the Engineer.
Excavation behind existing abutment walls shall be performed to balance front and back soil pressure before removing the existing superstructure. The Contractor shall sawcut the upper portion of the existing abutment at the stage removal line before Stage I removal to ensure the remaining portion will not be prematurely damaged.

A cantilevered sheet piling design does not appear feasible and additional members or other retention systems may be necessary. The Contractor shall submit a temporary soil retention system design including plan details and calculations for review and acceptance by the Engineer.

Removal of the existing reinforced concrete slabs creates an unstable condition for the abutment walls directly supporting the superstructures. Bracing of the abutment walls or excavation behind the abutments may be required to ensure the stability of the abutment walls during structure removal and construction activities.

A precast concrete culvert alternate will not be allowed.

HORIZONTAL CURVE DATA

P.I. Sta 339+47.29
Δ = 35°-50'-48.23"
D = 01°-30'-00"
T = 1,235.46
L = 2,389.78'
R = 3,819.72
E = 194.83
P.C. Sta. 327+11.84
P.T. Sta. 351+01.62
S.E. = 4.58%

APPROVED
For Structural Adequacy

Carl Ramsey
Engineer of Bridges & Structures

TOTAL BILL OF MATERIAL

Stone Riprap, Class A4	Sq. Yd.	124
Filter Fabric	Sq. Yd.	124
*** Removal of Existing Structures No. 1	Each	1
Furnishing and Erecting Structural Steel	Pound	4,600
Reinforcement Bars	Pound	82,270
Reinforcement Bars, Epoxy Coated	Pound	700
Bar Splicers	Each	230
Name Plates	Each	1
Concrete Box Culverts	Cu. Yd.	462.3
*** Temporary Soil Retention System	Sq. Ft.	4,029

***See Special Provisions

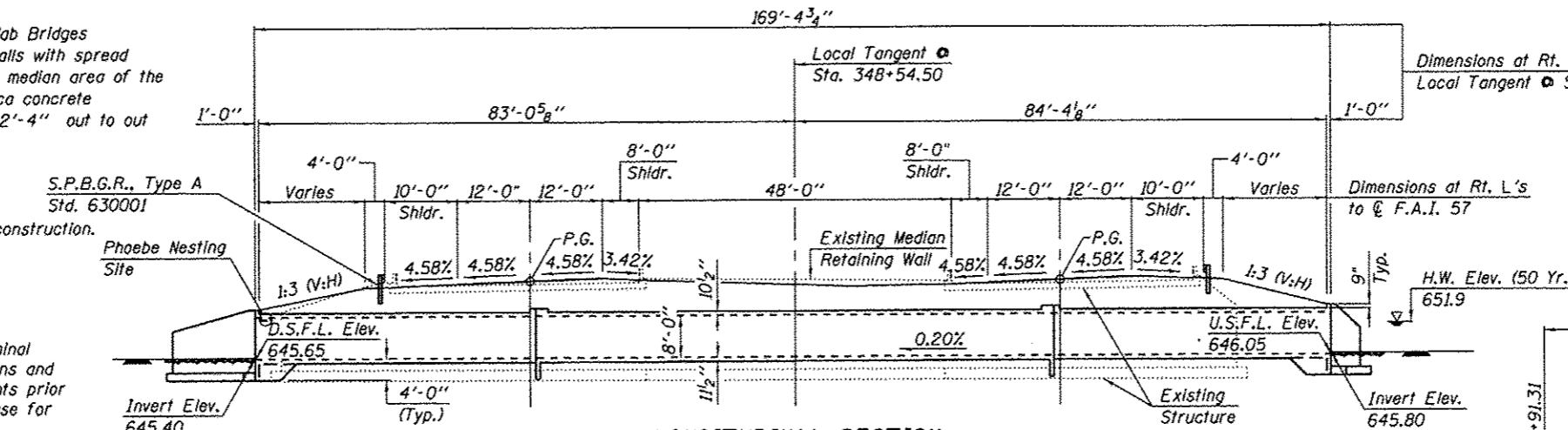
WATERWAY INFORMATION

Drainage Area = 0.59 Sq. Mi. Exist. Low Grade Elev. 659.30 @ Sta. 346+50
Prop. Low Grade Elev. 659.85 @ Sta. 346+50

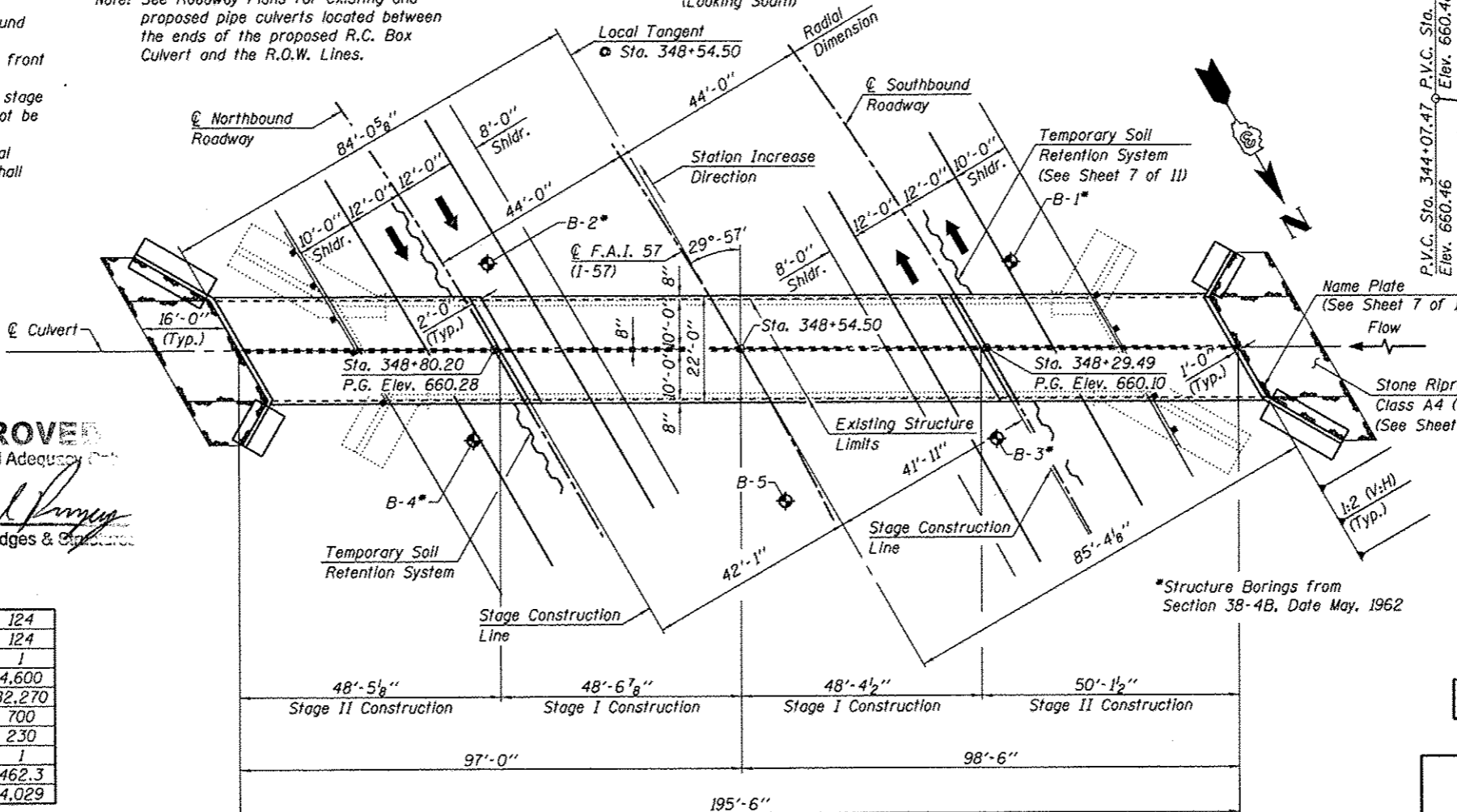
Flood	Freq. (Yr.)	Q (c.f.s.)	Opening (Sq.Ft.)	Natural Head (Ft.)	Exist. H.W.E.	Prop. H.W.E.	Exist. Prop. Headwater El.	Exist. Prop. Headwater El.
Design	10	93	84	108	651.2	0.1	0.0	651.3
Base	50	136	97	122	651.9	0.2	0.0	652.1
Overtopping	100	153	102	126	652.1	0.2	0.0	652.3
Max. Calc.	500	193	111	136	652.6	0.2	0.0	652.8

10-Year Velocity through Exist. Structure = 1.1 f.p.s.
10-Year Velocity through Prop. Structure = 0.9 f.p.s.

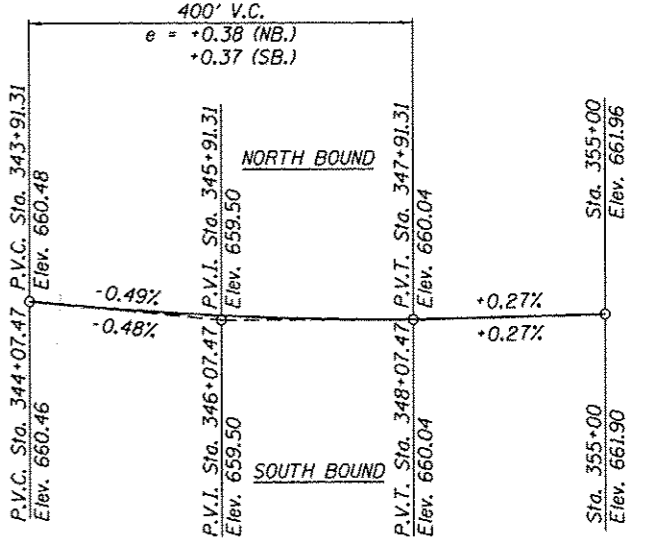
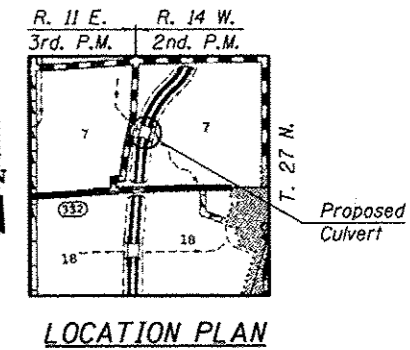
DESIGNED	S.F.M.
CHECKED	J.A.M.
DRAWN	S.A.P.
CHECKED	S.F.M. & J.A.M.



Note: See Roadway Plans for existing and proposed pipe culverts located between the ends of the proposed R.C. Box Culvert and the R.O.W. Lines.



*Structure Borings from Section 38-4B, Date May, 1962



INDEX OF SHEETS

1. General Plan and Elevation
2. Stage Construction Details
3. Edge Beam Details
4. Stage I Culvert Construction
5. Stage II Culvert Construction - Southbound Lanes
6. Stage II Culvert Construction - Northbound Lanes
7. Culvert Details
8. Bar Splicer Assembly Details
9. Temporary Concrete Barrier
- 10.-11. Soil Boring Logs

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	Upstream	Downstream
	641.80	641.40

DESIGN STRESSES PLAN

FIELD UNITS
f'c = 3,500 psi
fy = 60,000 psi
Allowable Bearing Pressure under footings = 6,840 lbs./Sq. Ft.

LOADING HS 20-44 & ALTERNATE

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

DESIGN SPECIFICATIONS

2002 AASHTO Specifications



John A. Morris 12-14-12
ILLINOIS STRUCTURAL NO. 4277 (Expires 11/30/14)

GENERAL PLAN & ELEVATION
I-57 OVER
DANFORTH TOWNSHIP DRAINAGE DITCH
F.A.I. ROUTE 57
SECTION (38-3.4)RS-2, (38-4)BR
IROQUOIS COUNTY
STATION 348+54.50
S.N. 038-2021

4440 ASH GROVE
SPRINGFIELD, IL 62711
(217) 793-8800
www.fehr-graham.com

FEHR-GRAHAM & ASSOCIATES, LLC
ENGINEERING AND SCIENCE CONSULTANTS

JOB NO.: 468101
FILE: 468101_GPE.DGN
DATE: 11/1/08