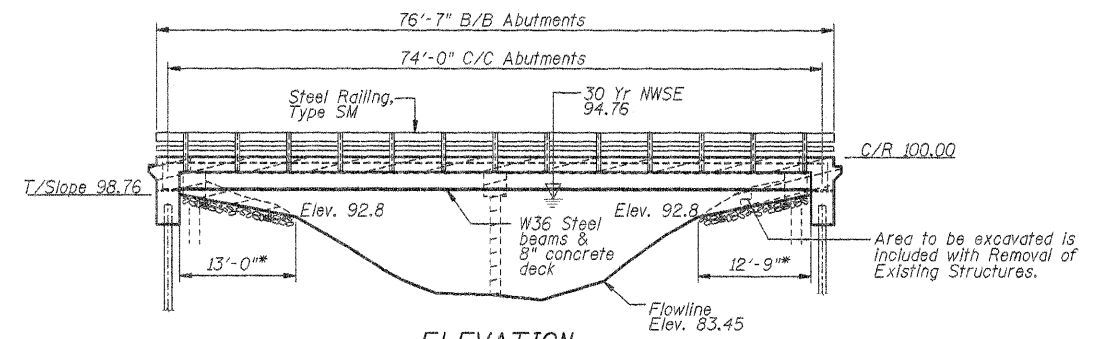


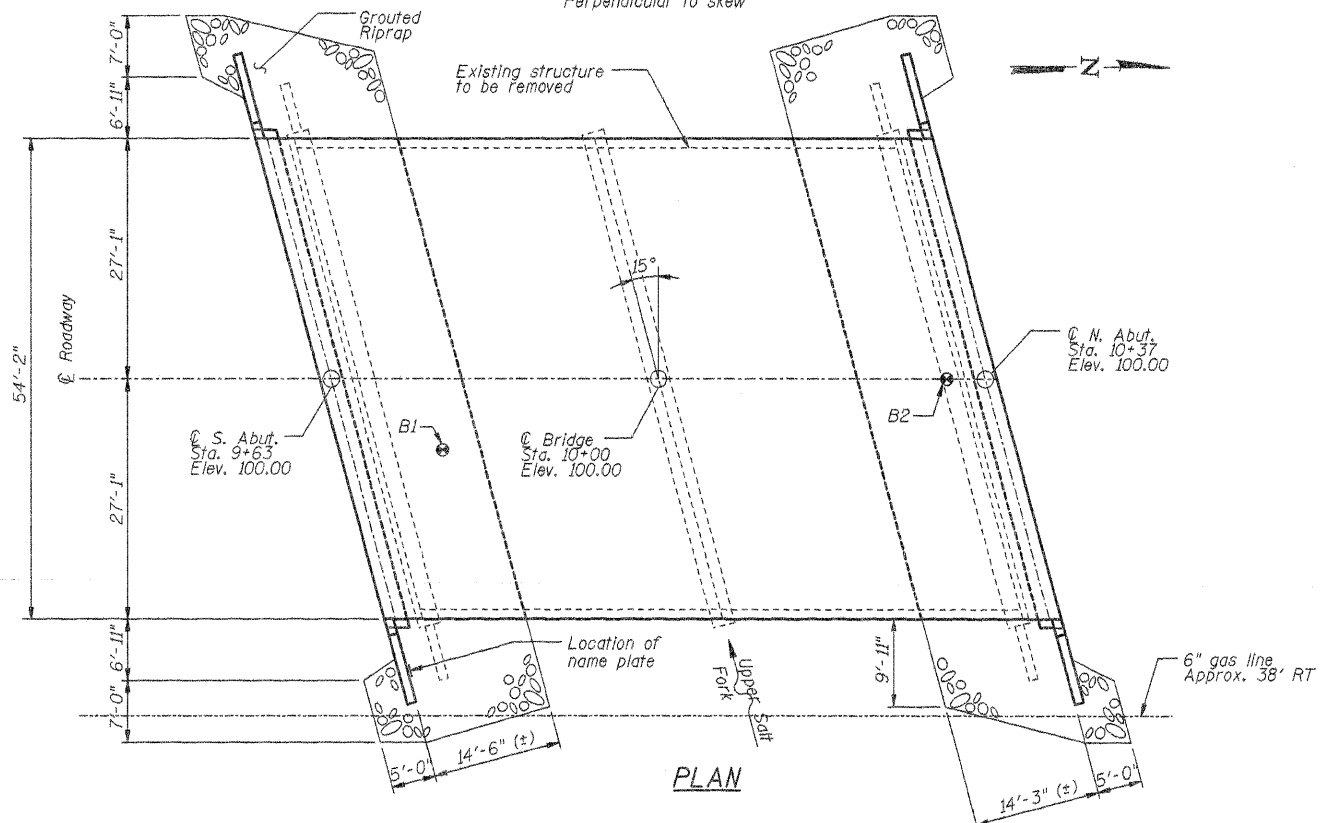
| ROUTE NO. | SECTION | COUNTY | SHEET NO. | TOTAL SHEETS |
|-----------------------|---------|-----------|------------------|--------------|
| FAS1523 | * | CHAMPAIGN | 38 | 23 |
| FED. ROAD DIST. NO. 7 | | ILLINOIS | FED. AID PROJECT | |

* 09-00956-00-BR
Contract No. 91452



ELEVATION

* Perpendicular to skew



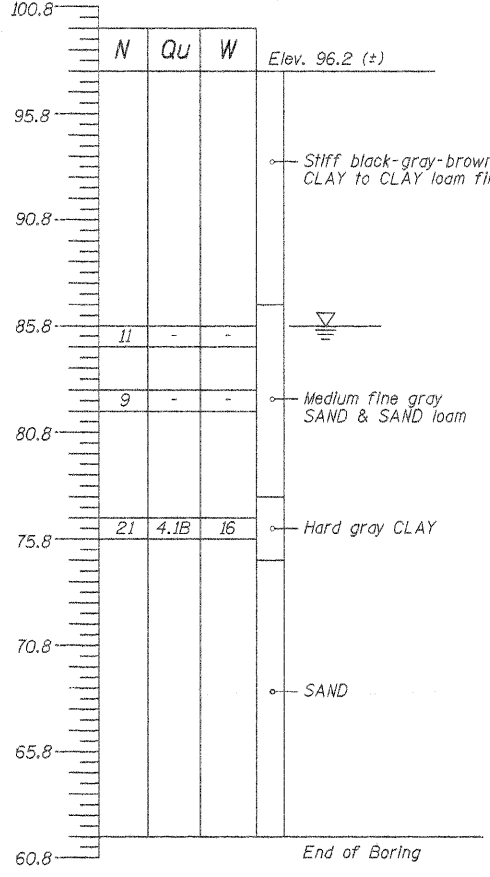
PLAN

BORING DATA

N - Standard Penetration Test - Blows per foot to drive 2" O.D. split spoon sampler 12" with 140 lb. hammer falling 30".
Qu - Unconfined Compressive Strength - Tons/Sq. Ft.
W - Water Content - Percentage of oven dry weight - %

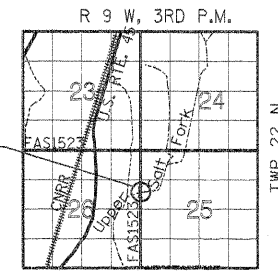
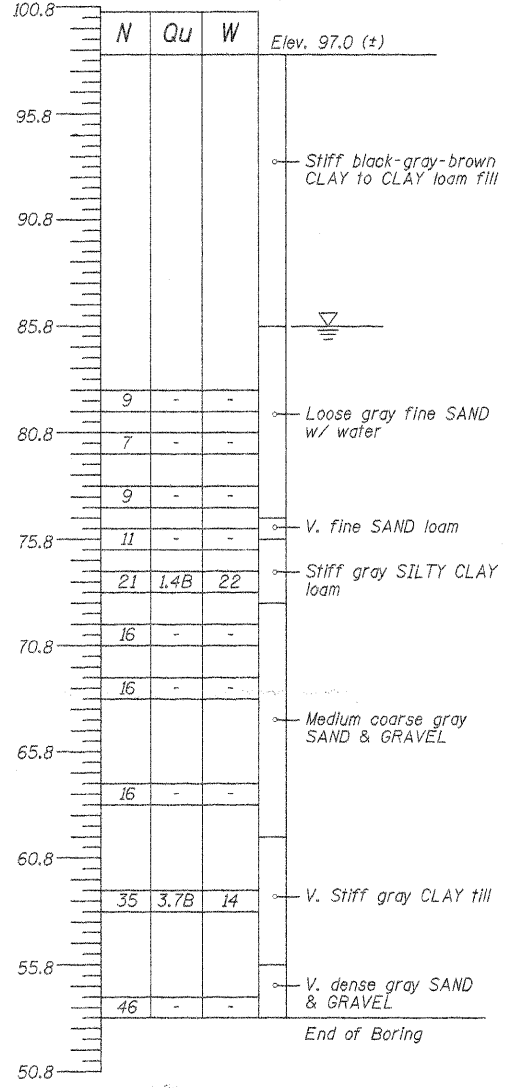
BORING B-1

Location: STA 9+75.6 (±), 8 ft RT
Elev. 96.2 (±)



BORING B-2

Location: STA 10+32.6 (±), 0
Elev. 97.0 (±)

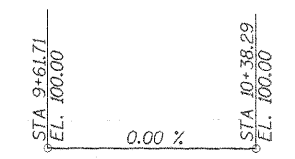


LOCATION SKETCH

STRUCTURE NO. 010-4549
SEC. 09-00956-00-BR BUILT 20...
FAS 1523/CH 55
CHAMPAIGN COUNTY
LOADING HL 93

NAME PLATE

See Standard 515001



PROFILE GRADE

DESIGN SPECIFICATIONS

AASHTO LRFD (2007) and applicable Interims

DESIGN LOADING

HL-93
25 P.S.F Future Wearing Surface

DESIGN STRESSES

$f'_c = 3,500$ psi (Cast In Place Concrete)
 $f_y = 50,000$ psi (M270 Grades 50 & 50W)
 $f_y = 60,000$ psi (Reinforcement)

WATERWAY DATA

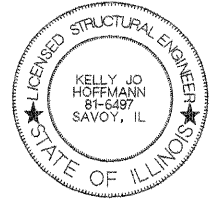
| | |
|------------------------------|-------------|
| Drainage Area | 8.2 Sq. Mi. |
| Existing Opening (30 Yr.) | 344 Sq. Ft. |
| Required Opening (30 Yr.) | 313 Sq. Ft. |
| Proposed Opening (30 Yr.) | 374 Sq. Ft. |
| Design Discharge (30 Yr.) | 1610 C.F.S. |
| Computed Discharge (100 Yr.) | 2160 C.F.S. |
| 30 Year Head | 0.02 Ft. |
| 100 Year Head | 0.13 Ft. |

GENERAL NOTES

- Layout of slope protection system may be varied in the field to suit ground conditions as directed by the Engineer.
- The Contractor shall drive 1 steel test pile in a permanent location at each abutment and each pier as directed by the Engineer before ordering the remainder of piles.
- Boring Data is shown only as as guide to bidders in estimating soil conditions which may be encountered during construction.
- Class SI or MS Concrete shall be used in the abutments and piers.
- Class BS concrete shall be used for the bridge deck.

TOTAL BILL OF MATERIAL

| ITEM | UNIT | SUPER | SUB | TOTAL |
|--|----------|-------|------|-------|
| Porous Granular Material (Special) | Cu. Yd. | - | 160 | 160 |
| Removal of Existing Structures | Each | 1 | - | 1 |
| Structure Excavation | Cu. Yd. | - | 385 | 385 |
| Concrete Structures | Cu. Yd. | - | 48.5 | 48.5 |
| Concrete Superstructures (bridge deck) | Cu. Yd. | 154 | - | 154 |
| Bridge Deck Grooving | Sq. Yd. | 461 | - | 461 |
| Protective Coat | Sq. Yd. | 490 | - | 490 |
| Furnishing & Erecting Structural Steel | L. Sum | 1 | - | 1 |
| Reinforcement Bars | Pound | - | 2960 | 2960 |
| Reinforcement Bars, Epoxy Coated | Pound | 31770 | 830 | 32600 |
| Bar Splicers | Each | 108 | - | 108 |
| Steel Railing, Type SM | Foot | 151 | - | 151 |
| Name Plates | Each | - | 1 | 1 |
| Furnishing Steel Piles HP10x42 | Foot | - | 1400 | 1400 |
| Driving Piles | Foot | - | 1400 | 1400 |
| Test Pile Steel HP10x42 | Each | - | 2 | 2 |
| Pile Shoes | Each | - | 30 | 30 |
| Geocomposite Wall Drain | Sq. Yds. | - | 115 | 115 |
| Pipe Underdrains For Structures 4" | Foot | - | 230 | 230 |
| Grouted Riprap | Sq. Yds. | - | 290 | 290 |
| Concrete Cut-Off Wall | Cu. Yd. | - | 10.8 | 10.8 |



Kelly Jo Hoffmann
Illinois Licensed Structural Engineer Number 6497
License Expires 11/30/12

| | | | | | | |
|------|----------------|-----|------|------------------------|----|------|
| DSGN | K.J. Hoffmann | 11 | 5/11 | Correct Steel Strength | | |
| DR | B.A. Clark | | | | | |
| CHK | J.R. Wolf | | | | | |
| APVD | A. Fraunhoffer | NO. | DATE | REVISION | BY | APVD |

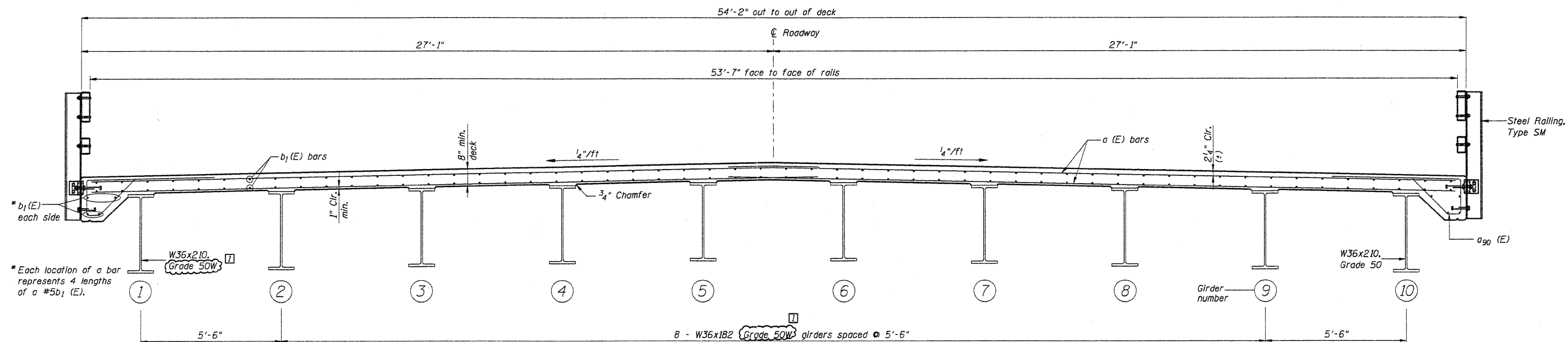
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A division of Engineering Resource Associates, Inc.
Consulting Engineers, Scientists, & Surveyors

3002 CROSSING COURT
CHAMPAIGN, IL 61822
PHONE (217) 351-6268
FAX (217) 356-1802

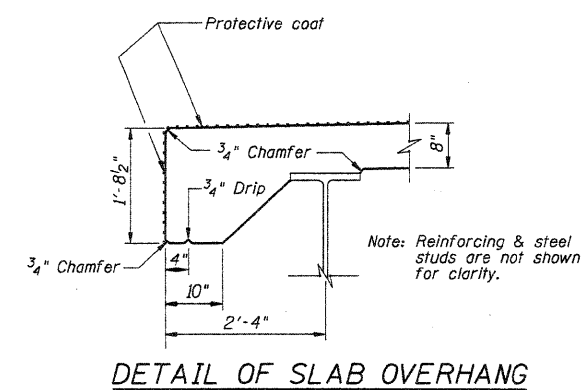
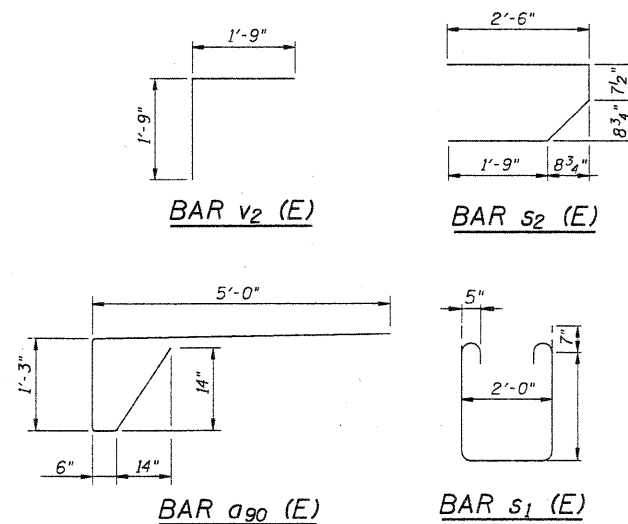
| | | |
|---|--|---------------------|
| GENERAL PLAN AND ELEVATION | | SHEET 23 |
| FAS 1523 (CH 55) OVER UPPER SALT FORK SEC 09-00956-00-BR CHAMPAIGN COUNTY | | DWG NO. 7052GPE.dgn |
| | | DATE FEB 2011 |
| | | PROJ NO. 7052 |

| | | | | |
|-----------------------|----------|-------------------|--------------|-----------|
| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| FAS1523 | # | CHAMPAIGN | 38 | 28 |
| FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT- | | |

* 09-00956-00-BR
Contract No. 91452



SUPERSTRUCTURE SECTION
looking upstation



Work Sheets 27 & 28 together.

| | | | | | |
|------|-------------------|------|--------------------|----------|----|
| DSGN | J. Hoffmann | 5/11 | Correct Steel Type | | |
| DR | B.A. Clark | | | | |
| CHK | J.R. Wolf | | | | |
| APVD | J.A. Frauenhoffer | NO. | DATE | REVISION | BY |

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FAX (217) 355-1902

SUPERSTRUCTURE (SHEET 2 OF 2)
FAS 1523 (CH 55) OVER UPPER SALT FORK
SEC 09-00956-00-BR
CHAMPAIGN COUNTY

| | |
|----------|-------------|
| SHEET | 28 |
| DWG NO. | 7052sup.dgn |
| DATE | FEB 2011 |
| PROJ NO. | 7052 |

| | Abut. |
|---------------------|-------|
| R _{DC} (K) | 29.2 |
| R _{DW} (K) | 6.6 |
| R _± (K) | 54.9 |
| R _{IM} (K) | 13.2 |
| R (Total) (K) | 103.9 |

| | Abut. |
|---------------------|-------|
| R _{DC} (K) | 37.3 |
| R _{DW} (K) | 6.2 |
| R _± (K) | 52.0 |
| R _{IM} (K) | 12.5 |
| R (Total) (K) | 108 |

| | 0.5 Span |
|---|----------|
| I _s (in ⁴) | 11300 |
| S _s (in ³) | 623 |
| DC (K/ft.) | 0.775 |
| DW (K/ft.) | 0.175 |
| M _{dc} (K) | 530 |
| M _{dw} (K) | 120 |
| M (±+IM) (K) | 944.2 |
| M _u (Strength I) (K) | 2495 |
| f _s DC (k.s.i.) | 10.22 |
| f _s DW (k.s.i.) | 2.31 |
| f _s (±+IM) (k.s.i.) | 18.19 |
| f _s 1.75(±+IM) (k.s.i.) | 31.83 |
| f _s (SERVICE II) (k.s.i.) | 36.18 |
| f _s (Total)(Strength I) (k.s.i.) | 48.07 |
| VR (K) | 68.1 |

| | 0.5 Span |
|---|----------|
| I _s (in ⁴) | 13200 |
| S _s (in ³) | 719 |
| DC (K/ft.) | 0.990 |
| DW (K/ft.) | 0.165 |
| M _{dc} (K) | 678 |
| M _{dw} (K) | 113 |
| M (±+IM) (K) | 1106.5 |
| M _u (Strength I) (K) | 2953 |
| f _s DC (k.s.i.) | 11.31 |
| f _s DW (k.s.i.) | 1.88 |
| f _s (±+IM) (k.s.i.) | 18.47 |
| f _s 1.75(±+IM) (k.s.i.) | 32.32 |
| f _s (SERVICE II) (k.s.i.) | 37.20 |
| f _s (Total)(Strength I) (k.s.i.) | 49.28 |
| VR (K) | 64.5 |

TOP OF GIRDER ELEVATIONS

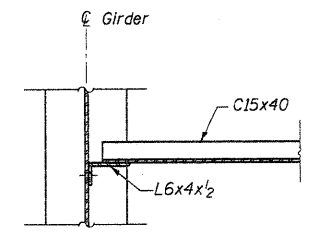
| Location | Girder 1 | | Girder 2 | | Girder 3 | | Girder 4 | | Girder 5 | |
|-------------------|----------|-----------|----------|-----------|----------|-----------|----------|-----------|----------|-----------|
| | Station | Elevation | Station | Elevation | Station | Elevation | Station | Elevation | Station | Elevation |
| ℄ bearing S. Abut | 9+56.37 | 98.765 | 9+57.84 | 98.880 | 9+59.32 | 98.995 | 9+60.79 | 99.109 | 9+62.26 | 99.224 |
| 0.25 L | 9+84.62 | 98.685 | 9+86.09 | 98.811 | 9+87.57 | 98.926 | 9+89.04 | 99.040 | 9+90.51 | 99.155 |
| 0.50 L | 10+12.87 | 98.653 | 10+14.34 | 98.783 | 10+15.82 | 98.898 | 10+17.29 | 99.012 | 10+18.76 | 99.127 |
| 0.75 L | 10+41.12 | 98.685 | 10+42.59 | 98.811 | 10+44.07 | 98.926 | 10+45.54 | 99.040 | 10+47.01 | 99.155 |
| ℄ bearing N. Abut | 10+30.37 | 98.765 | 10+31.84 | 98.880 | 10+33.32 | 98.995 | 10+34.79 | 99.109 | 10+36.26 | 99.224 |

| Location | Girder 6 | | Girder 7 | | Girder 8 | | Girder 9 | | Girder 10 | |
|-------------------|----------|-----------|----------|-----------|----------|-----------|----------|-----------|-----------|-----------|
| | Station | Elevation | Station | Elevation | Station | Elevation | Station | Elevation | Station | Elevation |
| ℄ bearing S. Abut | 9+63.74 | 99.224 | 9+65.21 | 99.109 | 9+66.68 | 98.995 | 9+68.16 | 98.880 | 9+69.63 | 98.765 |
| 0.25 L | 9+91.99 | 99.155 | 9+93.46 | 99.040 | 9+94.93 | 98.926 | 9+96.41 | 98.811 | 9+97.88 | 98.685 |
| 0.50 L | 10+20.24 | 99.127 | 10+21.71 | 99.012 | 10+23.18 | 98.898 | 10+24.66 | 98.783 | 10+26.13 | 98.653 |
| 0.75 L | 10+48.49 | 99.155 | 10+49.96 | 99.040 | 10+51.43 | 98.926 | 10+52.91 | 98.811 | 10+54.38 | 98.685 |
| ℄ bearing N. Abut | 10+37.74 | 99.224 | 10+39.21 | 99.109 | 10+40.68 | 98.995 | 10+42.16 | 98.880 | 10+43.63 | 98.765 |

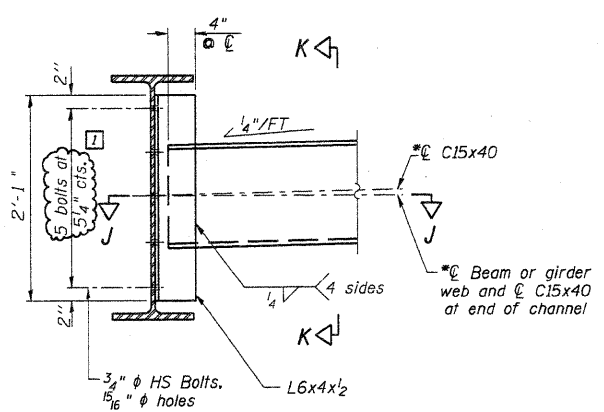
* Beam elevation include deflection from weight of concrete only.

DEFINITIONS

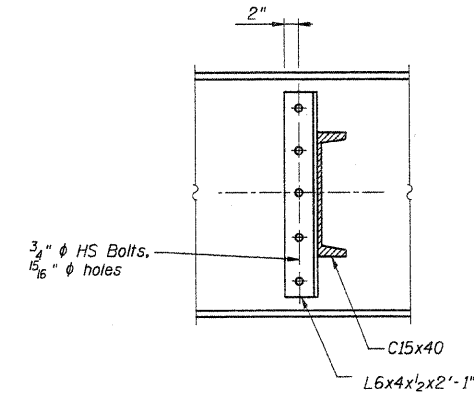
- I_s, S_s : The moment of inertia and section modulus of the steel section used in computing f_s (Total- Strength I & Service II) due to non-composite dead loads (in⁴ and in³)
- VR : Maximum un-factored shear range in span.
- DC : Un-factored non-composite dead load (kips/ft.)
- M_{dc} : Un-factored moment due to non-composite dead load (K)
- DW : Un-factored long-term composite (superimposed future wearing surface only) dead load (kip/ft.)
- M_{dw} : Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (K)
- M (±+IM) : Un-factored live load moment plus dynamic load allowance (impact) (K)
- M_u (Strength I) : Factored design moment (K).
[1.25M_{dc} + 1.5M_{dw} + 1.75M (±+IM)]
- f_s (Service II) : Sum of stresses as computed from the moments below (ksi).
[M_{dc} + M_{dw} + 1.3M (±+IM)]
- f_s (Total)(Strength I) : Sum of stresses as computed from the moments below on non compact section (ksi).
[1.25M_{dc} + 1.5M_{dw} + 1.75M (±+IM)]



SECTION J-J



INTERIOR DIAPHRAGM DI
27 required



SECTION K-K

Note:
Two hardened washers required for each set of oversized holes.
* Alternate channels are permitted to facilitate material acquisition. Calculated weight of structural steel is based on the lighter section. The alternate, C15x50, if utilized, shall be provided at no additional cost to the Department.

| | | | | | |
|------|-------------------|------|----------------------|----------|----|
| DSGN | K.J. Hoffmann | 5/11 | Clarify Bolt Spacing | | |
| DR | N.J. Liggett | | | | |
| CHK | J.R. Wolf | | | | |
| APVD | Q.A. Frauenhoffer | NO. | DATE | REVISION | BY |

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| | | |
|---|--|---|
| STEEL FRAMING DETAILS (SHEET 2 OF 2) | | SHEET 33 |
| FAS 1523 (CH 55) OVER UPPER SALT FORK SEC 09-00956-00-BR CHAMPAIGN COUNTY | | DWG NO. 7052stl.dgn DATE FEB 2011 PROJ NO. 7052 |