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<tr>
<td>BA-CIP-2399-0 (1 of 2)</td>
<td>Bridge approach; Cast in place; 2399 Rail; No skew</td>
<td>7/22/2016</td>
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<td>Bridge approach; Cast in place; 2399 Rail; No skew</td>
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<td>Bridge approach; Cast in place; R34 Rail with curb; No skew</td>
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<td>Bridge approach; Cast in place; R34 Rail with curb; No skew</td>
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<td>BAIA-CIP-34FS-0 (1 of 2)</td>
<td>Bridge approach; Integral Abut; CIP; 34 in. F shape; No skew</td>
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<td>BAIA-CIP-34FS-0 (2 of 2)</td>
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<tr>
<td>BAIA-CIP-34FS-L-Greater than 30 degrees (1 of 2)</td>
<td>Bridge approach; Integral Abut; CIP; 34 in. F shape; Left skew; Greater than 30 degrees</td>
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<td>Bridge approach; Integral Abut; CIP; 34 in. F shape; Left skew; Greater than 30 degrees</td>
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<td>BAIA-CIP-34FS-L-Less than or equal to 30 degrees (1 of 2)</td>
<td>Bridge approach; Integral Abut; CIP; 34 in. F shape; Left skew; Less than or equal to 30 degrees</td>
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<tr>
<td>BAIA-CIP-34FS-R-Greater than 30 degrees (1 of 2)</td>
<td>Bridge approach; Integral Abut; CIP; 34 in. F shape; Right skew; Greater than 30 degrees</td>
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<td>BAIA-CIP-34FS-R-Less than or equal to 30 degrees (1 of 2)</td>
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<tr>
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<td>Bridge Approach; Precast; 34 in. F Shape; No skew</td>
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<td>SA-2-0</td>
<td>Approach span for vaulted abutments (sand filled) no skew</td>
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<td>Superstructure details (Steel beams for stub abutment, multi-span projects)</td>
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**INSIDE ELEVATION OF RAILING AND CURB**

**SECTION A-A**

- 10 mil Polyethylene bond
  - Breaker on slots covered

**DETAIL A**

- Expansion joint
- See notes

**Notes:**

- The joint opening shall be adjusted for temperature per Article 520.04 of the Standard Specifications. However, since this detail is for jointless structures, the length of bridge used to calculate the adjustment shall be equal to half the total bridge length plus the length of the bridge approach pavement.

- The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.

- Approach footing details shall be paid for as Concrete Structure.

- Approach slab shall be paid for as Concrete Structure.

- For Granular Backfill for Structures and drainage treatment details, see sheet of .

- For railing details, see sheet of .

### BILL OF MATERIAL

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<th>Cu. Yd.</th>
<th>Pound</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>92</td>
<td></td>
</tr>
<tr>
<td>b</td>
<td>12</td>
<td></td>
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<tr>
<td>c</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>d</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>e</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>f</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>g</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>h</td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>

**Concrete Superstructure**

- Cu. Yd.: 120

**Concrete Structures**

- Cu. Yd.: 68

**Epoxy Coated**

- Cu. Yd.: 80

**Notes:**

- Per manufacturer recommendations

**For Granular Backfill for Structures and drainage treatment details:**

- See notes.

**For railing details:**

- See notes.
**Notes:**

The joint opening shall be adjusted for temperature per Article 520.04 of the Standard Specifications. However, since this detail is for jointless structures, the length of bridge used to calculate the adjustment shall be equal to half the total bridge length plus the length of the bridge approach pavement.

Approach rail shall be paid for as Concrete Superstructure (Approach Slab). Approach footing concrete shall be paid for as Concrete Structures.

The approach rail shall be cast and cured with the approach slab.

The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.

Cost of excavation for approach footing included with Concrete Structures. For Granular Backfill for Structures and drainage treatment details, see sheet of.

In the cold region, use Jointless Slab Design procedures as follows:

The joint opening shall be adjusted for temperature per Article 520.04 of the Standard Specifications. However, since this detail is for jointless structures, the length of bridge used to calculate the adjustment shall be equal to half the total bridge length plus the length of the bridge approach pavement.

Approach rail shall be paid for as Concrete Superstructure (Approach Slab). Approach footing concrete shall be paid for as Concrete Structures.

The approach rail shall be cast and cured with the approach slab.

The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.

Cost of excavation for approach footing included with Concrete Structures. For Granular Backfill for Structures and drainage treatment details, see sheet of.

For railing details, see sheet of.

**Per manufacturer recommendations:**

- Use Jointless Slab Design procedures as follows:
- The joint opening shall be adjusted for temperature per Article 520.04 of the Standard Specifications. However, since this detail is for jointless structures, the length of bridge used to calculate the adjustment shall be equal to half the total bridge length plus the length of the bridge approach pavement.
- Approach rail shall be paid for as Concrete Superstructure (Approach Slab). Approach footing concrete shall be paid for as Concrete Structures.
- The approach rail shall be cast and cured with the approach slab.
- The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
- Cost of excavation for approach footing included with Concrete Structures. For Granular Backfill for Structures and drainage treatment details, see sheet of.
- For railing details, see sheet of.

**For Granular Backfill for Structures and drainage treatment details, see sheet of.**

**Bridge deck**

- End of Approach Slab
- End of Approach Slab
- Bridge deck

**Inside Elevation of railings and curb**

- SECTION A-A
- SECTION B-B

**Bill of Material**

- Two Approaches
- Concrete Structures
- Concrete Superstructure
- Roadway Backfill
- Epoxy Coated

**Structure NO.**

- Bridge Approach Slab Details
- State of Illinois
- Department of Transportation

**File Name**

- User Name
- Plot Scale
- Plot Date
- Checked
- Drawn
- Designed
- Revised

**Contract No.**

- Bridge Deck
- End of Approach Slab

**Joints:**

- Expansion joint
- Temperature joint
- Bridge joint

**Details:**

- Jointless Slab Design
- Joint Opening
- Approach Slab
- Approach Rail

**Header:**

- State of Illinois
- Department of Transportation
- FILE NAME
- USER NAME
- PLOT SCALE
- PLOT DATE
- CHECKED
- DRAWN
- DESIGNED
- REVISED
- WHITE PRINT
- PRINT SCALE
- DRAWN
- CHECKED
- REVISED
- DESIGNER
- DATE

**Footer:**

- STATE OF ILLINOIS
- DEPARTMENT OF TRANSPORTATION
- FILE NAME
- USER NAME
- PLOT SCALE
- PLOT DATE
- CHECKED
- DRAWN
- DESIGNED
- REVISED
- WHITE PRINT
- PRINT SCALE
- DRAWN
- CHECKED
- REVISED
- DESIGNER
- DATE

**Notes:**

- Use Jointless Slab Design procedures as follows:
- The joint opening shall be adjusted for temperature per Article 520.04 of the Standard Specifications. However, since this detail is for jointless structures, the length of bridge used to calculate the adjustment shall be equal to half the total bridge length plus the length of the bridge approach pavement.
- Approach rail shall be paid for as Concrete Superstructure (Approach Slab). Approach footing concrete shall be paid for as Concrete Structures.
- The approach rail shall be cast and cured with the approach slab.
- The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
- Cost of excavation for approach footing included with Concrete Structures. For Granular Backfill for Structures and drainage treatment details, see sheet of.
- For railing details, see sheet of.
**INSIDE ELEVATION OF PARAPET AND CURB**

**SECTION A-A**

**DETAIL A**

* Cost included with Concrete Superstructure (Approach Slab).

**TWO APPROACHES**

**BILL OF MATERIAL**

**CONCRETE SUPERSTRUCTURE (APPROACH SLAB)**

- **Concrete Structure:**
  - Cu. Yd.: 30'-0''
  - Concrete Superstructure (Approach Slab).

**GRAVEL BACKFILL**

- **Concrete:**
  - Cu. Yd.: 120

**CONCRETE APPROACH FOOTING**

- **Concrete Structure:**
  - Cu. Yd.: 12

**CONCRETE PAVEMENT**

- **Concrete Structure:**
  - Cu. Yd.: 12

**CONCRETE PARAPET**

- **Concrete Structure:**
  - Cu. Yd.: 12

**Notes:**

The joint opening shall be adjusted for temperature per Article 520.04 of the Standard Specifications. However, since this detail is for jointless structures, the length of bridge used to calculate the adjustment shall be equal to half the total bridge length plus the length of the bridge approach pavement.

Concrete parapet shall be paid for as Concrete Superstructure (Approach Slab).

Approach footing concrete shall be paid for as Concrete Superstructure (Approach Slab).

Approach footing concrete shall be paid for as Concrete Superstructures.

The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.

Cost of excavation for approach footing included with Concrete Structures.

For Granular Backfill for Structures and drainage treatment details, see sheet 3 of 2.

**For manufacturer recommendations:**

- Epoxy Coated Reinforcement Bars, Mat'l. Type B, 4''
- Subbase Granular
INSIDE ELEVATION OF PARAPET AND CURB

SECTION A-A

DETAIL A

VIEW B-B

TWO APPROACHES

BILL OF MATERIAL

Notes:

- The joint opening shall be adjusted for temperature per Article 520.04 of the Standard Specifications. However, since this detail is for jointless structures, the length of bridge used to calculate the adjustment shall equal half the total bridge length plus the length of the bridge approach pavement.
- Parapet concrete shall be paid as Concrete Superstructure (Approach Slab). Approach slab shall be paid as Concrete Superstructure (Approach Slab). Approach footing concrete shall be paid for as Concrete Superstructure (Approach Slab).
- The approach footing maximum applied service bearing pressure (Qmax) is 2.0 ksf.
- Cost of excavation for approach footing is included with Concrete Structures.
- For granular backfill for structures and drainage treatment details, see sheet of .

--}[BAIA-CIP-34FS-L(30°)]
### Bill of Material

**Concrete Superstructure**

<table>
<thead>
<tr>
<th>Cu. Yd.</th>
<th>Pound</th>
</tr>
</thead>
<tbody>
<tr>
<td>5'-7''</td>
<td></td>
</tr>
<tr>
<td>7'-4''</td>
<td></td>
</tr>
<tr>
<td>29'-8''</td>
<td></td>
</tr>
<tr>
<td>14'-8''</td>
<td></td>
</tr>
</tbody>
</table>

**Concrete Structures**

**Concrete Superstructure**

<table>
<thead>
<tr>
<th>Cu. Yd.</th>
<th>Pound</th>
</tr>
</thead>
<tbody>
<tr>
<td>a  (E)</td>
<td></td>
</tr>
<tr>
<td>b  (E)</td>
<td></td>
</tr>
<tr>
<td>d  (E)</td>
<td></td>
</tr>
<tr>
<td>e  (E)</td>
<td></td>
</tr>
</tbody>
</table>

**Epoxy Coated Reinforcement Bars, (Approach Slab)**

<table>
<thead>
<tr>
<th>Cu. Yd.</th>
<th>Pound</th>
</tr>
</thead>
<tbody>
<tr>
<td>5'-7''</td>
<td></td>
</tr>
<tr>
<td>7'-4''</td>
<td></td>
</tr>
<tr>
<td>29'-8''</td>
<td></td>
</tr>
<tr>
<td>14'-8''</td>
<td></td>
</tr>
</tbody>
</table>

**Subbase Granular**

<table>
<thead>
<tr>
<th>Cu. Yd.</th>
<th>Pound</th>
</tr>
</thead>
<tbody>
<tr>
<td>2'-6''</td>
<td></td>
</tr>
</tbody>
</table>

**Concrete Deck**

<table>
<thead>
<tr>
<th>Cu. Yd.</th>
<th>Pound</th>
</tr>
</thead>
<tbody>
<tr>
<td>5'-0''</td>
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</tr>
</tbody>
</table>

**Parapet and Curb**

**Material Type B, 4''**

**Granular Backfill**

<table>
<thead>
<tr>
<th>Cu. Yd.</th>
<th>Pound</th>
</tr>
</thead>
<tbody>
<tr>
<td>2'-6''</td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**

- The joint opening shall be adjusted for temperature per Article 520.04 of the Standard Specifications. However, since this detail is for jointless structures, the length of bridge used to calculate the adjustment shall be equal to half the total bridge length plus the length of the bridge approach pavement.

- Parapet concrete shall be paid as Concrete Superstructure.

- Approach slab shall be paid as Concrete Superstructure (Approach Slab).

- Approach footing concrete shall be paid for as Concrete Superstructure.

- The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.

- Cost of excavation for approach footing included with Concrete Structures.

- For Granular Backfill for Structures and drainage treatment details, see sheet of .
INSIDE ELEVATION OF PARAPET AND CURB

SECTION A-A

DETAIL A

VIEW B-B

Notes:
- The joint opening shall be adjusted for temperature per Article 520.04 of the Standard Specifications. However, since this detail is for jointless structures, the length of bridge used to calculate the adjustment shall be equal to half the total bridge length plus the length of the bridge approach pavement.
- Parapet concrete shall be paid for as Concrete Superstructure. Approach slab shall be paid for as Concrete Superstructure (Approach Slab). Approach footing concrete shall be paid for as Concrete Structures.
- The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
- Cost of excavation for approach footing included with Concrete Structures.
- For parapet backfill for Structures and drainage treatment details, see sheet 

BILL OF MATERIAL

TWO APPROACHES

BILL OF MATERIAL

CONCRETE

** Per manufacturer recommendations

* Cost included with Concrete Superstructure (Approach Slab).
STRUCTURE NO. 
BRIDGE APPROACH SLAB DETAILS

PLAN

End of bridge deck

End of approach slab

NEAR ABUTMENT

CROSS SECTION

AT APPROACH FOOTING

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FILE NAME
USER NAME
PLOT SCALE
PLOT DATE
CHECKED
DRAWN
CHECKED
REVISED
RECHECKED
DEPARTMENT OF TRANSPORTATION
STATE OF ILLINOIS
F.A.
RTE.
SECTION
ILLINOIS
FED. AID PROJECT
COUNTY
CONTRACT NO.
TOTAL SHEETS
SHEET NO.
07-22-16
Notes:

- The precast bridge approach slab shall be according to Section 504 of the Standard Specifications and shall be paid for at the contract unit price per square foot for Precast Bridge Approach Slab.
- A minimum lifting loop shall be provided for each bearing pad location. Cost included with Precast Bridge Approach Slab.
- A lifting loop with a proof load of 25,000 lbs. and utilized according to the manufacturer's recommendations may be used.

Compressive strength of precast concrete, f'c shall be 5,000 psi.
Compressive strength of precast concrete during initial lifting, fci shall be 6,000 psi.

**Fabric Bearing Pad**

<table>
<thead>
<tr>
<th>Interior Beam</th>
<th>Exterior Beam</th>
</tr>
</thead>
<tbody>
<tr>
<td>B(E)</td>
<td>S(E)</td>
</tr>
<tr>
<td>B(E)</td>
<td>S(E)</td>
</tr>
<tr>
<td>5' cl.</td>
<td>12' cl.</td>
</tr>
<tr>
<td>1'3''</td>
<td>12'0''</td>
</tr>
<tr>
<td>#5 S(E)</td>
<td>#5 S(E)</td>
</tr>
<tr>
<td>#4 D(E)</td>
<td>#4 D(E)</td>
</tr>
<tr>
<td>28 Spaces at 6'' = 14'-0''</td>
<td>28 Spaces at 6'' = 14'-0''</td>
</tr>
</tbody>
</table>

**Bar List**

<table>
<thead>
<tr>
<th>Bar List</th>
<th>Each Interior Beam</th>
<th>Each Exterior Beam</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bar No.</td>
<td>Type</td>
<td>Diameter</td>
</tr>
<tr>
<td>#5</td>
<td>B(E)</td>
<td>5/8</td>
</tr>
<tr>
<td>#9</td>
<td>B(E)</td>
<td>1 1/4</td>
</tr>
<tr>
<td>#4</td>
<td>D(E)</td>
<td>3/8</td>
</tr>
<tr>
<td>#4</td>
<td>D(E)</td>
<td>3/8</td>
</tr>
</tbody>
</table>

**Plan**

- 8 Spaces at 1'-6'' = 12'-0''
- 28 Spaces at 6'' = 14'-0''
- 30'-0'' End-to-end beam

**Lifting Loop Detail**

- 60° min. angle
- 3" Radius
- 3" Lift
- Top of Beam
- 1" Conduit
- 3" Holes
- 1'-10"

**Notes:**

- The top surface of precast bridge approach slabs shall be finished similar to precast prestressed deck beams with concrete wearing surface as specified in the IDOT "Manual for Fabrication of Precast Prestressed Concrete Products."
- Two 3" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location. Cost included with Precast Bridge Approach Slab.
- A precast prestressed deck beam with concrete wearing surface as specified in the IDOT "Manual for Fabrication of Precast Prestressed Concrete Products."
INSIDE ELEVATION OF PARAPET AND CURB

SECTION A-A

Notes:
- The joint opening shall be adjusted for temperature per Article 520.04 of the Standard Specifications. However, since this detail is for limited structures, the length of bridge used to calculate the adjustment shall be equal to half the total bridge length plus the length of the bridge approach pavement.
- After precast bridge approach slabs have been erected, holes shall be drilled into abutment and anchor dowels placed. Steel bars shall be filed with non-corrosive granular flux to top of precast slab and cured according to Article 1006.01 of the Standard Specifications for a minimum of 24 hours before placing the strip seal and wearing surface.
- Any concrete poured monolithically with the wearing surface, such as curbs, shall not be paid for separately, but will be included in the cost of Concrete Wearing Surface, 5".
- Anchor bolts shall be burned, sawed, or chipped off flush with the fabric bearing pads. All anchor bolts shall be drilled and grouted in cap (2 each anchor bolt)
- The locking edge rail groove shall be free of weld residue. Steel bars shall be sharpened and welded rail similar. There should be no gaps between rail and facing. The gland shall be sized for a maximum rated movement of 4 inches.
- The strip seal may be applied at slope discontinuities and stage strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed. The glands are made of a metal which does not permit any metal to metal contact and is not permeable. Gland shall be sized for a maximum rated movement of 4 inches.
- The gland shall be sized for a maximum rated movement of 4 inches. The gland shall be sized for a minimum of 24 hours before casting the shear keys to top of precast slab and cured according to Article 1020.13(a)(3) or 1020.13(a)(5) of the Standard Specifications for a minimum of 24 hours before placing the strip seal and wearing surface.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BIll OF MATERIAL

<table>
<thead>
<tr>
<th>Item</th>
<th>QTY</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1&quot; - 5/8&quot; bars (E)</td>
<td>240</td>
<td>@ 2&quot;</td>
</tr>
<tr>
<td>1&quot; - 3/4&quot; bars (E)</td>
<td>240</td>
<td>@ 2&quot;</td>
</tr>
<tr>
<td>1&quot; - 1/2&quot; bars (E)</td>
<td>240</td>
<td>@ 2&quot;</td>
</tr>
<tr>
<td>1&quot; - 1/4&quot; bars (E)</td>
<td>240</td>
<td>@ 2&quot;</td>
</tr>
</tbody>
</table>

For Granular Backfill for Structures and drainage treatment details, see sheet of .

Approach footing concrete shall be paid for as Concrete Structures.
Parapet concrete shall be paid for as Concrete Superstructure.
Concrete Wearing Surface, 5'' and wearing surface.
Any concrete poured monolithically with the wearing surface, such as curbs, shall not be paid for separately, but will be included in the cost of Concrete Wearing Surface, 5".

The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
Approach footing concrete shall be paid for as Concrete Structures.
Parapet concrete shall be paid for as Concrete Superstructure.
Concrete Wearing Surface, 5'' and wearing surface.
Any concrete poured monolithically with the wearing surface, such as curbs, shall not be paid for separately, but will be included in the cost of Concrete Wearing Surface, 5".

The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf. Cost of excavation for approach footing included with Concrete Structures.
Concrete Wearing Surface, 5'' and wearing surface.
Any concrete poured monolithically with the wearing surface, such as curbs, shall not be paid for separately, but will be included in the cost of Concrete Wearing Surface, 5".

The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf. Cost of excavation for approach footing included with Concrete Structures.
Concrete Wearing Surface, 5'' and wearing surface.
Any concrete poured monolithically with the wearing surface, such as curbs, shall not be paid for separately, but will be included in the cost of Concrete Wearing Surface, 5".

The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf. Cost of excavation for approach footing included with Concrete Structures.
Concrete Wearing Surface, 5'' and wearing surface.
The precast bridge approach slab shall be according to Section 504 of the "Manual for Fabrication of Precast Prestressed Concrete Products." The top surface of precast bridge approach slabs shall be finished similar to precast prestressed deck slabs with concrete wearing surface as specified in the ILLT "Manual for Fabrication of Precast Prestressed Concrete Products." Two 3'-0" expansion bearing pads of the dimensions of the exterior bearing pad shall be provided for each bearing pad location. Cost included with Precast Bridge Approach Slabs.

A minimum 2'-6" lifting pins shall be used to engage the lifting loops during handling. Compressive strength of precast concrete, 1% shall be 6,000 psi. Compressive strength of precast concrete during initial lifting, 1% shall be 5,000 psi. Stresses on precast concrete during handling.

Notes:

1. All bearing pads shall be 1'-0" thick. See notes for fabric bearing pads at approach slab footing and at beams.
2. Expansion bearing pads shall be bonded to the approach slab footing.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PRECAST BRIDGE APPROACH SLAB
STRUCTURE NO.

(For information only)

Notes:

1. All bearing pads shall be 1'-0" thick. See notes for fabric bearing pads at approach slab footing and at beams.
2. Expansion bearing pads shall be bonded to the approach slab footing.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PRECAST BRIDGE APPROACH SLAB
STRUCTURE NO.

(For information only)

Notes:

1. All bearing pads shall be 1'-0" thick. See notes for fabric bearing pads at approach slab footing and at beams.
2. Expansion bearing pads shall be bonded to the approach slab footing.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PRECAST BRIDGE APPROACH SLAB
STRUCTURE NO.

(For information only)

Notes:

1. All bearing pads shall be 1'-0" thick. See notes for fabric bearing pads at approach slab footing and at beams.
2. Expansion bearing pads shall be bonded to the approach slab footing.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PRECAST BRIDGE APPROACH SLAB
STRUCTURE NO.

(For information only)

Notes:

1. All bearing pads shall be 1'-0" thick. See notes for fabric bearing pads at approach slab footing and at beams.
2. Expansion bearing pads shall be bonded to the approach slab footing.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PRECAST BRIDGE APPROACH SLAB
STRUCTURE NO.

(For information only)

Notes:

1. All bearing pads shall be 1'-0" thick. See notes for fabric bearing pads at approach slab footing and at beams.
2. Expansion bearing pads shall be bonded to the approach slab footing.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PRECAST BRIDGE APPROACH SLAB
STRUCTURE NO.

(For information only)

Notes:

1. All bearing pads shall be 1'-0" thick. See notes for fabric bearing pads at approach slab footing and at beams.
2. Expansion bearing pads shall be bonded to the approach slab footing.
INSIDE ELEVATION OF PARAPET AND CURB

SECTION A-A

SECTION THRU STRIP SEAL JOINT

LOCKING EDGE RAIL

NOTES:

The Joint opening shall be adjusted for temperature per Article 520.04 of the Standard Specifications. However, since this detail is for turfless structures, the length of bridge used to calculate the adjustment shall be equal to half the total bridge length plus the length of the bridge approach pavement.

After precast bridge approach slabs have been erected, holes shall be drilled into abutment and abutment dowels placed. Shovel holes shall be filled with non-shrink grout in two of precast slabs and cured in accordance to Article 305G.33 of the Standard Specifications for a minimum of 24 hours before casting the shear keys and wearing surface.

Any concrete poured monolithically with the wearing surface, such as curbs, shall not be poured for the abutment and will be included in the cost of the Concrete Wearing Surface. S
d

The strip seal shall be made continuous and shall have a minimum thickness of 5/8". The strip seal shall extend 1-2" below the joint for the inside edge of the strip seal.

The manufacturer's recommended installation methods shall be followed. All steel components shall be galvanized after fabrication according to Article 300G.03 of the Standard Specifications.

The approach footing maximum applied service bearing pressure (Q max) = 2.0 ksf. Approach footing concrete shall be paid for as Concrete Structures.

Maximum space between rail segments at stage lines shall be 3'-6" (3'-0"). The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed. Locking Edge Rails may be applied at slope discontinuities and stage construction joints.

For Granular Backfill for Structures and drainage treatment details, see sheet of .

Notes:

Any concrete poured monolithically with the wearing surface, such as curbs, shall not be poured for the abutment and will be included in the cost of the Concrete Wearing Surface.
**SECTION B-B**

- **No.** and **Size**
  - No. 29'-8''
  - #4
  - 3''
  - #4
  - S (E)
  - S (E)

**SECTION C-C**

- **Length**
  - 58 - #5 S (E) bars at 6'' cts.

**PLAN VIEW**

- **#5 S (E) bars at 6'' cts.**
  - Full length, bottom
  - 8 spaces at 1'-6'' cts. = 12'-0''

**LIFTING LOOP DETAIL**

- **1'' # Conduit**

**BAR LIST**

- **Each Interior Beam**
  - **No.**
  - **Size**
  - **Length**
  - **Shape**
  - 1
  - #5
  - 8'-0''
  - S (E)

- **Each Exterior Beam**
  - **No.**
  - **Size**
  - **Length**
  - **Shape**
  - 1
  - #5
  - 29'-8''
  - S (E)

Notes:

- The precast bridge approach slab shall be according to Section 504 of the "Manual for Fabrication of Precast Prestressed Concrete Products." Two 3-1'' fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location. Cast-in-place substitution of Precast Bridge Approach Slab is not allowed.

- The top surface of precast bridge approach slabs shall be finished similar to precast prestressed deck beams with concrete wearing surface as specified in the IDOT "Manual for Fabrication of Precast Prestressed Concrete Products." Compressive strength of precast concrete, f'c shall be 5,000 psi. Compressive strength of precast concrete during initial lifting, f'ci shall be 5,000 psi.

- A minimum 2 1/2'' lifting pin shall be used to engage the lifting loops during handling.

- The precast bridge approach slab shall be according to Section 504 of the "Manual for Fabrication of Precast Prestressed Concrete Products." Two 3-1'' fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location. Cast-in-place substitution of Precast Bridge Approach Slab is not allowed.

- The top surface of precast bridge approach slabs shall be finished similar to precast prestressed deck beams with concrete wearing surface as specified in the IDOT "Manual for Fabrication of Precast Prestressed Concrete Products." Compressive strength of precast concrete, f'c shall be 5,000 psi. Compressive strength of precast concrete during initial lifting, f'ci shall be 5,000 psi.
**STUCTURE NO.**

**PRECAST BRIDGE APPROACH SLAB**

**BA-P-42FS-0**

**07-22-16**

---

### Beam Spacing

- **Interior Beam:**
  - 8 Spaces at 1'-6" = 12'-0"
  - 8 Spaces at 1'-6" = 12'-0"
  - 28 Spaces at 6" = 14'-0"

- **30'-0" End-to-end beam**

---

### Bar Spacing

- #4 D(E) bar spacing
- #5 S(E) bar spacing

---

### Notes

**FABRIC BEARING PAD**

- All bearing pads shall be 3" thick.
- Fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location. Cost included with Precast Bridge Approach Slab.
- Two 3" fabric adjusting shims of the dimensions of the exterior bearing pad shall be used to engage the lifting loops during handling.
- The top surface of precast bridge approach slabs shall be finished similar to Cast-in-place substitution of Precast Bridge Approach Slab is not allowed.
- The precast bridge approach slab shall be according to Section 504 of the Standard Specifications and shall be paid for at the contract unit price per square foot for Precast Bridge Approach Slab.
- A minimum 2 3/8" # lifting pin shall be used to engage the lifting loops during handling.
- Compressive strength of prestressed concrete, f′c shall be 6,000 psi.
- Compressive strength of prestressed concrete during initial lifting, f′ci shall be 5,000 psi.

---

### Exterior Beam

- 5' center full length, bottom
- #9 B (E) bars at 12' center full length, top
- #5 B (E) bars at 5' center full length, bottom
- #9 B (E) bars at 12' center full length, top

---

### Bar List

**Each Interior Beam**

<table>
<thead>
<tr>
<th>Bar</th>
<th>No.</th>
<th>Size</th>
<th>Length</th>
<th>Shape</th>
</tr>
</thead>
<tbody>
<tr>
<td>D(E)</td>
<td>#5</td>
<td>#5 D(E)</td>
<td>22'</td>
<td>#5 D(E)</td>
</tr>
<tr>
<td>S(E)</td>
<td>#5</td>
<td>#5 S(E)</td>
<td>32'</td>
<td>#5 S(E)</td>
</tr>
</tbody>
</table>

**Each Exterior Beam**

<table>
<thead>
<tr>
<th>Bar</th>
<th>No.</th>
<th>Size</th>
<th>Length</th>
<th>Shape</th>
</tr>
</thead>
<tbody>
<tr>
<td>B(E)</td>
<td>#5</td>
<td>#5 B(E)</td>
<td>58'</td>
<td>#5 B(E)</td>
</tr>
</tbody>
</table>

---

### Lifting Loop Detail

- 60° min. angle
- 3 3/8" radius
- 3" radius
- 3" radius
- 1" radius

---

### Compression Strands

- 3" Radius
- 3 3/8" Radius
- 1" Radius
- 3" Radius

---

**Notes:**

- Additional information on the lifting loop detail and handling is available from the manufacturer's recommendations.
- All bar information is for information only.

---

**STATE OF ILLINOIS**

**DEPARTMENT OF TRANSPORTATION**

**PRECAST BRIDGE APPROACH SLAB**

**STRUCTURE NO.**

**BA-P-42FS-0**

**COUNTY FED. AID PROJECT RT. DEPARTMENT**

**TOTAL SHEETS 3 SHEET**

---

**FILE NAME = USER NAME**

**PLOT SCALE = PLOT DATE = CHECKED = DRAWN = CHECKED = DESIGNED = REVISED = REVISED = REVISED = REVISED**
The Joint opening shall be adjusted for temperature per Article 520.03 of the Standard Specifications. However, since this detail is for jointless structures, the length of bridge used to calculate the adjustment shall be equal to half the total bridge length plus the length of the bridge approach pavement.

After precast bridge approach slabs have been erected, holes shall be drilled into abutment and anchor dowels placed. Dowel holes shall be fitted with non-shrink grout in lieu of prestress sleds and cured according to Article 1061.03 of the Standard Specifications for a minimum of 24 hours before casting the shear keys and wearing surface.

Any concrete poured monolithically with the wearing surface, such as curbs, shall not be paid for separately, but will be included in the cost of Concrete Wearing Surface. The strip seal and shall be made continuous and shall have a minimum thickness of 0.5". The strip seal shall extend 4" beyond the sides of the approach slab on each end. The configuration of the strip seal shall match the configuration of the Locking Edge Rail. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a minimum netted width of 4 inches. The Locking Edge Rail depicted are conceptual only, except for the minimum dimensions shown. The actual configuration of the Locking Edge Rail and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed. Locking Edge Rails may be applied at slope discontinuities and stage construction joints.

The manufacturer's recommended installation methods shall be followed. All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications. Minimum spacing between roll segments of slat-type rails shall be 3/4" sealed with a suitable sealant. Joints in rails within 50 ft. of curbs shall be water, Parapet concrete shall be paid for as Concrete Structures.

Approach footing concrete shall be paid for as Concrete Superstructure. The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.

Notes:
- The Joint opening shall be adjusted for temperature per Article 520.03 of the Standard Specifications. However, since this detail is for jointless structures, the length of bridge used to calculate the adjustment shall be equal to half the total bridge length plus the length of the bridge approach pavement.
- After precast bridge approach slabs have been erected, holes shall be drilled into abutment and anchor dowels placed. Dowel holes shall be fitted with non-shrink grout in lieu of prestress sleds and cured according to Article 1061.03 of the Standard Specifications for a minimum of 24 hours before casting the shear keys and wearing surface.
- Any concrete poured monolithically with the wearing surface, such as curbs, shall not be paid for separately, but will be included in the cost of Concrete Wearing Surface. The strip seal and shall be made continuous and shall have a minimum thickness of 0.5". The strip seal shall extend 4" beyond the sides of the approach slab on each end. The configuration of the strip seal shall match the configuration of the Locking Edge Rail. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a minimum netted width of 4 inches. The Locking Edge Rail depicted are conceptual only, except for the minimum dimensions shown. The actual configuration of the Locking Edge Rail and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed. Locking Edge Rails may be applied at slope discontinuities and stage construction joints.
- The manufacturer's recommended installation methods shall be followed. All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications. Minimum spacing between roll segments of slat-type rails shall be 3/4" sealed with a suitable sealant. Joints in rails within 50 ft. of curbs shall be water, Parapet concrete shall be paid for as Concrete Structures.
- Approach footing concrete shall be paid for as Concrete Superstructure. The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.

For Greater Guidelines For Structures and drainage treatment details, see sheet of
PLAN

A

A

3'-0''

7'-0''

10'-0''

Approach Footing

Typ.

5'-0''

See Roadway Plans

For pavement connector

7-0''

3'-0''

Near Abutment

Cross Section

E Roadway

Near Abutment

Cross Section

(looking )

Approach Footing

Typ.

5'-0''

10'-0''

8'-0''

2'-0''

12'-0''

2'-0''

Wingwall

-'' typ.

* Preformed Expansion Joint Filler according to Article 103.09 of the Standard Specifications, full depth of slab, full length of parapet. Typ. each parapet.

-#5 a(E) bars at 6'' cts. Top of slab
-#5 a(E) bars at 8'' cts. Top of slab
-#4 a(E) bars at 6'' cts. Bottom of slab
-#5 a(E) bars at 8'' cts. Bottom of slab

2'-6''

2'-0''

9'-0''

11'-0''

2'-0''

13'-0''

5'-0''

8'-0''

3'-0''

12'-0''

2'-0''

9'-0''

11'-0''

2'-0''

-#4 b(E) bars at 5'' cts. Bottom of slab
-#5 b(E) bars at 8'' cts. Top of slab

1'-0''

1'-9''

2'-0''

13'-0''

6''

8''

Wedge

Elev. - (- Approach)

~ Roadway

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**INSIDE ELEVATION OF PARAPET AND CURB**

**SECTION A-A**

* 10 mil Polyethylene bond breaker on steel trowel finish

**SECTION B-B**

* Expansion Joint. See Special Provisions

**DETAIL A**

* Cost included with Concrete Superstructure (Approach Slab).

**Per manufacturer recommendations**

Notes:
- Approach slab shall be paid for as Concrete Superstructure (Approach Slab).
- Approach footing concrete shall be paid for as Concrete Structure.
- The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
- Cost of excavation for approach footing included with Concrete Structures.
- For Greater Backfill for Structures and drainage treatment details, see sheet .
STANDARD BAR SPICER ASSEMBLY

Threaded splicer bar length = min. lap length + 1½" + thread length

* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

<table>
<thead>
<tr>
<th>Location</th>
<th>Bar size</th>
<th>No. assemblies required</th>
<th>Minimum lap length</th>
</tr>
</thead>
</table>

STANDARD MECHANICAL SPICER

INSTALLATION AND SETTING METHODS

"A" : Set bar splicer assembly by means of a template bolt.
"B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.
"C" : Epoxy coated splicer coating.

NOTES

Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.
All reinforcement shall be lapped and tied to the splicer bars.
Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.
See approved list of bar splicer assemblies and mechanical splicers for alternatives.
All cast iron parts shall be gray iron conforming to the requirements of AASHTO M 232, Class 35B.

Bolts, anchor studs, washers and nuts shall conform to the requirements of ASTM A 307 and shall be galvanized according to AASHTO M 331.

Drains located on the exterior side of a painted steel fascia beam shall be painted with the finish coat specified for the exterior side of the fascia beam.

As an alternative, bolts, anchor studs, washers and nuts may be stainless steel according to Article 305.6.2(a) of the Standard Specifications.

Structural steel weldments of equal sections and of the same configuration may be substituted for the cast iron downspout frames. Full welds of full penetration welds shall be used for the weldments. Details shall be submitted to the Engineer for approval. Structural steel weldments shall not be substituted for the cast iron downspout grates. Structural steel weldments and downspouts shall be galvanized according to AASHTO M30.

The Contractor shall take appropriate measures to assure that protective coat is not applied to the downspout.

Cost of the grate, frame, downspout, anchor studs, bolts, washers and nuts including complete installation of the scupper shall be paid for at the contract unit price each for drainage spout. DS-11.

Alternate fiberglass downspout conforming to ASTM C 2996 with a short-time rupture strength hoop tensile stress of 30,000 psi may be used in lieu of the cast iron or steel equivalent.
See sheet C for scupper location relative to parapet.
**BILL OF MATERIAL**

**ITEM** | **UNIT** | **QUANTITY**
--- | --- | ---
Drainage Scupper, DS-12M10 | Each | 1'-4''

**NOTES:**
- All cast iron parts shall be gray iron conforming to the requirements of AASHTO M 232, Class 350.
- Bolts, anchor studs, washers and nuts shall conform to the requirements of ASTM A 307 and shall be galvanized according to AASHTO M 230.
- All coatings shall conform to the requirements of AASHTO M 336.
- Downspouts located on the exterior side of a painted steel fascia beam shall be painted with the finish coat specified for the exterior side of the fascia beam.
- As an alternative, bolts, anchor studs, washers and nuts may be stainless steel according to Article 106.4.1.6 of the State Standards Specifications.
- Structural steel weldments of equal sections and of the same configuration may be substituted for the cast iron scupper frame. Fillet or full penetration welds shall not be used for the weldments. Details shall be submitted to the Engineer for approval. Structural steel weldments shall not be substituted for the cast iron scupper frame. Structural steel weldments shall be galvanized according to AASHTO M 232. The Contractor shall take appropriate measures to assure that protective paint is not applied to the weldments.
- Cast of the Grate, Frame, Downspout, Anchor Studs, Bolts, Washers and Nuts including complete installation of the scupper shall be paid for at the contract unit price each for Drainage Scupper, DS-12M10.
- As an alternative, bolts, anchor studs, washers and nuts may be stainless steel according to Article 1006.29(d) of the Standard Specifications.
- The Contractor shall take appropriate measures to assure that protective coat is not applied to the scupper frame. Cast of the Grate, Frame, Downspout, Anchor Studs, Bolts, Washers and Nuts including complete installation of the scupper shall be paid for at the contract unit price each for Drainage Scupper, DS-12M10.
- Alternate fiberglass downspout conforming to ASTM D 2996 with a short-time rupture strength hoop tensile stress of 30,000 psi min. may be used in lieu of the cast iron or steel equivalent.

**STATE OF ILLINOIS**
DEPARTMENT OF TRANSPORTATION
DRAINAGE SCUPPER, DS-12M10
STRUCTURE NO.

**FILE NAME**

**DREW BY**

**CHECKED BY**

**REVISED**

**DEPARTMENT OF TRANSPORTATION**
STATE OF ILLINOIS

**F.A.**
RTE.
SECTION
COUNTY
CONTRACT NO.
8 holes on an 8" bolt circle
diameter bolt circle

Drill and tap 8 holes for typ.

See sheet of for scupper location relative to parapet.

Cost of the Grate, Frame, Downspout, Anchor Studs, Bolts, Washers and Nuts including complete installation of the scupper shall be paid for at the contract unit price each for Drainage Scupper, DS-33.

Alternate fiberglass downspout conforming to ASTM D 2996 with a short-time rupture strength hoop tensile stress of 3500 psi min. may be used in lieu of the cast iron or steel equivalent.
DIAPHRAGM ELEVATION AT ABUTMENT

Each End
-#5 s(E) bars
-#6 m(E) bars, typ.

Back Face
Steel Placer
Concrete
Elastomeric neoprene
leveling pad

Front Face, typ. between beams
-#6 m(E) bars at 1'-0" cts.

Notes:
1. Reinforcement bars in diaphragm are billed with superstructure on sheet of.
2. Concrete in diaphragm is included with Concrete Superstructure on sheet of.
3. For details of bars s(E), s(E) and v(E) see sheet of.
4. The approach slab seat shall have a constant slope determined from the control points shown.

PARTIAL PLAN AT ABUTMENT
(Shewing bottom forms of beams)
PARTIAL PLAN AT ABUTMENT

DIAPHRAGM ELEVATION AT ABUTMENT

SECTION A-A

SECTION B-B

PARTIAL PLAN AT ABUTMENT

Notes:
Reinforcement bars in diaphragm are billed with superstructure on sheet of .
Concrete in diaphragm is included with Concrete Superstructure on sheet of .
For details of bars v(E), a(E) and v(E), see sheet of .
The v(E) and a(E) bars shall be placed parallel to the beams.
Spacing for these bars shall be at right angles to the beams.
The approach slab seat shall have a constant slope determined from the control points shown.
For bearing details see sheet of .
DIAPHRAGM ELEVATION AT ABUTMENT

SECTION A-A

DIAPHRAGM DETAILS

Each End
-#5 s(E) bars behind beam

-#6 m(E) bars, typ.

Front Face, typ. between beams
-#5 s(E) bars at 1'-0'' cts.,

Steel rocker with elastomeric
leveling pad

-#6 m(E) bars at 1'-0'' cts.,

SECTION B-B

Construction joint

Approach slab seat

Concrete in diaphragm is included with Concrete Superstructure
sheet of .

Reinforcement bars in diaphragm are billed with superstructure on
sheet of .

Notes:

Concrete in diaphragm is included with Concrete Superstructure
sheet of .

For details of bars s(E), s(E) and v(E) see sheet of .

Spacing for these bars shall be at right angles to the beams.

The approach slab seat shall have a constant slope determined from
the control points shown.

For bearing details see sheet of .
DIAPHRAGM ELEVATION AT ABUTMENT

DIAPHRAGM DETAILS

Each End

-#4 s (E) bars behind beam
-#6 m(E) bars at 1'-0'' cts., typ. between beams

Front Face, typ. between beams

-#6 m(E) bars at 1'-0'' cts., typ. between beams

DIAPHRAGM ELEVATION AT ABUTMENT

SECTION A-A

PARTIAL PLAN AT ABUTMENT

(Showing section Flange of Beam)

Back of Beam

Steel Rocker

Elastomeric neoprene

leveling pad

Notes:

- Reinforcement bars in diaphragm are billed with superstructure on sheet of .

- Concrete in diaphragm is billed with Concrete Superstructure on sheet of .

For details of bars s(E), s(E) and v(E) see sheet of .

- The approach slab seat shall have a constant slope determined from the control points shown.

- For bearing detail see sheet of .

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DIAPHRAGM DETAILS

STRUCTURE NO.
PARTIAL PLAN AT ABUTMENT

DIAPHRAGM ELEVATION AT ABUTMENT

SECTION A-A

SECTION B-B

Notes:
1. Reinforcement bars in diaphragm are billed with superstructure on sheet of.
2. Concrete in diaphragm is included with Concrete Superstructure on sheet of.
3. For details of bars of (E), (E) and (E), see sheet of.
4. The (E) and (E) bars shall be placed parallel to the beams. Spacing of these bars shall be at right angles to the beams.
5. The approach slab seat shall have a constant slope determined from the control points shown.
6. Notes for bearing details see sheet of.
DIAPHRAGM ELEVATION AT ABUTMENT

SECTION A-A

DIAPHRAGM DETAILS

Each End

1'-0'' cts., typ.

-#5 s(E) bars

-#5 m(E) bars

(Fixed bolt with bridge deck joint washer and nut)

See Special Provisions.

2'' Chamfer


DIVIDED JCT.

3'' x 3'' Formed joint with bridge deck joint sealer (full

1'-0'' cts., typ.

APPLICATION POINTS

Concrete in diaphragm is included with Concrete Superstructure on sheet of .

Reinforcement bars in diaphragm are billed with superstructure on sheet of .

Concrete in diaphragm is bolted with Concrete Superstructure on sheet of .

Spacing for these bars shall be at right angles to the beams.

Steel rocker with elastomeric

SECTION B-B

Approach slab seat shall have a constant slope determined from

the control points shown.

Construction joint during pouring of the concrete.)

they remain centered and level

during placing of the concrete.

Steel Rocker

leveling pad

Notes:

Concrete in diaphragm is included with Concrete Superstructure on sheet of .

For details of bars s(E), s(E) and v(E) see sheet of .

Spacing for these bars shall be at right angles to the beams.

Concrete in diaphragm is bolted with Concrete Superstructure on sheet of .

Reinforcement bars in diaforaphm are billed with superstructure on sheet of .
<table>
<thead>
<tr>
<th>Location</th>
<th>Station</th>
<th>Offset</th>
<th>Theoretical Grade Elevations</th>
<th>Theoretical Grade Elevations Adjusted For Grinding</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</table>

PLAN

FILE NAME = USER NAME

PLOT SCALE = PLOT DATE = CHECKED = DRAWN = CHECKED = DESIGNED = REVISED = REVISED = REVISED =

DEPARTMENT OF TRANSPORTATION
STATE OF ILLINOIS
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF APPROACH SLAB ELEVATIONS
STRUCTURE NO.

F.A. RTE. SECTION
COUNTY
TOTAL SHEETS SHEET NO.
Preformed Joint Strip Seal

Notes:
- The strip seal shall be made continuous and shall have a minimum thickness of 0.5". The configuration of the strip seal shall match the configuration of the Locking Edge Rails. Open or "webbed" strip seal configurations are not permitted. The strip seal shall be sized for a maximum permitted movement of 4". Required modifications shall be made at no additional cost to the State.
- The strip seal shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications. All steel components shall be galvanized according to the dimensions detailed on this sheet.
- The manufacturer’s recommended installation methods shall be followed. The number of bolts is based on a rolled rail expansion joint. The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. The gland shall be sized for a maximum permitted movement of 4". Required modifications shall be made at no additional cost to the State.
- Prefabricated joint strip seal shall be free of weld residue. Rolled rail shown, welded rail section.
- TYPICAL END TREATMENT AT SIDEWALK OR MEDIAN
- Parapet plates and anchorage studs for skews > 30° of curbs shall be welded. The manufacturer’s recommended installation methods shall be followed. The number of bolts is based on a rolled rail expansion joint. The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. The gland shall be sized for a maximum permitted movement of 4". Required modifications shall be made at no additional cost to the State.
- Prefabricated joint strip seal shall be free of weld residue. Rolled rail shown, welded rail section.

Bill of Material

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

State of Illinois
Department of Transportation

Structure No.

Preformed Joint Strip Seal

Contract No.

SHEETS

<table>
<thead>
<tr>
<th>SHEET</th>
<th>SCALE</th>
<th>COUNTY</th>
</tr>
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<tbody>
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DEPARTMENT OF TRANSPORTATION

ILLINOIS
dead load deflection diagram

(includes weight of concrete only)

Note: The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown below.

To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown below. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown below, minus slab thickness, equals the fillet heights "t" above top flange of beams.

FILLET HEIGHTS

<table>
<thead>
<tr>
<th>Location</th>
<th>Station</th>
<th>Offset</th>
<th>Theoretical Grade Elevations</th>
<th>Theoretical Grade Elevations Adjusted For Dead Load Deflection</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

The above elevations are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown below.
Note:
The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections and grinding as shown below.
**ELEVATION AT ABUT.**

**SECTION A-A**

Bearing Assembly

**SECTION B-B**

**BEARING ASSEMBLY**

- Layers of "" Elastomer
- " Steel Plates

**SIDERETAINER**

Equivalent rolled angles with stiffeners will be shown in lieu of welded plates.

**BILL OF MATERIAL**

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<tr>
<th>Item</th>
<th>Unit</th>
<th>Total</th>
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<tbody>
<tr>
<td>Bearing Assembly</td>
<td>Each</td>
<td></td>
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</tbody>
</table>

Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material of the grade(s) and diameter(s) specified). The corresponding specified grade of ASTM F1554 anchor bolts may be used in lieu of ASTM F2054.

Side retainers and other steel members required for the elastomeric bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type I.

Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material of the grade(s) and diameter(s) specified). The corresponding specified grade of ASTM F1554 anchor bolts may be used in lieu of ASTM F2054.

Anchor bolts shall be installed as each member is erected unless an equivalent temporary means of lateral restraint is used.

Beams shall be braced for stability during erection and remain braced until deck is poured and cured.

Anchor bolts and side retainers at all supports shall be installed as each member is erected unless an equivalent temporary means of lateral restraint is used.

**NOTES:**

- Anchor bolts shall not be placed under Bearing Assembly.

**FILE NAME =**

**STATE OF ILLINOIS**

**DEPARTMENT OF TRANSPORTATION**

**STATE OF ILLINOIS**

**DEPARTMENT OF TRANSPORTATION**

**BILL OF MATERIAL**

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</thead>
<tbody>
<tr>
<td>Bearing Assembly</td>
<td>Each</td>
<td></td>
</tr>
</tbody>
</table>

**ANCHOR BOLTS**

(If necessary) Adjusting Shim

(If necessary) Adjusting Shim
Assembly Type II
Elastomeric Bearing

**I-2E-2**

**BELOW 50°F.**

**ABOVE 50°F.**

**BILL OF MATERIAL**

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<tr>
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<tbody>
<tr>
<td>Top Brg.</td>
<td>Each</td>
<td></td>
</tr>
<tr>
<td>Bott. Brg.</td>
<td>Each</td>
<td></td>
</tr>
</tbody>
</table>

**EXPANSION BEARING ORIENTATION**

The above diagrams are for informational purposes only to show the amount of expected offset "D" for the current temperature in the field.

**EXPANSION BEARING ORIENTATION**

The above diagrams are for informational purposes only to show the amount of expected offset "D" for the current temperature in the field.
**ELEVATION AT ABUT.**

**SECTION A-A**

**TOP BEARING ASSEMBLY**

- 2" Holes in Bott. Flange
- 1/4" # Threads Stud with Flat washer & hex. nut.
- 1/4" Hex. Nuts
- 1/4" PTFE Surface
- 1/4" Stainless Steel
- 1/4" Bonded PTFE with dimpled, undrilled surface
- 1/4" Steel Plates
- 1/4" # Holes for Anchor bolts

**BOTTOM BEARING ASSEMBLY**

- 1/4" Top Bear. Pintle
- Side Retainer
- Bonded elastomer with stiffeners will be allowed in lieu of welded plates.

**SECTION THROUGH PTFE**

**ELEVATION AT PIER**

**SECTION B-B**

**FIXED BEARING**

**PLAN-PTFE ELASTOMERIC BRG.**

- Pintle

**EXPANSION BEARING ORIENTATION**

The above diagrams are for informational purposes only to show the amount of expected offset "D" for the current temperature in the field.

**BILL OF MATERIAL**

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<tr>
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<td></td>
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<tr>
<td>1&quot;</td>
<td>Each</td>
<td></td>
</tr>
</tbody>
</table>
shall be placed directly above the studs of the rail post anchor device.

** The studs of the anchor devices shall be placed below the top of the Standard Specifications.

Notes:

- For multi-span bridges, sufficient **1/4" x 6"** to **2"** galvanized steel angles shall be provided to align rails between adjacent spans. Cast-in-place with Steel Railing Type TP-1.
- All steel elements shall be galvanized according to Article 509.05 of the Standard Specifications.
- The stud of the anchor devices shall be placed below the top of the rail. The steel and the internal longitudinal reinforcement shall be placed directly above the stud of the rail post anchor device.

*Threaded areas shall be plugged or blocked off during casting of beam.*

<table>
<thead>
<tr>
<th>**DETAIL OF **1/2&quot; <strong>&amp;</strong> 3/4&quot; <strong>ROUND HEAD BOLTS</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1&quot;) <strong>H.S. NUT RASIED</strong></td>
</tr>
<tr>
<td>2&quot;) <strong>Holes in Angle</strong></td>
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<tr>
<td><strong>Top of Stud</strong></td>
</tr>
<tr>
<td><strong>Drilled 1/2&quot; Holes</strong></td>
</tr>
<tr>
<td><strong>6 x 4 x 3/4&quot; H.S. Nuts</strong></td>
</tr>
<tr>
<td><strong>.Top Anchor Device</strong></td>
</tr>
</tbody>
</table>

**BOTTOM ANCHOR DEVICE**

| **1" Round bar stock AASHTO M60.00 G50 or** |
| **1" Round bar stock AASHTO M60.00 G50 or** |
| **Top Anchor Device** |
| **1" Round bar stock AASHTO M60.00 G50 or** |
| **Top Anchor Device** |

**BILL OF MATERIAL**

<table>
<thead>
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<th><strong>Item</strong></th>
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<td><strong>PLOT DATE</strong></td>
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<td><strong>1</strong></td>
<td><strong>SECTION A-A</strong></td>
<td><strong>SECTION B-B</strong></td>
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</table>

**RAIL SPLICE CONNECTION**

<table>
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<tr>
<th><strong>END OF RAIL DETAILS</strong></th>
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</thead>
<tbody>
<tr>
<td><strong>TOP RAIL</strong></td>
</tr>
<tr>
<td><strong>BOTTOM RAIL</strong></td>
</tr>
<tr>
<td><strong>SECTION AT RAIL POST</strong></td>
</tr>
</tbody>
</table>

<p>| <strong>BILL OF MATERIAL</strong> |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|</p>
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</tr>
</thead>
<tbody>
<tr>
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<td><strong>BOLTS</strong></td>
</tr>
<tr>
<td><strong>1</strong></td>
<td><strong>LOCKNUT</strong></td>
<td><strong>FLAT WASHERS</strong></td>
</tr>
<tr>
<td><strong>1</strong></td>
<td><strong>TYPICAL</strong></td>
<td><strong>TOP RAIL</strong></td>
</tr>
<tr>
<td><strong>1</strong></td>
<td><strong>TYPICAL</strong></td>
<td><strong>BOTTOM RAIL</strong></td>
</tr>
<tr>
<td><strong>1</strong></td>
<td><strong>TYPICAL</strong></td>
<td><strong>SECTIONS AT RAIL SPLICE</strong></td>
</tr>
</tbody>
</table>
When "A" is 3'-1'' or less, the temporary concrete barrier shall be restrained to the new slab according to Detail I, II or III. No restraint is required when "A" is greater than 3'-1''.

**NEW SLAB OR NEW DECK BEAM**

**EXISTING SLAB**

**EXISTING DECK BEAM**

**SECTIONS THRU SLAB OR DECK BEAM**

**Temporary Concrete Barrier**

When hot-mix asphalt wearing surface is present, restraint shall be 3'' plus the wearing surface depth.

**Stage construction line**

**Stage removal line**

**RESTRINGING PIN**

**Top Bar Splicers**

**Steel Retainer**

**Steel Retainer & #4 Bar - Detail III**

**Bar Splicer for #4 Bar - Detail III**

**Notes:**

- Cost of retainer assembly is included with Temporary Concrete Barrier. A retainer assembly shall be located at the approximate center of each temporary concrete barrier.
- The retainer plate shall not be removed until the concrete on the adjacent stage is ready to be poured. For Detail III applications the retaining plate shall not be removed until just prior to placing the adjacent beam.
- When the "A" dimension is less than 3'-1'', the wood block shall be omitted and the barrier shall be placed in direct contact with the steel retainer plate.
- For deck beam applications the minimum required "A" distance is 3'' to accommodate the shear key clamping device.

**Detail I - Installation for a new bridge deck or bridge slab.**

**Detail II - Installation for a new deck beam with an initial concrete wearing surface.** Additional bar splicers shall be provided at 6'-0'' centers and paired with the bar splicers of the concrete wearing surface reinforcement to accommodate the installation of the retainer assemblies. The cost of the additional bar splicers is included with the concrete wearing surface.

**Detail III - Installation for a new deck beam with no initial wearing surface or with an initial hot-mix asphalt (HMA) wearing surface present.** The deck beam directly beneath the temporary concrete barrier shall be fabricated with bar splicer inserts in the slab of the beam, as detailed, to accommodate the installation of the retainer assemblies. A pair of bar splicers, 6'' apart, shall be placed at 6'-0'' centers along the length of the beam. The cost of the bar splicers is included with the deck beam.

**Concrete wearing surface**

**HMA wearing surface**

**Notes:**

- Cost of restraining pins are included with Temporary Concrete Barrier. No restraint is required when "A" is greater than 3'-1''.
- Drill 3-1/2'' holes in existing slab for 1'' restraint pins. Traffic side only.

**REFERENCES:**

- See Standard 704001
- See Detail I, II or III
- See Detail I, II or III
- See Detail I, II or III
- See Detail I, II or III
- See Detail I, II or III

**DETAILS:**

- DETAIL I
- DETAIL II
- DETAIL III
ANCHOR BOLT DETAILS

In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and setting 1/4" hex. bolts, according to Article 509.05 of the Standard Specifications. The designer shall add the appropriate note as applicable. A. When railing is galvanized: All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications. B. When railing is painted: All steel rail elements shall be painted using the (List the appropriate paint system for Structural Steel).

Only one of the above notes would appear on Contract Plans.

The designer should add the appropriate note as applicable.

A. When railing is galvanized:
All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.

B. When railing is painted:
All steel rail elements shall be painted using the (List the appropriate paint system for Structural Steel).

Only one of the above notes would appear on Contract Plans.
Steel Railing, Type 2399

Specifications, to Article 509.06 of the Standard Specifications.

Shims shall be similar to base plates in size and holes. Provide one " ‱" and two " ‰" steel shims for 25% of the posts. An expansion joint shall be provided between any expansion joint or end of bridge.

Posts shall not be located closer than 1'-3" to an existing bridge expansion joint or end of bridge. Steel Bridge Rail expansion joint shall be provided between any two 50' posts which span a bridge expansion joint. Holes located at expansion joint shall be provided with locknuts and shall be tightened only to a point that will allow normal movement.

Provide four " ‱" washers for 25% of the posts. Shims shall be similar in size and holes. All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.

Bill of Material

<table>
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<tr>
<th>Item</th>
<th>Unit</th>
<th>Quantity</th>
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END OF RAIL DETAILS

SECTION AT RAIL POST

SECTIONS AT RAIL SPLICE

PLAN-BOTT. SPLICE & TYPICAL

RAIL SPLICE CONNECTION AT EXPANSION JCT.

DEPARTMENT OF TRANSPORTATION

STATE OF ILLINOIS

FILE NAME

quantity

FILE NAME

81x432

Specifications.
The designer should add the appropriate note as applicable.

A. When railing is galvanized:

All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.

B. When railing is painted:

All steel rail elements shall be painted using the appropriate paint system for Structural Steel.

Only one of the above notes would appear on Contract Plans.

When railing is galvanized:

All post, railing, splices, anchor devices, and bolts shall be painted using the appropriate paint system for Structural Steel.

The designer should add the appropriate note as applicable.

A. When railing is galvanized:

All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.

B. When railing is painted:

All steel rail elements shall be painted using the appropriate paint system for Structural Steel.

Only one of the above notes would appear on Contract Plans.

When railing is painted:

When railing is galvanized:

All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.

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All steel rail elements shall be painted using the appropriate paint system for Structural Steel.

Only one of the above notes would appear on Contract Plans.
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STEEL RAILING, TYPE SM WITH CONCRETE WEARING SURFACE & CURB

BILLOF MATERIAL

---

**SECTION A-A**

**SECTION AT RAIL POST**

**RAIL SPlice CONNECTION AT Expansion Join**

**SECTION AT RAIL SPlice**

**ANCHOR DEVICE**

- Threaded areas shall be plugged or back off during coating of beam. Galvanized after fabrication.

**SPlice DIMENSIONS**

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<th>Item</th>
<th>Unit</th>
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**BILL OF MATERIAL**

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**STATE OF ILLINOIS**

**DEPARTMENT OF TRANSPORTATION**

**BILL OF MATERIAL**

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**SLotted holes**

**2'-10'' by 3" Slotted holes**

IN **Angles**

**2'-4'' by 3" Slotted holes**

IN **Post**

---

**DRAWN**

**CHECKED**

**DESIGNED**

**REVISED**

---

**VIEW E-E**

**PLAN-BOTT. SPLICE **

**TYPICAL**

---

**ILLINOIS**

**COUNTY**

**CONTRACT NO.**

---

**DEPARTMENT OF TRANSPORTATION**

**BILL OF MATERIAL**

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**STATE OF ILLINOIS**

**DEPARTMENT OF TRANSPORTATION**

**BILL OF MATERIAL**

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</table>
The designer shall provide additional joints in parapet (full height) as specified in Bridge Manual Figures 3.2.4-6 and 3.2.4-7.

All concrete for railing will be Class BS according to Article 1020.04, Surface of railing shall receive a rubbed finish according to Article 503.15(b) of the Standard Specifications. All parts of the railing including concrete and reinforcing will be paid for at the contract unit price per foot for Concrete Bridge Railing. Aluminum sheets shall be according to ASTM B209 alloy 3003-H14. Holes and recesses must be formed or cored. Drilling is not permitted.

Notes:
- All concrete for railing will be Class BS according to Article 1020.04 of the Standard Specifications. Surface of railing shall receive a rubbed finish according to Article 503.15(b) of the Standard Specifications.
- All parts of the railing including concrete and reinforcing will be paid for at the contract unit price per foot for Concrete Bridge Railing. Drilling is not permitted. Aluminum sheets shall be according to ASTM B209 alloy 3003-H14.

The developer shall provide additional joints in parapet (full height) as specified in Bridge Manual Figures 3.2.4-6 and 3.2.4-7.
Cost of Concrete Bridge Railing, Sidewalk Mounted.

 Bars e(E) thru e (E) and d (E) are included in the cost of Concrete Bridge Railing, Sidewalk Mounted.

All concrete for railing wall shall be Class BS according to Article 1020.04 of the Standard Specifications. Surface of railing shall receive a rubbed finish according to Article 503.15(b) of the Standard Specifications. Surface of railing shall receive a rubbed finish according to Article 503.15(b) of the Standard Specifications.

Aluminum sheets shall be according to ASTM B209 alloy 3003-H14. Holes and recesses must be formed or cored. Drilling is not permitted.

Notes:

- All concrete for railing wall shall be Class BS according to Article 1020.04 of the Standard Specifications. Surface of railing shall receive a rubbed finish according to Article 503.15(b) of the Standard Specifications. All parts of the railing including concrete and reinforcing will be paid for at the contract unit price per foot for Concrete Bridge Railing, Sidewalk Mounted. Railing shall be finished in parapet (full height) as specified in Bridge Manual Figures 3.2.4-6 and 3.2.4-7.

- Bars e(E) thru e (E) and d (E) are included in the cost of Concrete Bridge Railing, Sidewalk Mounted.

MIN. BAR LAP

- #7 bars = 5'-10"
- #5 bars = 3'-1"

TYPICAL REINFORCEMENT PLACEMENT

The designer shall place additional joints at points that height as specified in Bridge Manual Figures 3.2.4-6 and 3.2.4-7.
SECTION E-E

SECTION F-F (For span greater than 50'-0'')

FACE OF PARAPET

SECTION G-G

Top Plan

PIER PILASTER JOINT

SPAN PILASTER JOINT

ALUMINUM JOINT DETAILS

Item: No. Size Length

- ALUMINUM JOINT DETAILS

- SUPERSTRUCTURE

- BILL OF MATERIAL

- TOP PLAN

- BAR x(E)

- BAR y(E)

- BAR z(E)

- BAR d(E)

- WINDOW DETAIL

- SECTION

- APPROACH MOUNTED

- Structure Details

- Concrete Bridge Railing, Sidewalk Mounted

- PROJECT NO.

- SHEET NO.

- FILE NAME

- USER NAME

- PLOT SCALE

- PLOT DATE

- CHECKED

- DRAWN

- CHECKED

- DESIGNED

- REVISED

- DEPARTMENT OF TRANSPORTATION

- STATE OF ILLINOIS

- FEDERAL AID PROJECT

- COUNTY

- CONTRACT NO.

- TOTAL SHEETS

- SHEET NO.

- CONSTRUCTION

- DETAILS

- SUPERSTRUCTURE

- ROLL OF MATERIAL

- COST

- DESCRIPTION

- UNIT

- WEIGHT

- BARS INDICATED MUST MILL & STRUCTURAL BARS AS SHOWN ON SHEET 3 OF 5.
INSIDE ELEVATION OF RAILING
(Showing Dimensions)

MINIMUM BAR LAP
** bar = 2'-8"

INSIDE ELEVATION OF RAILING
(Showing Reinforcement)

Notes: Adjust reinforcement spacings as required to miss 1" x 2" formed holes.

The average weight of railing is 560 plf.

The state highway standard is 6(1930)

R-38
### Bill of Material

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<tbody>
<tr>
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**Notes:**
- All concrete for railings shall be Class BS according to Art. 1020.04 of the Standard Specifications. Surface of railings shall receive a rubbed finish according to Art. 503.15(b) of the Standard Specifications. All parts of the railing including concrete and reinforcing shall be paid for at the contract unit price per foot for Concrete Bridge Railing, TL-4. Hooks and recesses must be formed or cored. Drilling is not permitted.
- **d(E) bars included in Superstructure Bill of Material.**
- **d(E) bars included in Approach Bill of Material.**
- **3'-6'' when placed on sidewalk.

---

**Bar List**

<table>
<thead>
<tr>
<th>Bar</th>
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<td>Foot</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>BARS D(E)</td>
<td>2'' cl.</td>
<td>Foot</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>BAR E(E)</td>
<td>2'' cl.</td>
<td>Foot</td>
<td>100</td>
<td></td>
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</table>

**Location Detail**

- Inside face of railing

**Typical Reveal Detail**

- Inside face of railing

**Section Details**

- **Section A-A**
- **Section B-B**
- **Section C-C**
- **Section D-D**
- **Section E-E**

**RAILING JOINT DETAILS**

- Non-staining gray one-component non-sag elastomeric, two-grade polyurethane sealant meeting the requirements of ASTM C-920, Type S, Grade NS, Class 25, shall be used. Non-staining gray one-component non-sag elastomeric shall be used.
- All parts of the railing including concrete and reinforcing shall be paid for at the contract unit price per foot for Concrete Bridge Railing, TL-4. Hooks and recesses must be formed or cored. Drilling is not permitted.
- **d(E) bars included in Superstructure Bill of Material.**
- **d(E) bars included in Approach Bill of Material.**
- **3'-6'' when placed on sidewalk.

---

**Two Railings**

(For information only)

---

**Structure No.**

Concrete Bridge Railing, TL-4
OUTSIDE ELEVATION OF PARAPET

RAIL SPLICE ELEVATION

SECTION A-A

BILL OF MATERIAL
* Order d(E) & a(E) bars full length.  
Cut to fit skew and use remainder of bars in opposite end.  

MINIMUM BAR LAP  
#5 bar = 3'-6''

PLAN  
out to out deck  

Fence to type parapets  

CROSS SECTION  
(Looking )
MINIMUM BAR LAP
#5 bar = 3'-6"

PLAN

MINIMUM BAR LAP
#5 bar = 3'-6"

CROSS SECTION
(looking )
MINIMUM BAR LAP
\#5 bar = 3'-6"

PLAN

out to cut deck

FACE to TOP parapets

slope = per ft.

slope = per ft.

slope = per ft.

slope = per ft.

Total drop =

CROSS SECTION

(looking )

S-1-R(>30°)

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE

STRUCTURE NO.

FILE NAME

USER NAME

PLOT SCALE

PLOT DATE

CHECKED

DRAWN

CHECKED

DESIGNED

REVISED

REVISED

REVISED

REVISED

DEPARTMENT OF TRANSPORTATION

STATE OF ILLINOIS

F.A. RTE.

SECTION

FED. AID PROJECT

CONTRACT NO.

TOTAL SHEETS

SHEET NO.

50° F.

" at Abut.

50° F.

" at Abut.

Cut to fit skew and use remainder of bars in opposite end.

Order \#11 & \#12 bars full length.

See sheet of for superstructure details and dimensions.

Bars indicated thus 20 x 3-\#5 etc. indicates 20 lines of bars with 3 lengths per line.

See sheet of for parapet reinforcement.

See Sheet of for parapet reinforcement.

Bars indicated thus 20 x 3-\#5 etc. indicates 20 lines of bars with 3 lengths per line.

See Sheet of for superstructure details and dimensions.

Bars indicated thus 20 x 3-\#5 etc. indicates 20 lines of bars with 3 lengths per line.

See Sheet of for superstructure details and dimensions.

Bars indicated thus 20 x 3-\#5 etc. indicates 20 lines of bars with 3 lengths per line.

See Sheet of for superstructure details and dimensions.

Bars indicated thus 20 x 3-\#5 etc. indicates 20 lines of bars with 3 lengths per line.

See Sheet of for superstructure details and dimensions.

Bars indicated thus 20 x 3-\#5 etc. indicates 20 lines of bars with 3 lengths per line.
**PLAN**

- Out to out deck
- Face to face parapets
- Slope ° per ft.
- Slope ° per ft.
- Slope ° per ft.
- Slope ° per ft.
- Total drop =

**MINIMUM BAR LAP**

- #5 bar = 3'-6"

**CROSS SECTION**

(looking )

N.B.: See Sheet of for superstructure details
and Bill of Material.
See Sheet of for parapet reinforcement.
MINIMUM BAR LAP
-#5 bar = 3'-6"

PARTIAL PLAN

MINIMUM BAR LAP
-#5 bar = 3'-6"

FACE TO FACE PARAPETS

SLOPE " per ft.

CROSS SECTION

S-2-0
**Notes:**
- See Sheet # for superstructure details and Bill of Material.
- Bars indicated thus 20 x 3-#5 etc., indicates 20 lines of bars with 3 lengths per line.
- See Sheet # for parapet reinforcement.

**MINIMUM BAR LAP**

- #5 bar = 3'-6"
**MINIMUM BAR LAP**
- #5 bar, 3'-6''

**PARTIAL PLAN**
- Out to out deck
- Face to face parapets

**CROSS SECTION**
- Near Pier
- Near Midspan

**Note:**
- Sheet 20 of 30 for superstructure details and Bill of Material.
- Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line. See Sheet 20 for parapet reinforcement.
**MINIMUM BAR LAP**

- #5 bar = 3'-6"

**PARTIAL PLAN**

- Cut to cut deck

**FACE TO FACE PARAPETS**

- Slope ° per ft.

**CROSS SECTION**

- Slope ° per ft.

- Top of slab

- Total drop =

**NEAR PIER**

- Typical between beams

**NEAR MIDSPAN**

- See Sheet of for superstructure details

- See Sheet of for parapet reinforcement.

- Cut to fit skew and use remainder of bars in opposite end.

- Aluminum sheeted construction joints in base of parapet.

- Order #6 & #5(E) bars full length.

- Bars indicated thus 20 x 3-#5 bars indicates 20 lines of bars with 3 lengths per line.

- See Sheet of for parapet reinforcement.

**MINIMUM BAR LAP**

- #5 bar = 3'-6"

**PLOT SCALE**

- User Name = 

- Plot Date = 

- Checked =

- Drawn =

**DEPARTMENT OF TRANSPORTATION**

- State of Illinois

**SUPERSTRUCTURE STRUCTURE NO.**

- Contract No.

- Total Sheets

- Sheet No.
S-2-R(<30°)

End to end deck

Pier joints in base of parapet

Aluminum sheeted construction

Notes:
- Out to out deck
- Face to face parapets
- Slope " per ft.

Minimum Bar Lap
- #5 bar = 3'-6"

Part of bars in opposite end.
Cut to fit skew and use remainder of bars in opposite end.

Cross Section

Skew °

Part of plan

State of Illinois
Department of Transportation

Superstructure Structure No.

File Name =
User Name =
Plot Scale =
Plot Date =
Checked =
Drawn =
Checked =
Designed =
Revised =
Revised =
Revised =
Revised =

Debt of Transportation
State of Illinois

Federal Aid Project

Total Sheaths

Sheets

Contract No.

Section

County

Road of Approach

Top of slab

Top of slab

Top of slab

#5 x (E) bars at 12" cts.

Bottom between beams.

#6 a(E) bars at 12" cts.

Top of slab over pier

#5 x a(E) bars equally spaced at 12"

top of slab

#6 a(E) bars at 12" cts.

#5 x a(E) bars spaced as shown in cross section.

Bottom of slab

3 x -#5 b(E) bars

Top of slab

2-#6 b (E) bars

Cross section.

Bottom between beams.

3-#5 b(E) bars

Top of slab

2-#6 b (E) bars

Total drop =

Typ. between beams

#5 bar = 3'-6"

#6 bar = 3'-6"

#5 bar = 3'-6"

#6 bar = 3'-6"

6-8-15

6-8-15

Notes:
- See Sheet of for superstructure details and Bill of Material.
- Bars indicated thus 20 x 3-#5 etc. Indicates 20 lines of bars with 3 lengths per line.
- See Sheet of for parapet reinforcement.
PARTIAL PLAN

Notes:
See sheet and for h(E), h(E) and s(E) bars.

BAR s(E)

BAR s(E)

BAR s(E)

BAR v (E)

SA-1D-R

FILE NAME = USER NAME = PLOT SCALE = PLOT DATE = CHECKED = DRAWN = CHECKED = DESIGNED = REVISED = REVISED = REVISED = DEPARTMENT OF TRANSPORTATION

STATE OF ILLINOIS

VAULTED ABUTMENT APPROACH SPAN DETAILS

STRUCTURE NO.

TWO APPROACH SLABS

BILL OF MATERIAL

<table>
<thead>
<tr>
<th>Bar No.</th>
<th>Size</th>
<th>Length</th>
<th>Shape</th>
</tr>
</thead>
<tbody>
<tr>
<td>#6</td>
<td>6'-0&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#5</td>
<td>5'-7&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#4</td>
<td>4'-0&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#6</td>
<td>6'-0&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#4</td>
<td>4'-0&quot;</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

threaded dowel rods 2'-6" x 3" Ferrule inserts for 2'-6" x 3" threaded dowel rods

For location of m(E), m(E), m(E), and m(E) bars see Section A-A on sheet of .

For location of m(E), m(E), m(E), and m(E) bars see Section B-B on sheet of .

Fabric Brg. Pad 6" x 3" x 2'-0"

Full width 1'-#6 m(E)

Full width 2'-#4 m(E)

For location of m(E), m(E), m(E), and m(E) bars see Section A-A on sheet of .

For location of m(E), m(E), m(E), and m(E) bars see Section B-B on sheet of .

Notes:

BAR d(E)

BAR d(E)

BAR d(E)
Inside Elevation of Parapet

- Shear a(E) and a(E) bars full length. Cut to fit skew and use remainder of bars in opposite end.

Plan

Notes: See sheets and of for v(E)

Orthogonal section and weather

1" & Anchor Bolt

Section thru Parapet

For details of expansion joint see sheet - of -.

Section A-A

1" & Anchor Bolt

Start inclusive with Concrete Superstructure.

View C-C

Inside Elevation of Parapet

- #5 d(E) bars at 11" cts.

Plan

- #5 d(E) bars at 11" cts.

Notes: See sheets and of for v(E)

Cross Section

See thru v(E) bars.

State of Illinois

Department of Transportation

Vaulted Abutment Approach Span

Structure No.
When cantilever forming brackets are used, the work shall be done according to Article 503.06(b) of the Standard Specifications, except as modified below and in the details shown on this sheet.

The finishing machine rails shall be placed on the top flanges of the exterior beams.

The beams or girders, supporting cantilever forming brackets, shall be tied together at 4 foot intervals.

For Standard construction, or Stage Construction the Hardwood bracing materials shall be placed as shown between webs of beams in each bay.
GENERAL NOTES

All dimensions shall remain the same as shown on superstructure details, except dimensions A and B which are to be revised as shown to provide additional clearance. Additional concrete needed to
increase dimension A and B = 0.0165 cu. yds./ft. for 34" parapet or 0.0223 cu. yds./ft. for 42" parapet.

Place aluminum sheet in curb portion of each superstructure detail. Full thickness saw cut at all joint locations in lieu of cork joint filler.

Steel superstructure shown. Other superstructure types similar.

SECTION

(34" parapet shown = 42" parapet similar)

(Showing reinforcement clearances for slip forming and additional reinforcement bars)

42" F SHAPE PARAPET SECTION

(Showing dimensions)

34" F SHAPE PARAPET SECTION

(Showing dimensions)

ALTERNATE BAR d(E)

(For 34" parapet when conduit is present)

ALTERNATE BAR d(E)

(For 42" parapet when conduit is present)

GFRP REBAR STIFFENING DETAIL

(Place as shown in parapet section of each parapet joint location.)
MINIMUM BAR LAP
#5 bar = 3'-0"

PLAN

out to out deck

Face to face parapets

CROSS SECTION
(Looking )
Order all #5 and #6 bars full length.
Cut to fit skew and use remainder of bars in opposite end.

- #5 d(E) bars at 10'-0" cts.
- #5 d(E) bars at cts. top
- #6 d(E) bars at cts. top
- #5 d(E) bars at cts. bottom
- #6 d(E) bars at cts. bottom

See Sheet of for superstructure details and bill of materials.
 Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 angles per line.
See Sheet of for parapet reinforcement.

Notes:
- Out to out deck
- Face to face parapets
- Top of slab

PLAN

MINIMUM BAR LAP
#5 bar x 5'-6"
#6 bar x 3'-6"

PLAN

out to out deck

Face to face parapets

Total drop =

CROSS SECTION

Looking
See Sheet  for parapet reinforcement.

20 lines of bars with 3 lengths per line.
Bars indicated thus 20 x 3-#5 etc. indicates and Bill of Material.

See Sheet  for superstructure details

Notes:

In cross section, bottom of slab
-#12 bars at 12" cts., each end
-#5 bars at 11" cts.
-#6 a(E) bars at 1'-7" to top of slab

Top of slab
-#6 b(E) bars equally spaced out to out deck

out to out deck

Face to face parapets

slope " per ft.
slope " per ft.
slope " per ft.
slope " per ft.

Total drop =

spaces of

CROSS SECTION
(Looking )
See Sheet of for parapet reinforcement. 20 lines of bars with 3 lengths per line. Bars indicated thus 20 x 3-#5 etc. indicates and Bill of Material. See Sheet of for superstructure details.

Notes:
- Out to out deck 1'-7''
- Face to face parapets slope '' per ft.
- Spaces at

CROSS SECTION

NEAR PIER

MINIMUM BAR LAP
#5 bar = 3'-6''
and to end deck

PARTIAL PLAN

out to out deck

Face to face parapets

slope '' per ft.
slope '' per ft.
slope '' per ft.
slope '' per ft.
Total drop =

Spaces of

NEAR MIDSPAN

CROSS SECTION

Looking 2

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE
STRUCTURE NO.
SI-2-L

See Sheet of for parapet reinforcement.

20 lines of bars with 3 lengths per line.

Bars indicated thus 20 x 3-#5 etc. indicates and Bill of Material.

See Sheet of for superstructure details

Notes:

out to out deck

slope " per ft.

slope " per ft.

slope " per ft.

slope " per ft.

Total drop =

MINIMUM BAR LAP

#5 bar = 3x6"

PARTIAL PLAN

out to out deck

Face to face parapets

Note:

Sea Sheet of for superstructure details and Bill of Material. Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.

Sea Sheet of for parapet reinforcement.

NEAR PIER

CROSS SECTION

(looking )

spaces of

NEAR MIDSPAN

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE STRUCTURE NO.

DEPARTMENT OF TRANSPORTATION

STATE OF ILLINOIS

F.A.

RTE.

SECTION

COUNTY

CONTRACT NO.

TOTAL SHEETS

SHEET NO.

FILE NAME

USER NAME

PLOT SCALE

PLOT DATE

CHECKED

CHECKED

CHECKED

CHECKED

DRAWN

CHECKED

REVISED

REVISED

REVISED

REVISED

DEPARTMENT OF TRANSPORTATION

STATE OF ILLINOIS

F.A.

RTE.

SECTION

COUNTY

CONTRACT NO.
INSIDE ELEVATION OF PARAPET

MINIMUM BAR LAP

PARAPET JOINT DETAILS

Notes:
- Drains shall be located clear of all diaphragms.
- The exterior surfaces of the floor drains shall be painted according to Article 556 with the finish coat as specified. The exterior surfaces of the drain shall be cleaned according to Society of Protective Coatings Spec. SSPC-SP1 prior to painting.
- Fiberglass pipe shall conform to ASTM D 2996, with short-term rupture strength hoop tensile stress of 20,000 p.s.i. maximum.
- Separate clamping device according to AASHTO W303. Cost of clamping device and inserts is included with Floor Drains.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS
Notes:
The exterior surfaces of the floor drains shall be painted according to Article 506 with the finish coat as specified. The exterior surfaces of the drains shall be cleaned according to Society of Protective Coatings Spec. SSPC-SP1 prior to painting.
Fiberglass pipe shall conform to ASTM D 2996 with short-time rupture strength hoop tensile stress of 35,000 p.s.i. minimum.
Galvanized clamping device according to AASHTO M333. Cost of clamping device and inserts is included with Floor Drains.

Fill slot
Pipe clamp

FIBERGLASS
PIPE

ALUMINUM
TUBE

Notes:
The exterior surfaces of the floor drains shall be painted according to Article 506 with the finish coat as specified. The exterior surfaces of the drains shall be cleaned according to Society of Protective Coatings Spec. SSPC-SP1 prior to painting.
Fiberglass pipe shall conform to ASTM D 2996 with short-time rupture strength hoop tensile stress of 35,000 p.s.i. minimum.
Galvanized clamping device according to AASHTO M333. Cost of clamping device and inserts is included with Floor Drains.