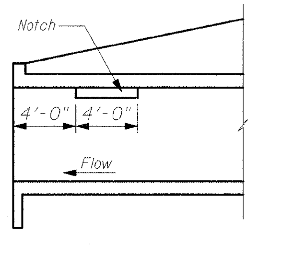
Bench mark - Square cut on northwest wingwall of existing Structure No. 039-0018. 31' Lt. of Sta. 86+32.3 - Elev. 390.37

Existing Structure: S.N 039-0018 (Westbound Illinois Route 13) built in 1947 as a single span pile supported closed abutment structure, 44'-3" back-to-back abutments. Superstructure is a T-beam girder slab 58'-4" out-to-out on a 28° ahead left skew.

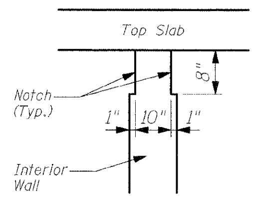
Traffic to be maintained utilizing stage construction.

No Salvage.

The vertical reinforcement in the existing abutment walls is located near face of the concrete closest to the stream. Therefore, due caution must be exercised by the Contractor when removing the top slab of the bridge. Bracing of the abutment walls or excavation behind the walls may be necessary to prevent sudden collapse.




LONGITUDINAL SECTION




PHOEBE NESTING SITE NOTCH DETAIL

(Downstream end only of Interior Walls)

# STATE OF ILLINOIS
# DEPARTMENT OF TRANSPORTATION

| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| FAP 331 | 5B-3 | JACKSON | 25 | 15 |
| FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT- | | |

SHEET NO. 1

11 SHEETS

CONTRACT NO. 98566

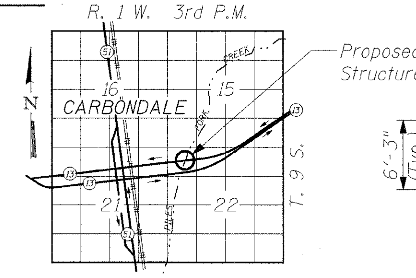
## WATERWAY INFORMATION

| Drainage Area = 6.81 Sq. Mi. | Low Grade Elev. 389.90 @ Sta. 81+50.00 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 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. | |
| Design | 50 | 2435 | 319.21 | 402.50 | 386.38 | 1.26 | 0.35 | 387.64 | 386.73 | |
| Base | 100 | 2772 | 319.21 | 415.10 | 386.73 | 1.27 | 0.67 | 388.00 | 387.40 | |
| Overtopping | | | | | | | | | | |
| Max. Calc. | 500 | 3565 | 319.21 | 432.00 | 388.04 | 1.77 | 0.99 | 389.81 | 389.03 | |

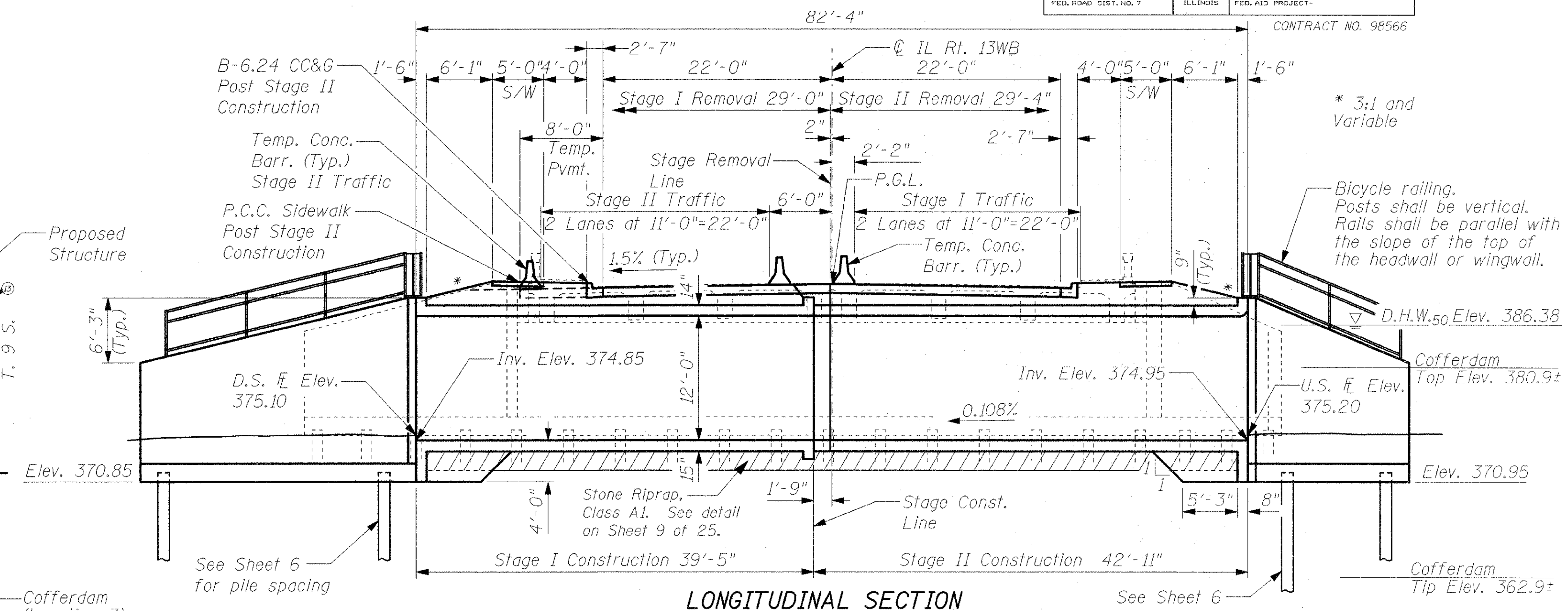
STA. 86+40.00
BUILT 200_ BY
STATE OF ILLINOIS
F.A.P. 331 – SECTION 5B–3
LOADING HS20
STR. NO. 039–2026

NAME PLATE

(See State Standard 515001 for details)

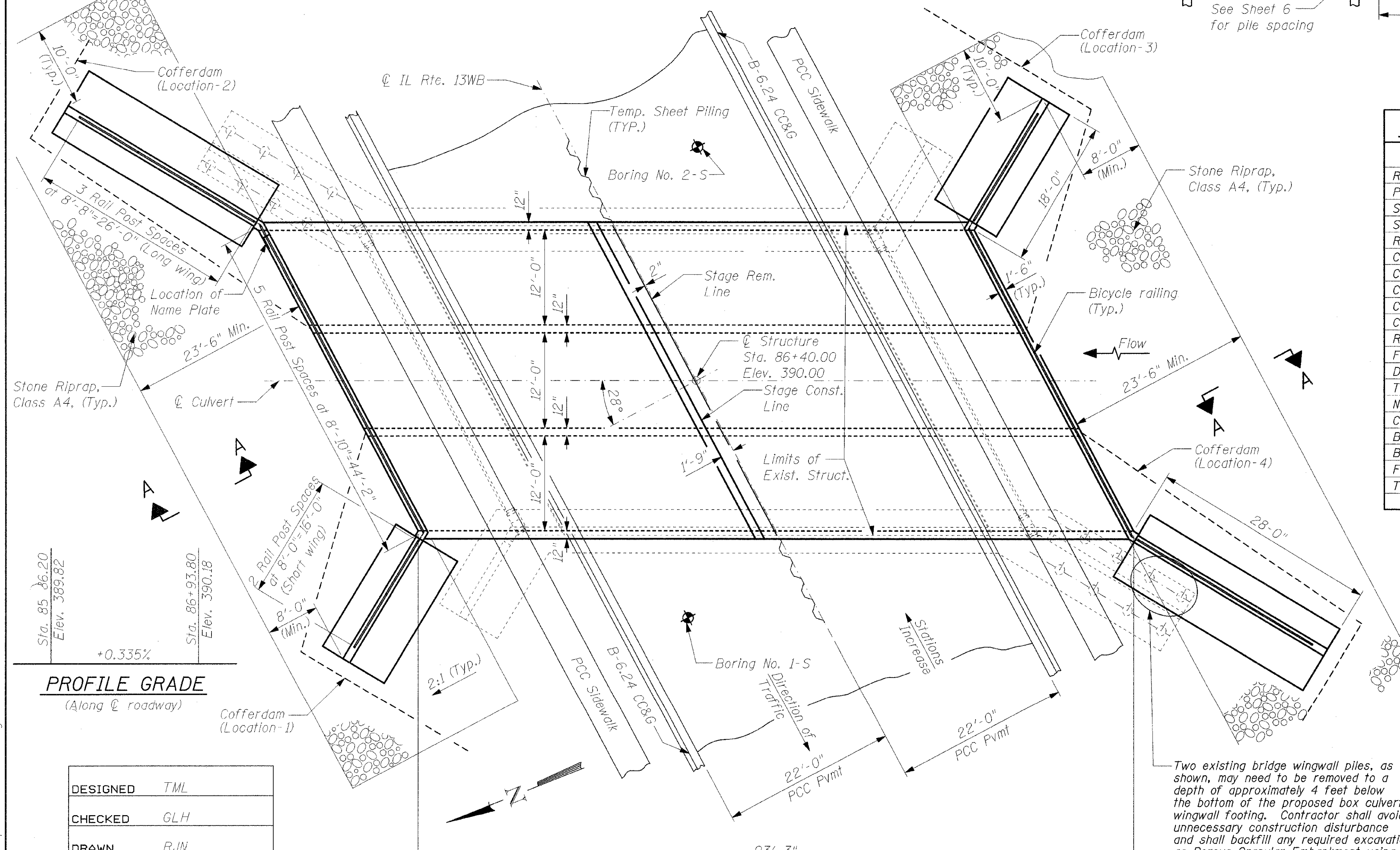



LOCATION SKETCH




LONGITUDINAL SECTION

Looking East
Dimensions are at right angles to ℄ Roadway




PLAN

Two existing bridge wingwall piles, as shown, may need to be removed to a depth of approximately 4 feet below the bottom of the proposed box culvert wingwall footing. Contractor shall avoid unnecessary construction disturbance and shall backfill any required excavation as Porous Granular Embankment using CA7 or CA11. This condition is typical at each of the 2 long wingwalls.

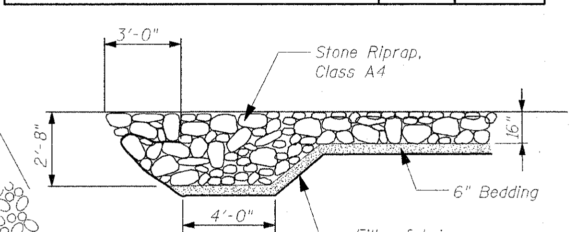
Sta. 85+36.20 Elev. 389.82
Sta. 86+93.80 Elev. 390.18
+0.335%

PROFILE GRADE

(Along ℄ roadway)

## BILL OF MATERIALS (CULVERT ONLY)

| ITEM | UNIT | TOTAL |
|---|---|---|
| Removal and Disposal of Unsuitable Material | Cu Yd | 300 |
| Porous Granular Embankment | Cu Yd | 700 |
| Stone Riprap, Class A1 | Sq Yd | 450 |
| Stone Riprap, Class A4 | Sq Yd | 575 |
| Removal of Existing Structures | Each | 1 |
| Cofferdam Excavation | Cu Yd | 480 |
| Cofferdam (Location - 1) | Each | 1 |
| Cofferdam (Location - 2) | Each | 1 |
| Cofferdam (Location - 3) | Each | 1 |
| Cofferdam (Location - 4) | Each | 1 |
| Reinforcement Bars, Epoxy Coated | Pound | 92530 |
| Furnishing Metal Shell Piles 12" X 0.179" | Foot | 2310 |
| Driving Piles | Foot | 2310 |
| Test Pile Metal Shells | Each | 1 |
| Name Plates | Each | 1 |
| Concrete Box Culverts | Cu Yd | 626.6 |
| Bar Splicers | Each | 279 |
| Bicycle Railing | Foot | 173 |
| Filter Fabric | Sq Yd | 575 |
| Temporary Sheet Piling | Sq Ft | 830 |




SECTION A-A

## GENERAL NOTES

A precast concrete box culvert alternate will not be allowed at this site.

See Note 3 on Sheet 2 of 25 for cautions to the Contractor to restrict or minimize the creation of channel obstructions during construction operations.

Remove unsuitable soil below bottom of Culvert to a minimum depth of 2'-0" and 2'-0" outside of the exterior walls of the box Culvert. Cost shall be paid for as "REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL". Replace with "STONE RIPRAP, CLASS A1". See detail on Sheet 9 of 25.

Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60 (IL Modified). See Special Provisions.

The Stage Removal Line is coincident with a construction joint in the existing structure beneath the wearing surface.

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.

Layout of of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.

All construction joints shall be bonded.

Exposed edges shall be beveled $^3/_4$" unless otherwise noted.

The back face of the culvert and wingwalls shall be waterproofed according to Article 503.18 of the Standard Specifications.

The spread footings and walls of the existing abutments shall be removed according to Section 501 of the Standard Specifications in the area within 12 inches of the proposed box culvert to a depth of 24 inches minimum below bottom of the proposed box culvert, except as noted. Backfill with Porous Granular Embankment.

Cost of any excavation, except unsuitable material below bottom slab and Cofferdam Excavation, included with Removal of Existing Structures.

The Contractor shall drive test piles tp 110% of the nominal required bearing specified in production locations at substructures specified or approved by the Engineer before ordering the remainder of piles.

## DESIGN SPECIFICATIONS

A.A.S.H.T.O. 2002 17th Edition

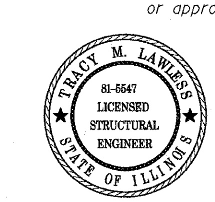
## DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi
fy = 60,000 psi (reinf.)

## LOADING HS20-44

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




Tracy M. Lawless 8-15-06

Tracy M. Lawless
Freeburg, Illinois
Illinois Licensed Structural Engineer No. 81-5547
Expires Nov. 30, 2006

**APPROVED**
FOR STRUCTURAL ADEQUACY ONLY

Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES

| | |
|---|---|
| DESIGNED | TML |
| CHECKED | GLH |
| DRAWN | RJN |
| CHECKED | GLH |

RHUTASEL and ASSOCIATES, INC.
CONSULTING ENGINEERS • LAND SURVEYORS
CENTRALIA, ILLINOIS FREEBURG, ILLINOIS
IL. DESIGN FIRM LICENSE NO. 184-000287

GENERAL PLAN
ILLINOIS ROUTE 13WB OVER
PILES FORK CREEK
FAP ROUTE 331 - SEC. 5B-3
JACKSON COUNTY
STATION 86+40.00
STRUCTURE NO. 039-2026

98566/15generalplan039-2026.dgn