BRIDGE OVER LITTLE LARAMIE RIVER

STA 14 + 40

COUNTY ROAD NO. 416

ALBANY CO.

DESIGN DATA


REINFORCED CONCRETE: Load Factor Design -
- Class A Concrete $f_c = 3750$ psi
- Class B Concrete $f_c = 3240$ psi
- Reinforcing Steel $f_y = 60000$ psi (Grade 60)
- $f_y = 40000$ psi (Grade 40)

STRUCTURAL STEEL: Load Factor Design -
- ASTM A709 (Grade 36)
  $f_y = 36000$ psi
- ASTM A709 (Grade 50)
  $f_y = 50000$ psi

ROADWAY WIDTH: 28'-0"

PLF LOADS: Abutments, 76.4 T

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ESTIMATED QUANTITIES - Code X071

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<th>ITEM NO.</th>
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<th>ESTIMATE</th>
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<td>LS</td>
<td>LUMP SUM</td>
<td>644 SF</td>
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<td>210.0000</td>
<td>DRY EXCAVATION</td>
<td>CY</td>
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<td>220.0000</td>
<td>POROUS BACKFILL MATERIAL</td>
<td>CY</td>
<td>15</td>
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<td>500.0000</td>
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<td>LS</td>
<td>LUMP SUM</td>
<td>65000 LB</td>
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<td>503.0000</td>
<td>BRIDGE RAILING</td>
<td>LF</td>
<td>195</td>
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<td>504.1403</td>
<td>STEEL PLUGS MP 1403</td>
<td>LF</td>
<td>218</td>
<td></td>
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<td>505.0000</td>
<td>WIRE EXC. RIPRAP</td>
<td>SD</td>
<td>450</td>
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<tr>
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<td>CLASS A CONCRETE</td>
<td>LS</td>
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<td>REINFORCING STEEL (EPoxy COATED)</td>
<td>LS</td>
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GENERAL NOTE

ENVIRONMENTAL RESTRICTIONS: In-stream construction activity shall be in accordance with Subsection 100.13 - ENVIRONMENTAL AND POLLUTION CONTROLS and Section III - ENVIRONMENTAL REQUIREMENTS of the Standard Specifications, and will be permitted only during the period of June 15 thru September 30.

REMOVAL OF TIMBER BRIDGES: The existing 28'-0" x 16'-0" two span timber stringer bridge, Structure No. LAC, shall be removed by the Contractor and become the property of the County. The Contractor shall coordinate the removal of the structure with the County and the Engineer.

WIRE ENCLOSURE REQUIREMENT: Wire enclosed riprap shall be placed as shown on Plans. Riprap material shall be from a non-stress, Contractor furnished source and be free of free fragments.

CONSTRUCTION: The Contractor shall sequence the work such that traffic movement is allowed across the new or existing structure in the Spring and Fall as directed by the Engineer.

STREAM DATA

| Drainage Area | 143.0 sq mi |
| Slope of Streambed | 0.50% |
| Description of Channel Material | Sand & Gravel |
| Divit Potential | Large Trees & Logs |
| Proposed maximum velocity | 7.26 ft/s |
| Flood Discharge | 2860 cfs |
| Source of Discharge | Log Pearson Type III |

REFERENCES

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REFERENCES
PLAN

Elevations:
- Berm Elev 7223.9
- High Water Elev 7224.3
- Ordinary High Water Elev 7223.9
- Elev 7225.6
- Elev 7224.5

Grade:
- -3.00% 35'

SECTION A-A

Note: Elevations shown that do not indicate Finished Grade at Rear Face of Abutment on Bridge Roadway.

GENERAL PLAN & ELEVATION
BRIDGE OVER LITTLE LARAMIE RIVER
STA 14+50
COUNTY ROAD No. 416
OS8005

GENERAL NOTES:
- Sheet 83 of 83 Sheets
- 06/14/03.png
**SUBSTRUCTURE LAYOUT**

**SUBSTRUCTURE DATA**

<table>
<thead>
<tr>
<th>Location</th>
<th>Pile No. Cutoff Elevations</th>
<th>Pile No.</th>
<th>Elevation</th>
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<tr>
<td>Abut No. 1</td>
<td>7728.43</td>
<td>7728.43</td>
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<tr>
<td>Abut No. 2</td>
<td>7725.11</td>
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*Note:* Gauge root to sound metal before welding second side of splice.

*All piles are HP 14x73.*
TYPICAL PLAN NORMAL TO SLOPE

Notes:
1. Steel sheets shall be 3/8" crane rated, 30 ft. standard size or 3x4 ft. sheets.
2. Wire mesh strips shall be laced to each other and to tops of sides and corners of enclosures (see Lacing Detail).

Open ends of enclosures along outside edges shall be closed with smooth steel wire at 6" o.c. spacing along outside edges.

TYPICAL SECTION

Notes:
1. Top mesh wire strips to be laced to each other and to tops of sides and corners of enclosures (see Lacing Detail).

This section not required when riprap extends across bottom of channel.

OPEN END DETAIL

Notes:
1. This section not required when riprap extends across bottom of channel.

Wire Enclosed Riprap Plan

Adjacent enclosures to be laced together at bottom, sides and corners (see Lacing Detail).

Wire Enclosed Riprap Plan

Top of Riprap

Channel

Top of Slope

Top of Slope

Wire Enclosed Riprap Plan

Wire Enclosed Riprap Plan

Adjacent enclosures to be laced together at bottom, sides and corners (see Lacing Detail).

Lacing Detail

Notes:
1. Lacing detail shall be 1/2" gage galvanized.

Top of Slope

Top of Slope

Bottom of Channel

Bottom of Channel

This section not required when riprap extends across bottom of channel.
HALF SECTION
(Intermediate Cross Frame)

BEARING AT ABUTMENTS

OPTIONAL FIELD SPICE DETAIL

WEB CUTTING DIAGRAM
(Includes Dead Load Deflection & Grades)
**FRAMING PLAN**

(Longitudinal dimensions shown are along the bottom of the bottom flange)

- Top Flange
  - E 7 x 12 (A709, Grade 50)
- Bottom Flange
  - E 7 x 13 (A709, Grade 50)
- Web
  - E 6 2 x 45 (A709, Grade 50)

**Shear Connector Spacing**
- 17 Spacing 12'-10" - 17'-0"
- 14 Spacing 12'-17" - 17'-0"
- 74 Spacing 12'-17" - 17'-0"

**STIFFENER DETAILS**

Notes:
1. Welding stiffeners to webs and flanges, using a SAW process, shall not be permitted.
2. Flange and web splice welds shall be inspected by ultrasonic testing after being ground flush.
3. Stiffener to web welds shall be made on one side of the stiffener at a time.
4. For Field Splice detail see Sheet No. 9.
5. Ends of girders at each abutment, stiffener No. 1, and alignment of welded plates through web shall be vertical when in erected position.
6. Flange and web splice welds will be inspected by ultrasonic testing after being ground flush.
7. The optional Field Splices are included in the quantity of Structural Steel.

**SUPERSTRUCTURE DETAILS**

BRIDGE OVER LITTLE LARAMIE RIVER

STA 14+40

County Road No. 46

0500051

*Signature*

K. L. Compton

10/3/02

Page B8 of B3 Sheets
ELEVATION AT TERMINAL TYPE (1)
BOX BEAM ENTRANCE END

ELEVATION AT TERMINAL TYPE (2)
BOX BEAM EXIT END (INTERSTATE ONLY)

ELEVATION AT TERMINAL TYPE (3)
NO CONNECTION

ELEVATION AT TERMINAL TYPE (4)
CORRUGATED BEAM

STANDARD SPlice

EXPANSION SPlice

DOUBLE-BOLTED SPlice

SECTION D-D

SECTION E-E

BRIDGE RAILING DETAILS
BRIDGE OVER LITTLE LARAMIE RIVER
STA 14+40
COUNTY ROAD No. 46
OS 00015

(1) Either top or bottom rail in terminal section may be the longer rail.
(2) The Fabricator shall prepare a sample of an indicated joint and macroetch it to demonstrate that the required effective section is achieved.
(3) Braces shall only be incorporated into Type (d), (e), and (f) Terminals and shall be placed at center of TS 6x 2x, 250.
(4) Each rail length shall be continuous over a width of two posts. Railings that are part of a Type (d), (e), or (f) Terminal is continuous if either the top or bottom rail in the terminal is continuous and the minimum of two posts.
(5) In rehabilitative work, railings that cannot be made continuous over a minimum of two posts shall be provided with a double-bolted splice.
(6) Not more than one splice shall be permitted per side of post except at expansion splices.
(7) For terminal top locations, see details. Post Detail and Sections A-E, B-E and C-E see Sheet No. 10.
(8) Dim A shall be 2'-9".
PLAN OF SLAB

Longitudinal dimensions shown are along finished grade.

TYPICAL SECTION THRU ROADWAY

(Note: Bar marks preceded by an asterisk (*) indicate reinforcing that shall be epoxy coated.

1) The reinforcing steel fabricator shall prefix all superstructure bar marks with numeral 3.

2) Concrete in the deck shall be placed in one continuous operation at the minimum rate of 13 LF per hour.

3) The estimated quantity of Class A Concrete is 69.4 cu. yd. and the estimated quantity of Class B Concrete is 33.3 cu. yd.

4) For bridge railing anchor bolt locations see Sheet No. 10.

5) For screed elevations, sections thru end diaphragm, slab constant joint, Curb Radius Detail and all of reinforcement see Sheet No. 12.)