BM: Top of Stem Existing Fire Hydrant Sta. - 44+35.96, Elev. 750.51.

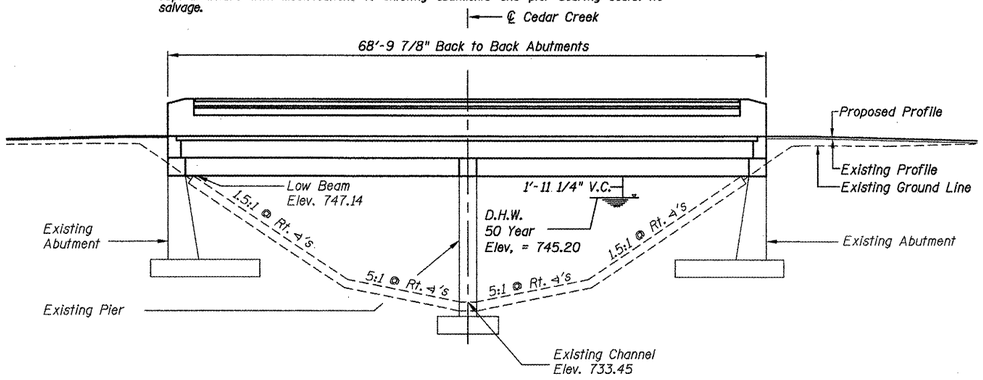
Existing Structure: S.N. 048-0024, Two span reinforced concrete tee beam and 17" precast, prestressed deck beams on reinforced concrete closed abutments on spread footings. 68'-0" back to back of abutments, 67'-0" out to out of deck. Remove and replace existing superstructure with modifications to existing abutments and pier bearing seats. No salvage.

STATE OF ILLINOIS
# DEPARTMENT OF TRANSPORTATION

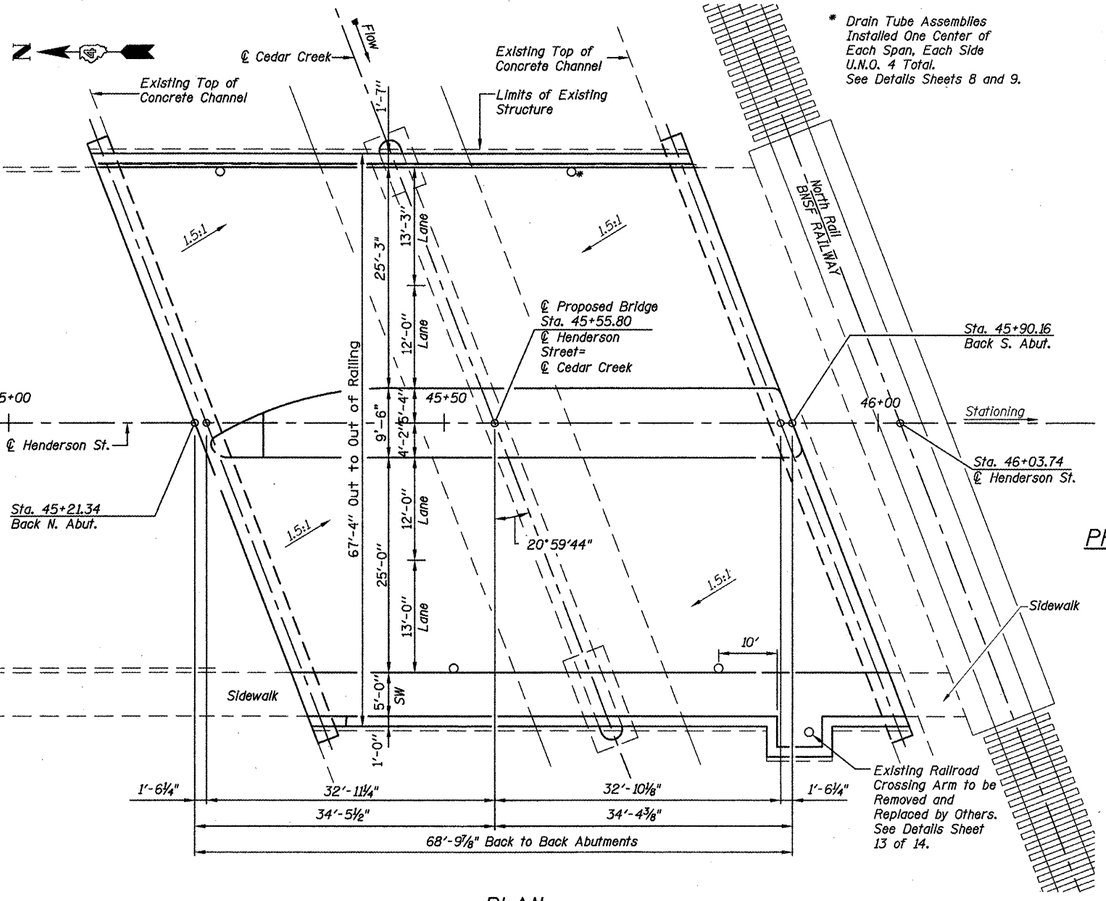
| F.A.U. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 6791 | 07-00401-25-BR | KNOX | 18 | 5 |
| STA. 44+90.00 | | TO STA. 47+77.20 | | |
| FED. ROAD DIST. NO. _ | | ILLINOIS | FED. AID PROJECT | |

Bridge Sheet 1 of 14 Sheets

BRM-5025(045)
CONTRACT NO. 89557

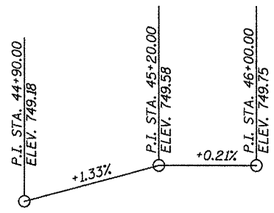



## ELEVATION




## PLAN

* Drain Tube Assemblies Installed One Center of Each Span, Each Side U.N.O. 4 Total. See Details Sheets 8 and 9.




## PROFILE GRADE HENDERSON STREET

HENDERSON STREET OVER CEDAR CREEK
BUILT 20__
KNOX COUNTY
SEC. 07-00401-25-BR
STA. 45+55.80
S.N. 048-0024
LOADING HL-93

## NAME PLATE
See Std. 515001

## HIGHWAY CLASSIFICATION
ADT: 6400 (2006) 13740 (2021)
Functional Class: MINOR ARTERIAL (Urban)
Design Speed: 35 mph

## DESIGN SPECIFICATIONS
2007 AASHTO LRFD Bridge Design Specifications, 4th edition w/2008 Interim

## LOADING HL-93
Allow 50#/sq. ft. for future wearing surface.

## DESIGN STRESSES
## FIELD UNITS
f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)

## PRECAST PRESTRESSED UNITS
f'c = 6,000 psi
f'ci = 5,000 psi
fpu = 270,000 psi ( 1/2" ϕ strands)

## GENERAL NOTES
1. Reinforcement bars shall conform to the requirements of ASTM A706, Grade 60.
2. Backfill shall be placed behind abutments after the superstructure has been erected and the dowel bars grouted. See Article 502.10 of the Standard Specifications.

## TOTAL BILL OF MATERIAL

| ITEM | UNIT | SUPER | SUB | TOTAL |
|---|---|---|---|---|
| Removal of Existing Superstructure | EACH | 1 | – | 1 |
| Structure Excavation | CU YD | – | 35.3 | 35.3 |
| Concrete Structures | CU YD | – | 31.9 | 31.9 |
| Concrete Superstructure | CU YD | 24.6 | – | 24.6 |
| Protective Coat | SQ YD | 169 | – | 169 |
| Precast Prestressed Concrete Deck Beams (17" Depth) | SQ FT | 4,486 | – | 4,486 |
| Reinforcement Bars, Epoxy Coated | POUND | 3,890 | 6100 | 9,990 |
| Name Plates | EACH | 1 | – | 1 |
| Expansion Bolts 3/4 Inch | EACH | – | 448 | 448 |
| Structural Repair of Concrete (Depth Equal to or Less than 5") | SQ FT | – | 30 | 30 |
| Aluminum Railing, Type L | FOOT | 123 | – | 123 |
| HMA Surface Course, 2" | SQ YD | 59.2 | – | 59.2 |

## WATERWAY INFORMATION

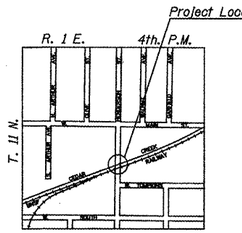
| Drainage Area = 8.20 Sq. Mi. | | | Low Grade Elev. 747.14 @ Sta. 45+21.34 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Flood | Freq. Yr. | Q C.F.S. | Opening Sq. Ft. Exist. | Opening Sq. Ft. Prop. | Nat. H.W.E. | Head – Ft. Exist. | Head – Ft. Prop. | Headwater El. Exist. | Headwater El. Prop. |
| Design | 50 | 2350 | 304 | 310 | 746.00 | 0.00 | 0.00 | 746.0 | 746.0 |
| Base | | | | | | | | | |
| Overtopping | | | | | | | | | |
| Max. Calc. | | | | | | | | | |

* Data taken from Flood Insurance Study, dated December 19, 1984 by FEMA. Community Number 170349.

GREGORY C. PETERSON
081-005717
LICENSED STRUCTURAL ENGINEER OF GALESBURG
ILLINOIS

I certify that to the best of my knowledge, information and belief, this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the current A.A.S.H.T.O. LRFD Specifications.

Gregory C. Peterson — 5/6/2010
GREGORY C. PETERSON — Dated
Licensed Structural Engineer
State of Illinois 81-5717
Expires 11/30/2010




## LOCATION SKETCH

ILLINOIS DEPARTMENT OF TRANSPORTATION

## GENERAL PLAN AND ELEVATION

S. HENDERSON STREET OVER CEDAR CREEK
SECTION 07-00401-25-BR
CITY OF GALESBURG, KNOX COUNTY
STA. 45+55.80 S.N. 048-0024

SCALE: VERT. NONE. HORIZ. NONE.
DRAWN BY: RRR
DESIGNED BY: PETERSON
CHECKED BY: PETERSON
DATE: 08/28/2009

| REVISIONS | |
|---|---|
| NAME | DATE |
| | |
| | |
| | |
| | |
| | |
| | |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