KENTUCKY DEPARTMENT OF HIGHWAYS

KENTUCKY STANDARD DRAWINGS

ROADWAY

- BARRIERS
- DRAINAGE
- FENCES AND GRATES
- GENERAL
- PAVEMENT
- ROADSIDE DEVELOPMENT

TRAFFIC

- PERMANENT
- TEMPORARY

BRIDGES

- SEE OVERLEAF

DRAWING NUMBER EXPLANATION:
- DIVISION HEADING (ROADWAY)
- SECTION HEADING (FENCES & GRATES)
- SUB-SECTION (GATES)
- THREE OR FOUR DIGIT NUMBER
- MISCELLANEOUS
- NO. OF TIMES
- DRAWING REVISED

RGX-001-01
**GENERAL NOTES**

SPECIFICATIONS: Fabricate the Elastomeric Bearing Pads to the design and dimensions as shown on these drawings and to AASHTO Standard Specifications for Highway Bridges, Division II, Section 18.

Ensure bearings are low temperature Grade 3 with durometer hardness of 50 and subjected to the load testing requirements corresponding to Design Method A.

Include the price of bearing pads in the bid for the beams.

*Use actual reactions to determine anchorage requirements for pads.*

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**DIMENSIONS FOR I-BEAM PADS**

<table>
<thead>
<tr>
<th>PAD</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>MAXIMUM REACTION</th>
<th>MAXIMUM MOVEMENT (One Direction)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1F</td>
<td>14&quot;</td>
<td>10'</td>
<td>2-0.12&quot; x 13.630&quot; x 9.630&quot;</td>
<td>88k</td>
<td>0.5'</td>
</tr>
<tr>
<td>2F</td>
<td>16&quot;</td>
<td>10'</td>
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<td>0.5'</td>
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<tr>
<td>3F</td>
<td>20&quot;</td>
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<td>2-0.12&quot; x 19.630&quot; x 9.630&quot;</td>
<td>145k</td>
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<tr>
<td>4F</td>
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<td>10'</td>
<td>2-0.12&quot; x 23.630&quot; x 9.630&quot;</td>
<td>185k</td>
<td>0.5'</td>
</tr>
<tr>
<td>5F</td>
<td>24&quot;</td>
<td>11'</td>
<td>2-0.12&quot; x 23.630&quot; x 10.630&quot;</td>
<td>219k</td>
<td>0.5'</td>
</tr>
</tbody>
</table>

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**DIMENSIONS FOR I-BEAM PADS**

<table>
<thead>
<tr>
<th>PAD</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>MAXIMUM REACTION</th>
<th>MAXIMUM MOVEMENT (One Direction)</th>
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<tr>
<td>1E</td>
<td>14&quot;</td>
<td>10'</td>
<td>6-0.12&quot; x 13.630&quot; x 9.630&quot;</td>
<td>88k</td>
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<tr>
<td>2E</td>
<td>16&quot;</td>
<td>10'</td>
<td>6-0.12&quot; x 15.630&quot; x 9.630&quot;</td>
<td>107k</td>
<td>1.22'</td>
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<tr>
<td>3E</td>
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<td>6-0.12&quot; x 19.630&quot; x 9.630&quot;</td>
<td>145k</td>
<td>1.22'</td>
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<td>4E</td>
<td>24&quot;</td>
<td>10'</td>
<td>6-0.12&quot; x 23.630&quot; x 9.630&quot;</td>
<td>185k</td>
<td>1.22'</td>
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<tr>
<td>5E</td>
<td>24&quot;</td>
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<td>7-0.12&quot; x 23.630&quot; x 10.630&quot;</td>
<td>219k</td>
<td>1.44'</td>
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**BEARING DETAILS**

**SECTION Z-Z**

- Edge of Beam
- Edge of Cap
- Diaphragm
- Bearing Pad
- Cork or Styrofoam
- Epoxy Coated Dowel

**SECTION Y-Y**

- End of Beam
- Bearing Pad
- Cork or Styrofoam

**SECTION X-X**

- End of Beam
- Bearing Pad
- Cork or Styrofoam

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**PLANT**

- Edge of Beam
- Edge of Cap
- Diaphragm
- Cork or Styrofoam
- Dowel

**BEARING DETAILS**

- Std. Wt. 2" Commercial Pipe Sleeve closed at one end and 5" long. Secure Sleeve to prevent floating while placing Concrete. Sleeve is to sit on Cork or Styrofoam. Pipe Sleeve is to be incidental to Diaphragm Concrete.

- 1" Cork or Styrofoam
- 1" Cork or Styrofoam
- 1" Cork or Styrofoam

**KENTUCKY DEPARTMENT OF HIGHWAYS**

**STANDARD DRAWING NO. BBP-002-04**

**DIRECTOR DIVISION OF BRIDGE DESIGN**

12-1-99

12-1-99
**DIMENSIONS FOR BOX-BEAM PADS**

<table>
<thead>
<tr>
<th>PAD</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th><em>MAXIMUM REACTION</em></th>
<th>MAXIMUM MOVEMENT (One Direction)</th>
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</thead>
<tbody>
<tr>
<td>A1</td>
<td>1'-10&quot;</td>
<td>7&quot;</td>
<td>3-0.12&quot; x 21.630&quot; x 6.630&quot;</td>
<td>1,290'</td>
<td>123k</td>
<td>0.500&quot;</td>
</tr>
<tr>
<td>A2</td>
<td>1'-10&quot;</td>
<td>7&quot;</td>
<td>5-0.12&quot; x 21.630&quot; x 6.630&quot;</td>
<td>2,090'</td>
<td>123k</td>
<td>0.750&quot;</td>
</tr>
<tr>
<td>B1</td>
<td>1&quot;</td>
<td>7&quot;</td>
<td>3-0.12&quot; x 10.630&quot; x 6.630&quot;</td>
<td>1,290'</td>
<td>50k</td>
<td>0.500&quot;</td>
</tr>
<tr>
<td>B2</td>
<td>1&quot;</td>
<td>7&quot;</td>
<td>5-0.12&quot; x 10.630&quot; x 6.630&quot;</td>
<td>2,090'</td>
<td>50k</td>
<td>0.750&quot;</td>
</tr>
</tbody>
</table>

* Use actual reactions to determine anchorage requirements for pads.

**GENERAL NOTES**

SPECIFICATIONS: Fabricate the Elastomeric Bearing Pads to the design and dimensions as shown on these drawings and to AASHTO Standard Specifications for Highway Bridges, Division II, Section 18.

Ensure bearings are low temperature Grade 3 with durometer hardness of 50 and subjected to the load testing requirements corresponding to Design Method A.

Include the price of bearing pads in the bid for the beams.
PRECAST PRESTRESSED BOX BEAMS

GENERAL NOTES

SPECIFICATIONS: All references to the standard Specifications are to the current edition of the Kentucky Department of Highways Standard Specifications for Road and Bridge Construction, with current supplemental specifications. All references to the AASHTO Specifications are to the current edition of the AASHTO Standard Specifications for Highway Bridges, with interims.

DESIGN LOADS: Beam sections are designed for HS25 live load or alternate loading of two 24-kip axles spaced at 4 ft. apart, whichever produces the greater stress. The HS25 live load is arrived by increasing the standard HS20-44 truck and lane loads as specified in the AASHTO Specifications by 25 percent.

MATERIAL DESIGN SPECIFICATIONS:
- for Steel Reinforcement: FY = 60000 PSI
- for Prestressed Girder Concrete: F'C = 4500 PSI
- for Prestressing Steel: F'S = 270000 PSI

DESIGN LENGTH: Beam lengths shown in the Standards represent total beam length. Beams are designed for spans from centerline of bearing to centerline of bearing. Use the next greater designed section for non-standard lengths.

CONSTRUCTION METHOD: Transferring bond stress to the concrete will not be allowed, nor releasing of end anchors until the concrete has attained a minimum compressive strength of 4500 PSI as shown by standard cylinders made and cured identically with the girders, and cured on or prior to 28 days. Apply an initial prestress force of 28000 lbs. per low relaxation strand. Beams with honeycomb of such extent as to affect the strength of resistance to deterioration will not be accepted. The allowance of .0005L (length) is made for shortening of beams due to shrinkage and elastic change. Furnish shop plans showing a detensioning plan by numbering, in sequence, the strand pattern.

PRESTRESSING STRANDS: Ensure prestressing strands to be 1/8", Grade 270 low-relaxation strands conforming to AASHTO M 203. If an alternate strand arrangement or strand type is preferred by the Contractor, the designer that developed the original plans will provide the design and also revise the original plans to reflect the changes. These design and plan modifications will be done at the Contractor's expense.

CORROSION INHIBITOR: Provide a corrosion inhibitor for B-type (non-composite) beams in accordance with the current Special Note for Corrosion Inhibitors.

BEVELED EDGES: Bevel all exposed edges 1/4".

REINFORCEMENT: Dimensions shown from the face of concrete to reinforcement are clear distances. Spacing of reinforcement is from center to center of reinforcement. All steel reinforcement is to be epoxy coated in accordance with Section 811.10 of the Specifications. Consider bars marked "C" to be a stirrup for purposes of bend diameters. Non-epoxy reinforcement may be used for fabrication purposes, only, provided that the steels are not used in the top 1/8" of the beam and the location of the steel is indicated on the shop drawings.

CURBS: Pour curbs on B-type beams in the plant. Concrete must have the same mix design as the beam section, except that the cylinder strength need not exceed that for Class "AA" Concrete. Include the cost of the curbs in the price of beam.

GROUT: Provide non-shrink grout for anchor dowels, shear keys, and tenon and other rod block-outs conforming with Section 601.03.03 of the Specifications. When side by side superstructure is utilized, grouting will be completed after lateral tension rods have been fully tightened and before leveling devices have been removed. Include the cost of furnishing and placing grout in the price of beam.

RAILING SYSTEM TYPE II: Furnish this material per these specifications.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>MATERIAL SPECIFICATION</th>
<th>COATING SPECIFICATION</th>
</tr>
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<tbody>
<tr>
<td>Post</td>
<td>#6x25</td>
<td>ASTM A36</td>
<td>A123</td>
</tr>
<tr>
<td>Channel</td>
<td>C7x9.8</td>
<td>ASTM A36</td>
<td>A123</td>
</tr>
<tr>
<td>Plate</td>
<td>1/2&quot; x 7&quot;</td>
<td>ASTM A36</td>
<td>A123</td>
</tr>
<tr>
<td>Tubing</td>
<td>B5x0.1875</td>
<td>ASTM A4500 or A501</td>
<td>A123</td>
</tr>
<tr>
<td>Bolts</td>
<td>3/8&quot;</td>
<td>ASTM A4307</td>
<td>A153</td>
</tr>
<tr>
<td>Nuts</td>
<td>for 1/2&quot;</td>
<td>ASTM A563, Grade A or better</td>
<td>A153</td>
</tr>
<tr>
<td>Washers</td>
<td>for 1/2&quot;</td>
<td>ASTM A563, Grade A or better</td>
<td>A153</td>
</tr>
<tr>
<td>Stud</td>
<td>1 1/4&quot;</td>
<td>ASTM A4108 (1045 C.G. Bar)</td>
<td>B635, Type II, Class 25</td>
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<tr>
<td>Ferrule</td>
<td>2 1/2&quot; x 5&quot;</td>
<td>ASTM A4108 (H117 Steel)</td>
<td>B635, Type II, Class 25</td>
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<tr>
<td>Wire</td>
<td>3/8&quot;</td>
<td>ASTM A4510 (1016 Steel)</td>
<td>B635, Type II, Class 25</td>
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<td>Nut</td>
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<td>B635, Type II, Class 25</td>
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<tr>
<td>Washers</td>
<td>for 1 1/4&quot; Stud A4325</td>
<td>B635, Type II, Class 25</td>
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<tr>
<td>Plate</td>
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<td>ASTM A36</td>
<td>A123</td>
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<tr>
<td>Channel</td>
<td>C8x10.125</td>
<td>ASTM A36</td>
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<td>Plate</td>
<td>1 1/4&quot;</td>
<td>ASTM A369</td>
<td>A123</td>
</tr>
<tr>
<td>Tubing</td>
<td>B6x0.1875</td>
<td>ASTM A4500 or A501</td>
<td>A123</td>
</tr>
<tr>
<td>Bolts</td>
<td>5/8&quot;</td>
<td>ASTM A4307</td>
<td>A153</td>
</tr>
<tr>
<td>Nuts</td>
<td>for 5/8&quot;</td>
<td>ASTM A563, Grade A or better</td>
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<td>Washers</td>
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<tr>
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<td>for 2 1/4&quot; Bolt A4108 (12L14 Steel)</td>
<td>B635, Type II, Class 25</td>
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<tr>
<td>Washers</td>
<td>for 2 1/4&quot; Stud A4325</td>
<td>B635, Type II, Class 25</td>
<td></td>
</tr>
</tbody>
</table>

Use the current edition of the references listed below with these standards.

STANDARD DRAWINGS
- BBR-003 Elastomeric Bearing Pads
- BHS-007 Railing System Type II
- BUE-001 Armored Edge & Neoprene Joints
- RBE-001 Steel Beam Guardrail
- RBR-005 Guardrail Components

SPECIAL NOTES
- for Corrosion Inhibitors

KENTUCKY DEPARTMENT OF HIGHWAYS
BOX BEAM
GENERAL NOTES & REFERENCES

STANDARD DRAWING NO. BDP-001-03

DATE
**ABUTMENT OR END BENT**

**Typical Bearing Details (Non-Composite)**

End of Bridge
- After cutting prestress strands flush with surface, paint with approved bituminous material.

**PIER OR PILE BENT**

**Typical Bearing Details (Composite)**

End of Bridge
- After cutting prestress strands flush with surface, paint with approved bituminous material.

**STEPPED PIER OR PILE BENT**

(Skewing Location & Placement of Box Beams)

- Elastomeric Bearing Pads and/or Cork
- Drill holes for dowels after placing beams and grout dowels into cap.
- Fill holes with grout at fixed end and hot-pour crack and joint sealant at expansion end.
- Paint with approved bituminous material.

**BOX BEAM BEARING DETAILS**

- End of Bridge
- After cutting prestress strands flush with surface, paint with approved bituminous material.

**GENERAL NOTES**

- Provide metal shims conforming to ASTM A16 and galvanize in accordance with ASTM A123. As alternates, cork, polymer, or elastomer shims may be used. Include the cost of furnishing and placing these shims in the price per beam.

- Use 1/2" x 1'-6" preformed cork for beam types B12-B21 & CB12-CB21 for bearing.

- For Elastomeric Bearing Pad Details of Shapes A1 & B1, see Std. Dwg. BBP-003.

- Include the cost of furnishing and placing these shims in the price per beam.

- Pads B1 are to always be placed perpendicular to L beam with center of pad over L bearing.
This stirrup is perpendicular to the beam. These stirrups are parallel to the skew. Transition stirrups.

See Applicable Std. for Stirrup Spacing.

Return to the previous page.
For ease of installing Lateral Tensioning Rods, a 2" x 6" hand hole may be blocked out between units. (Typ.)

Exterior Beam

Lateral Tensioning Rods

6" (Typ.)

Make Final Tensioning From This End

Preliminary tightening from this end

8" (Typ.)

2" Thread

This End

6" Thread

0^-10^ Skew

3" Thread

over 10^ Skew

" Min.

Cut-off rod after final tightening (each end)

When void is 2'-0" long or less void may be omitted on any skew.

Arrange Lateral Tensioning Rods so that these voids are of equal lengths

Arrange Lateral Tensioning Rods so that these voids are of equal lengths

One lateral tensioning rod per beam 50 ft. long or less.

Two lateral tensioning rods per beams over 50 ft. long.

GENERAL NOTES:

LATERAL TENSIONING RODS: After the deck units are in place, apply a preliminary tension to the lateral tensioning rods. Perform final tensioning that yields 20,000 psi as developed by a torque of 200 ft./lbs. Provide lateral tensioning rods and plates conforming to ASTM A36 with heavy hex nuts conforming to ASTM A307.
Bridge

Remainder of Post Spacing At 6'-3"

Minimum Post Spacing

Adjust space to fit span length

Electrical resistance weld

Anchor Insert

Electrical resistance weld

NOTE: Include reinforcement shown on this sheet in the cost of the beam. This requirement applies to side-by-side box beam superstructures, only

Note: Connect bridge guardrail to roadway guardrail, refer to Std. Dwg. RDG-001, E.T.

12-2-02

STANDARD DRAWING NO. BDP-005-03

KENTUCKY DEPARTMENT OF HIGHWAYS
RAILING SYSTEM TYPE II

GUARDRAIL ELEVATION
Post Spacing

RUSTICATION GROOVE

FIRST POST SHALL CLEAR ABUTMENT BY 3".

First post shall clear abutment by 3".

TS 8 x 4 x 0.1875 tubing minimum length center to center with 12'-6" splice.

Attach guardrail between these limits to the beams before shipment

Allow sliding between the tube and channel after fastening bolts in slotted holes,

Pour curb after initial prestress has been released.

Sleeve nut with right hand machine thread. Made from hex. or square stock, min. 1.70" distance across flats.

TO BE NeATLY ROUNDED WITH AN EDGING TOOL.

Pour curb after initial prestress has been released.

Two 6/8 x 8" Studs with machine threads full-length and two hex. nuts and washers per stud.

Adjust space to fit span length

NUMBER OF ANCHORS 2 PER POST

Anchor (Type B for Box) (Type A for Slab or 12" Box)

TS TYPE II RAILING SYSTEM

NOTE: Connect bridge guardrail to roadway guardrail, refer to Std. Dwg. RDG-001, E.T.

Attach guardrail between these limits to the beams before shipment

Adjust space to fit span length

Pour curb after initial prestress has been released.

Pour curb after initial prestress has been released.

To be neatly rounded with an edging tool.

Pour curb after initial prestress has been released.
TABLE OF DESIGN DATA

KENTUCKY DEPARTMENT OF HIGHWAYS

STATE HIGHWAY ENGINEER

DATE

SUBMITTED

APPROVED

STANDARD DRAWING NO.

Beam Length Minus 3"

Beam Length Minus 3"

A1(E)

A2(E)

BDP-010-03

Beam Type

Beam Length (feet)

Number of Strands Required

Row 1

Row 2

B33

B33 & CB33

CB33

TABLE OF DIMENSION DATA

Bent Reinforcement

Mark

Size

a

b

c

C1(e)

#5

3-3/4" 6" 2'-10 1/2"

C2(e)

#4

3-3/4" 2'-10 1/2" 2'-6 1/2"

C3(e)

#4

2'-10 1/2" 2'-6 1/2"

C4(e)

#5

2'-10 1/2" 3'-4 1/2"

C5(e)

#4

2'-10 1/2" 3'-4 1/2"

NOTE: A1 and A2 bars are to be lapped 2'-2" when necessary.

C1(e) Bar

C2(e)-C5(e) Bars

for Exterior Beams, Only

B33 BEAM

CB33 BEAM

B33 ELEVATION OF 0° SKEW

(Rеfer to BOP-003, for skewed details)

CB33 ELEVATION OF 0° SKEW

(Rеfer to BOP-003, for skewed details)
TABLE OF DESIGN DATA

<table>
<thead>
<tr>
<th>Beam Type</th>
<th>Beam Length Minus 3&quot;</th>
<th>Number of Strands Required</th>
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</thead>
<tbody>
<tr>
<td>B42</td>
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</tbody>
</table>

### B42 Beam

- **Beam Type:** B42
- **Beam Length (feet):** 3'-6"

#### Standard Drawing No. 17-03

- **Mark:** C1
- **Size:** #5
- **Length:** 3'-3"
- **Bent Reinforcement:**
  - C1(e) Bar
  - C2(e) Bar

**NOTE:** All bars are to be lapped 2'-2" when necessary.

**KENTUCKY DEPARTMENT OF HIGHWAYS**

**BOX BEAM B42 DETAILS**

**STANDARD DRAWING NO. BDP-011-03**

**DIRECTOR DIVISION OF BRIDGE DESIGN**

**DATE SUBMITTED:** 12-2-02

**DATE APPROVED:** 12-2-02
SLAB OPTION: The superstructure option shown on this Standard Drawing may be used in lieu of composite or non-composite adjacent box beams. Notify the Director of the Division of Bridge Design when this option is used.

CLASS "AA" REINFORCED CONCRETE: All falsework is to remain in place until the Class "AA" Concrete compressive strength is 4000 PSI. Class "AA" Concrete is to be used throughout the superstructure.

ELEVATIONS: Determine final elevations using the elevations, slopes, and grades shown on the detailed plans.

STEEL REINFORCEMENT: Ensure steel reinforcement is ASTM A 615 Grade 60 and epoxy coated.

SURFACE FINISH: The top of the slab surface may be finished with a floated surface finish in accordance with Section 601.03.18 and textured in accordance with Section 609.03.11.
WORK THIS DRAWING WITH DRAWING NO. A

DATE
DIRECTOR DIVISION OF BRIDGE DESIGN
SUBMITTED
APPROVED
12-1-99
12-1-99

BGX-004-09

FOR GRADE SLOPEWALL REINFORCEMENT: Use No. 4 bars at 18" centers in each
similar.

SECTION B-B

SECTION D-D

GENERAL NOTES

SPECIFICATIONS: Slope walls to be constructed according to details shown and
to Section 703 of the Kentucky Department of Highways Standard
Specifications for Road and Bridge Construction.

INCIDENTALS: Include the cost of steel reinforcement, drain tile, preformed expansion joint material, aggregate, excavation, and all
labor and materials required to complete the work in accordance
with the plans and Specifications in the price for 6" Concrete Slope Wall.

ROUTE UNDER ON FILL WITH ROUTE OVER ON FILL
ROUTE UNDER AT GRADE WITH ROUTE OVER ON FILL

SECTION A-A

CONSTRUCTION JOINT DETAIL
CONSTRUCTION JOINTS REQUIRED AT 21'-0" CENTERS ALONG SLOPEWALL
CONSTRUCTION JOINTS PERMISSIVE AT SCORING DETAILS

ROUTE UNDER IN EARTH CUT
ROUTE OVER ON FILL

Rock Excavation: Excavate the rock to plan depth and slope as near
as possible to reduce the quantity of Concrete, Class "A" required to
maintain a minimum slope wall thickness. Include the cost of
additional concrete required to fill voids in the rock and maintain
the slope wall thickness in the bid for 6" Concrete Slope Wall.

SLOPEWALL REINFORCEMENT: Use No. 4 bars at 18" centers in each
direction or an equivalent area of welded deformed steel fabric
to reinforce the slope wall.

SIX: A 45° Skew is detailed on this sheet. Details for other skews are
similar.

Rock Excavation: Excavate the rock to plan depth and slope as near
as possible to reduce the quantity of Concrete, Class "A" required to
maintain a minimum slope wall thickness. Include the cost of
additional concrete required to fill voids in the rock and maintain
the slope wall thickness in the bid for 6" Concrete Slope Wall.

SLOPEWALL REINFORCEMENT: Use No. 4 bars at 18" centers in each
direction or an equivalent area of welded deformed steel fabric
to reinforce the slope wall.

SIX: A 45° Skew is detailed on this sheet. Details for other skews are
similar.

INCIDENTALS: Include the cost of steel reinforcement, drain tile, preformed expansion joint material, aggregate, excavation, and all
labor and materials required to complete the work in accordance
with the plans and Specifications in the price for 6" Concrete Slope Wall.

ROUTE UNDER ON FILL WITH ROUTE OVER ON FILL
ROUTE UNDER AT GRADE WITH ROUTE OVER ON FILL

SECTION B-B

SECTION D-D

GENERAL NOTES

SPECIFICATIONS: Slope walls to be constructed according to details shown and
to Section 703 of the Kentucky Department of Highways Standard
Specifications for Road and Bridge Construction.

INCIDENTALS: Include the cost of steel reinforcement, drain tile, preformed expansion joint material, aggregate, excavation, and all
labor and materials required to complete the work in accordance
with the plans and Specifications in the price for 6" Concrete Slope Wall.

ROUTE UNDER ON FILL WITH ROUTE OVER ON FILL
ROUTE UNDER AT GRADE WITH ROUTE OVER ON FILL

SECTION B-B

SECTION D-D

GENERAL NOTES

SPECIFICATIONS: Slope walls to be constructed according to details shown and
to Section 703 of the Kentucky Department of Highways Standard
Specifications for Road and Bridge Construction.

INCIDENTALS: Include the cost of steel reinforcement, drain tile, preformed expansion joint material, aggregate, excavation, and all
labor and materials required to complete the work in accordance
with the plans and Specifications in the price for 6" Concrete Slope Wall.

ROUTE UNDER ON FILL WITH ROUTE OVER ON FILL
ROUTE UNDER AT GRADE WITH ROUTE OVER ON FILL

SECTION B-B

SECTION D-D

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ROUTE UNDER ON FILL WITH ROUTE OVER ON FILL
ROUTE UNDER AT GRADE WITH ROUTE OVER ON FILL

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SECTION D-D

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SECTION B-B

SECTION D-D

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ROUTE UNDER ON FILL WITH ROUTE OVER ON FILL
ROUTE UNDER AT GRADE WITH ROUTE OVER ON FILL

SECTION B-B

SECTION D-D

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with the plans and Specifications in the price for 6" Concrete Slope Wall.

ROUTE UNDER ON FILL WITH ROUTE OVER ON FILL
ROUTE UNDER AT GRADE WITH ROUTE OVER ON FILL

SECTION B-B

SECTION D-D

GENERAL NOTES

SPECIFICATIONS: Slope walls to be constructed according to details shown and
to Section 703 of the Kentucky Department of Highways Standard
Specifications for Road and Bridge Construction.

INCIDENTALS: Include the cost of steel reinforcement, drain tile, preformed expansion joint material, aggregate, excavation, and all
labor and materials required to complete the work in accordance
with the plans and Specifications in the price for 6" Concrete Slope Wall.
STENCIL FOR YEAR AND DESIGN LOADING
When year only is used place year in center of plate

General Notes

STENCILS: Fabricate all stencils from recessed panels with beveled edges with raised letters and figures in accordance with Subsection 601.03.19 of the Specifications.

YEAR AND DESIGN LOADING STENCIL: Show the year that the contract is executed and the design load as shown on the contract plans. The design load is required on all structures classified as bridges by Subsection 101.03 of the Specifications and on other structures as referenced on plans.

DRAWING NUMBER STENCIL: Use this stencil on all structures. The number to be placed on the stencil shall be taken from the contract plans.

CONTRACTOR STENCIL: Place on all bridges, the name of the prime contractor and subcontractor(s), when applicable, in proximity to other stencils required.

LOCATION OF STENCILS FOR BRIDGES
Locate stencils where shown or as directed by the Engineer.

LOCATION OF STENCILS
Locate stencils in the area shown or as directed by the Engineer.

STENCIL FOR DRAWING NUMBER

STENCIL FOR YEAR AND DESIGN LOADING
When year only is used place year in center of plate
**FIGURE NO. 1**

- Existing Drain
- Existing Gutterline
- Normal Gutterline
- Overlay
- New Gutterline
- Top of Curb

**FIGURE NO. 2**

- Area to Receive Epoxy Slurry Treatment

**FIGURE NO. 3**

- Finish with 1/8" Radius Edging Tool
- Styrofoam Backing Rod
- New Preformed Joint Sealer
- Copper Strip or Waterstop
- Existing Joint Filler

**FIGURE NO. 4**

- TYPICAL EXPANSION DAM TREATMENT
- Trim to Provide for Expansion when required

- X & Y are the Dimensions of the Existing PL

**Structural Steel weights given are approximate and the Contractor is responsible for all measurements.**

- Determine dimension Z for thickness of the built-up plates on the minimum specified thickness of overlay minus 1/4".

- Steel is to be furnished in 10-foot minimum lengths welded together as directed by the Engineer.
**BILL OF REINFORCEMENT**

<table>
<thead>
<tr>
<th>MARK</th>
<th>TYPE</th>
<th>NO.</th>
<th>SIZE</th>
<th>LENGTH</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1</td>
<td>5</td>
<td>1</td>
<td>5</td>
<td>2</td>
<td>B1-Barrie</td>
</tr>
<tr>
<td>B2</td>
<td>5</td>
<td>1</td>
<td>5</td>
<td>2</td>
<td>B2-Barrie</td>
</tr>
</tbody>
</table>

**NOTE:**
- B1-Barrie: 11 Bars B1 @ 12" lapped with 10 Bars B2 & 1 Bar B3 = 10'-0"
- For acute corners, place bars B1 parallel to the end of slab. Move B3 toward the center of the slab to clear end of slab by 2" min.

**ESTIMATE OF QUANTITIES**

Steel Reinforcement, Epoxy Coated: 140 LBS.
Concrete, Class "AA": 1.0 C.Y.

**NOTE:**
- The concrete quantity is the concrete above the gutter line and 11'-0" from the end of the slab. This estimate of quantities is for one barrier transition and for information only. Barrier transition quantities are included in the estimate of quantities for the superstructure.

**PLAN OF BARRIER TRANSITION**

- For the superstructure, place bars parallel to the end of slab. Move B3 toward the center of the slab to clear end of slab by 2" min.

**PLAN OF SKewed END**

- Form holes in barrier for guardrail and rub rail connections with 1" I.D. plastic pipe. Leave pipe in place and include the cost in the bid for superstructure concrete.

**ESTIMATE OF QUANTITIES**

- Steel Reinforcement, Epoxy Coated: 140 LBS.
- Concrete, Class "AA": 1.0 C.Y.

**NOTE:**
- The concrete quantity is the concrete above the gutter line and 11'-0" from the end of the slab. This estimate of quantities is for one barrier transition and for information only. Barrier transition quantities are included in the estimate of quantities for the superstructure.
"V-Groove" Rustication

SECTION A-A

SECTION B-B

ELEVATION D-D

PLAN OF BARRIER TRANSITION

PLAN OF SKewed END

BILL OF REINFORCEMENT

<table>
<thead>
<tr>
<th>MARK</th>
<th>TYPE</th>
<th>NO.</th>
<th>LENGTH</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1a</td>
<td>3s</td>
<td>5</td>
<td>5</td>
<td>Barrier</td>
</tr>
<tr>
<td>B1b</td>
<td>3s</td>
<td>5</td>
<td>5</td>
<td>Barrier</td>
</tr>
<tr>
<td>B3a</td>
<td>3s</td>
<td>5</td>
<td>5</td>
<td>Barrier</td>
</tr>
</tbody>
</table>

ESTIMATE OF QUANTITIES

Steel Reinforcement, Epoxy Coated: 140 LBS.
Concrete, Class "AA": 1.0 C.Y.

NOTE: The concrete quantity is the concrete above the gutter line and 11'-0" from the end of the slab. This estimate of quantities is for one barrier transition and for information only. Barrier transition quantities are included in the estimate of quantities for the superstructure.

KENTUCKY DEPARTMENT OF HIGHWAYS

BARRIER TRANSITION END DRAINAGE

STANDARD DRAWING NO. BGX-011-04

DIRECTOR DIVISION OF BRIDGE DESIGN

DATE: 12-1-99

APPROVED

SUBMITTED
**Description of Soil Compactness or Consistency**

<table>
<thead>
<tr>
<th>Soil Type</th>
<th>Compactness on Consistency</th>
<th>Range of Penetration Resistance</th>
<th>Range of Unconfined Compressive Strength</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coarse Grained Soils (More than half of material is larger than No. 200 sieve size.)</td>
<td>Very loose Medium compact Compact Very compact</td>
<td>Less than 4 blows per ft. 4 to 10 10 to 30 30 to 50 Greater than 50</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Fine Grained Soils (More than half of material is smaller than No. 200 sieve size.)</td>
<td>Very soft Medium stiff Stiff Very stiff Hard</td>
<td>Less than 0.25 tsf 0.25 to 0.50 0.50 to 1.0 1.0 to 2.0 2.0 to 4.0 Greater than 4.0</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

**Unified Soil Classifications**

<table>
<thead>
<tr>
<th>Major Division</th>
<th>Symbol</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gravel and Gravelly Soils</td>
<td>GW</td>
<td>Well-graded gravels or gravel-sand mixtures, little or no fines.</td>
</tr>
<tr>
<td></td>
<td>GP</td>
<td>Poorly graded gravels or gravel-sand mixtures, little or no fines.</td>
</tr>
<tr>
<td></td>
<td>GM</td>
<td>Silty gravels, gravel-sand-silt mixtures.</td>
</tr>
<tr>
<td></td>
<td>GC</td>
<td>Clayey gravels, gravel-sand-clay mixtures.</td>
</tr>
<tr>
<td>Sand and Sandy Soils</td>
<td>SW</td>
<td>Well-graded sands or gravelly sands, little or no fines.</td>
</tr>
<tr>
<td></td>
<td>SP</td>
<td>Poorly graded sands or gravelly sands, little or no fines.</td>
</tr>
<tr>
<td></td>
<td>SM</td>
<td>Silty sands, sand-silt mixtures.</td>
</tr>
<tr>
<td></td>
<td>SC</td>
<td>Clayey sands, sand-clay mixtures.</td>
</tr>
<tr>
<td>Silts and Clays LL is Less Than 50</td>
<td>ML</td>
<td>Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity.</td>
</tr>
<tr>
<td></td>
<td>CM</td>
<td>Inorganic clays of low to medium plasticity, gravelly clays, sandy clays silty clays, lean clays.</td>
</tr>
<tr>
<td>Silts and Clays LL is Greater Than 50</td>
<td>MH</td>
<td>Inorganic silts, micaceous or diatomaceous fine sandy or silt soils, elastic silts.</td>
</tr>
<tr>
<td></td>
<td>CH</td>
<td>Inorganic clays of high plasticity, fat clays.</td>
</tr>
<tr>
<td>Unclassified Material</td>
<td>NONE</td>
<td>Non-classified material (i.e. overburden, pavement, slag, etc.) include visual description.</td>
</tr>
</tbody>
</table>

**Relation of RQD and In situ Rock Quality**

<table>
<thead>
<tr>
<th>RQD (%)</th>
<th>Rock Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>90 - 100</td>
<td>Excellent</td>
</tr>
<tr>
<td>75 - 90</td>
<td>Good</td>
</tr>
<tr>
<td>50 - 75</td>
<td>Fair</td>
</tr>
<tr>
<td>25 - 50</td>
<td>Poor</td>
</tr>
<tr>
<td>0 - 25</td>
<td>Very Poor</td>
</tr>
</tbody>
</table>

**Legend**

- LIMESTONE
- SANDSTONE
- COAL
- NONDURABLE SHALE (SDI < 90)
- DURABLE SHALE (SDI ≥ 90)
- TALUS OR MINE WASTE OR FILL MATERIAL
- ROADWAY FILL-GRANULAR EMBANKMENT
- STRUCTURE GRANULAR BACKFILL
- SLOPE PROTECTION

**Geotechnical Legend**

- STANDARD DRAWING NO. BXG-012-02
- DIRECTOR DIVISION OF BRIDGE DESIGN 12-1-99
- SUBMITTED 12-1-99
- APPROVED 12-1-99
"V-Groove" Rustication

Mandatory roughened construction joint. Concrete above this joint is to be placed after slab has been properly cured.

Permissible construction joint and bottom of "V-groove" joint in top of barrier. "V-groove" rustication joint is required if construction joint is used.

For acute corners, place bars B1 parallel to the end of slab. Move B3 toward the center of the slab to clear end of slab by 2" min.

Bill of Reinforcement

<table>
<thead>
<tr>
<th>MARK</th>
<th>TYPE</th>
<th>NO.</th>
<th>SIZE (FT.)</th>
<th>LENGTH (FT.)</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1</td>
<td>5</td>
<td>A</td>
<td>2</td>
<td>1</td>
<td>Barrier</td>
</tr>
<tr>
<td>B2</td>
<td>20</td>
<td>C</td>
<td>1</td>
<td>1</td>
<td>Barrier</td>
</tr>
<tr>
<td>B3</td>
<td>2</td>
<td>D</td>
<td>1</td>
<td>1</td>
<td>Barrier</td>
</tr>
</tbody>
</table>

Estimate of Quantities

Steel Reinforcement, Epoxy Coated: 140 LBS.
Concrete, Class "AA": 1.0 C.Y.

NOTE: The concrete quantity is the concrete above the gutter line and 11'-0" from the end of the slab. This estimate of quantities is for one barrier transition and for information only. Barrier transition quantities are included in the estimate of quantities for the superstructure.
**PLAN OF BARRIER TRANSITION**

For acute corners, place bars B1 parallel to the end of slab. Move B3 toward the center of the slab to clear end of slab by 2" min.

**BILL OF REINFORCEMENT**

<table>
<thead>
<tr>
<th>MARK</th>
<th>TYPE</th>
<th>NO.</th>
<th>SIZE</th>
<th>LENGTH</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1</td>
<td>TYPE 1</td>
<td>10</td>
<td>1/8&quot;</td>
<td>10'</td>
<td>Slab into Barrier</td>
</tr>
<tr>
<td>B2</td>
<td>TYPE 2</td>
<td>1</td>
<td>1/2&quot;</td>
<td>12'</td>
<td>Barrier</td>
</tr>
<tr>
<td>B3</td>
<td>TYPE 3</td>
<td>1</td>
<td>3/4&quot;</td>
<td>10'</td>
<td>Barrier</td>
</tr>
</tbody>
</table>

**ESTIMATE OF QUANTITIES**

Steel Reinforcement, Epoxy Coated: 140 LBS.
Concrete, Class "AA": 1.0 C.Y.

**NOTE:** The concrete quantity is the concrete above the gutter line and 11'-0" from the end of the slab. This estimate of quantities is for one barrier transition and for information only. Barrier transition quantities are included in the estimate of quantities for the superstructure.

**Mandatory roughened construction joint.** Concrete above this joint is to be placed after slab has been properly cured.

**Permissible construction joint and bottom of "V" open joint in top of barrier.** "V-Groove" rustication joint is required if construction joint is used.

**Form holes in barrier for guardrail and rub rail connections with 1" I.D. plastic pipe. Leave pipe in place and include the cost in the bid for superstructure concrete.**

**End of slab**

**SECTION A-A**

**SECTION B-B**

"V-Groove" Rustication

**END DRAINAGE**

**PLAN OF SKEWED END**
NOTE: Reposition barrier stirrups in manner shown as to not interfere with drain opening.

SECTION THROUGH DRAIN  PLAN OF DRAIN (Barrier not in place)

NOTE: Field bend top transverse slab reinforcement in the area of the drain to maintain 2½" of concrete cover through the drain. Bend reinforcement approximately 1'-0" from the gutter line. Transverse slab reinforcement adjacent to the opening is not to be bent. Longitudinal reinforcement is not to be tied to the transverse reinforcement adjacent to the drain for a distance sufficient to allow the reinforcement to sag under the bent reinforcement in the drain area.

THROUGH BARRIER DRAIN DETAILS

NOTE: Reposition curb stirrups in manner shown as to not interfere with drain opening.

SECTION THROUGH DRAIN  PLAN OF DRAIN (Curb not in place)

NOTE: Field bend top transverse slab reinforcement in the area of the drain to maintain 2½" of concrete cover through the drain. Bend reinforcement approximately 1'-0" from the gutter line. Transverse slab reinforcement adjacent to the opening is not to be bent. Longitudinal reinforcement is not to be tied to the transverse reinforcement adjacent to the drain for a distance sufficient to allow the reinforcement to sag under the bent reinforcement in the drain area.

THROUGH CURB DRAIN DETAILS

NOTE: Assembled drains shall be painted in accordance with the Specifications.

SECTION THROUGH DRAIN

THROUGH DECK DRAIN DETAILS
General Notes

LOW FLOW DIVERSION CURB: Include all materials and labor required to construct the Low Flow Diversion Curb in the bid for Low Flow Diversion Curb.

DIMENSION ‘H’: This dimension is the lesser of the wing tip elevation, one-half the barrel height opening, or as designated on the plans.

METHOD OF MEASUREMENT: The limits of the Low Flow Diversion Curb is the entire wall that is above the paved flowline, extending from the centerwall to the wing face as detailed on the Plan views, and the 6" x 1'-6" footing as shown in Section B-B.

STEEL REINFORCEMENT: All steel reinforcement is #4 bars in accordance with ASTM A 615, Grade 60.

CONCRETE: Class "A" Concrete is to be used.
GENERAL NOTES

CROWN: Crown shall conform to the rate of crown at the approach pavement and bridge deck. If the rate of crown at the bridge deck differs from that of approach pavement, a smooth transition shall be provided within the limits of the approach slab.

CONCRETE: Concrete shall be Class 'AA'.

REINFORCEMENT: All steel reinforcement shall be Grade 60 and epoxy coated.

PAYMENT: Include the cost of Class 'AA' concrete, epoxy-coated steel reinforcement, and all labor and materials required to construct the approach slab in the bld item for Approach Slab.
GUARDRAIL-STEEL "W" BEAM (SINGLE FACE BR): The bid unit for this item is be linear feet. This item shall include the Railing System Type II railing system type that is to be installed on the bridge between the endmost posts attached to the bridge and all labor and incidentals necessary to properly install the railing system. For non-composite box beams, the railing system is attached to the beam prior to shipment.

GUARDRAIL-STEEL "W" BEAM (SINGLE FACE A): The bid unit for this item is be linear feet. This item includes the W-Beam guardrail (2 ply for extra strength), guardrail posts, offset blocks, hardware, and labor and incidentals necessary to properly install the approach guardrail within the 25'-0" limits at each corner of the structure. For guardrail components, refer to Standard Drawings RBR-001, RBR-005 and RBR-255.
**ELEVATION A-A**

- Form holes in barrier for guardrail and rub rail connections with M60 plastic pipe. Leave pipe in place and include the cost in the bid for rail system.

**PLAN OF BARRIER TRANSITION**

- Form holes in barrier for guardrail and rub rail connections with M60 plastic pipe. Leave pipe in place and include the cost in the bid for rail system.

**PLAN OF BARRIER**

- Form holes in barrier for guardrail and rub rail connections with M60 plastic pipe. Leave pipe in place and include the cost in the bid for rail system.

**TYPICAL BARRIER SECTION**

- Note: Open joints are not required.

**OBLIQUE VIEW**

- Note: X1 & X3 Bars at end of slab may be adjusted to maintain 2" minimum clearance on curved and skewed end bridges.

**GENERAL NOTES**

- MEASUREMENT: The linear foot bid for the barrier is measured along the roadway gutterline. Include all reinforcement shown and all concrete above the top of slab in the bid item for Rail System Type 3.

- REINFORCEMENT: All reinforcement shown on this sheet is to be epoxy coated. Use stirrup bend diameters for all bent bars. Straight reinforcement is to be Size #5 and lapped 2" when necessary.
**General Notes**

**SPECIFICATIONS:** All references to the Specifications are to the current edition of the Kentucky Department of Highways Standard Specifications for Road and Bridge Construction. All references to the AASHTO Specifications are to the current edition of the AASHTO Standard Specifications for Highway Bridges.

**INSTALLATION PROCEDURE:** Seal the ends of the joint seal to prevent the entrance of water and foreign materials.

**WELDING SPECIFICATIONS:** Ensure techniques and welding procedure comply with current joint specification ANSI/AASHTO/AWS D1.5 Bridge Welding Code.

**MATERIAL SPECIFICATIONS:** Ensure steel material is new, commercial grade steel suitable for welding. Acceptance will be based on visual inspection by the Engineer. Joint sealing material, only, is in accordance with Section 807 of the Specifications. Ensure stud shear connectors conform to ASTM A500, Grade 1015.

**LOCATION:** Locate armored edges and/or expansion dams in accordance with detail plans.

**PAINT:** Clean and paint all structural steel in accordance with the Specifications, except that no field coating will be required.

**SHOP DRAWINGS:** Contrary to the Specifications, no shop plans are required.

**BASIS OF PAYMENT:** The accepted quantities of Neoprene Expansion Dam which includes the armored edges & preformed compression joint seal will be paid for at the contract unit price per linear foot for each size, measured along centerline of joint between the vertical faces of the barriers. When only an Armored Edge is required the cost of furnishing and placing the armored edge will be paid for at the contract unit price per linear foot, measured along the Armored Edge between the vertical faces of the barriers.

<table>
<thead>
<tr>
<th>Joint Data</th>
<th>Dim. A</th>
<th>Movement</th>
</tr>
</thead>
<tbody>
<tr>
<td>@ 15°C</td>
<td>(in)</td>
<td>(in)</td>
</tr>
<tr>
<td>1½</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>1½</td>
<td></td>
</tr>
</tbody>
</table>

The joint seal supplied must accommodate the required movement shown. Set Dimension A with temperature change increment and as required by the manufacturer to obtain the required movement.

1. Applies to 8" slab thickness
2. Applies to 5" slab thickness

<table>
<thead>
<tr>
<th>Temperature Change Increment per 10°F</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Concrete</strong></td>
</tr>
<tr>
<td>Span Length (ft)</td>
</tr>
<tr>
<td>0 - 80</td>
</tr>
<tr>
<td>81 - 180</td>
</tr>
<tr>
<td>181 - 280</td>
</tr>
<tr>
<td>281 - 380</td>
</tr>
</tbody>
</table>

**SECTION THROUGH JOINT**

"A" - Minimum Joint opening @ 60°F

"B" - Manufacturer's compressed seal height 1/4".

**SECTION THROUGH ARMORED EDGE**

1. Assembly weight = 18.8 lbs./ft.
2. Assembly weight = 12.4 lbs./ft.

**SECTION THROUGH BARRIER**
TABLE OF DIMENSIONS AND QUANTITIES (FOR ONE PILE ONLY)

<table>
<thead>
<tr>
<th>L (Total Length of Pile)</th>
<th>1-P</th>
<th>2-P</th>
<th>3-P</th>
<th>4-P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ft.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L (Lap)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cu. Yd.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Length</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

GENERAL NOTES


CONCRETE: Use class 0 concrete throughout the piles.

REINFORCEMENT: Include the cost of reinforcement in the price bid per linear foot of piles. Concrete piles must not be damaged below cut-off elevation. Concrete and spiral bars above cut-off elevation are to be removed. Bars P1 and P2 are to remain and project into structure above. Field bend these bars if necessary to maintain clearance shown on Bridge details.

PILING: Minimum penetration of all piles is 20 feet unless solid rock is encountered.

TEST PILES: Drive test piles where designated on Bridge Plans to determine the length required. Locate all test piles so they will act as a part of the piling system.

PILE CUT-OFF: No payment will be made for pile cut-off.

SPIRAL REINFORCEMENT: May be plain or deformed and have a minimum yield strength of 40,000 psi and a minimum tensile strength of 70,000 psi.

DEPARTMENT OF HIGHWAYS

14" REINFORCED CONCRETE PILE

STANDARD DRAWING NO. BPC-002-08

CLASS "D" CONCRETE

ESTIMATED

CONCRETE

BILL AND TYPES OF REINFORCEMENT (FOR ONE PILE ONLY)

<table>
<thead>
<tr>
<th>Pick-up Method</th>
<th>Max. Length for 4&quot;#8</th>
<th>Max. Length for 4&quot;#9</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-Point</td>
<td>41 ft.</td>
<td>43 ft.</td>
</tr>
<tr>
<td>2-Point</td>
<td>58 ft.</td>
<td>61 ft.</td>
</tr>
<tr>
<td>3-Point</td>
<td>81 ft.</td>
<td>89 ft.</td>
</tr>
</tbody>
</table>

One in Head of Each Pile

One in Point of Each Pile

BARS P1

3'-0" Point Pick-Up

BARS P2

2" pitch

4'-0" Point of Pile

2" pitch

3'-0" Spiral P3 at 2" pitch

3" Plain Round Bars

2" pitch

4'-0" Spiral P4 at 1/4" pitch

GENERAL NOTES

Pile lengths beyond those shown in table will have their concrete quantities adjusted to the length required.
GENERAL NOTES

SPECIFICATIONS: All references to the Standard Specifications are to the current edition of the Kentucky Department of Highways Standard Specifications for road and bridge construction.

CONCRETE: Use class C' modified concrete in piles. Cylinder strength shall be 4000 psi at the time of release of the prestress strands and 5000 psi minimum at 28 days.

PRESTRESS STRANDS: Ensure prestressing reinforcement to be 1/2 inch nominal diameter uncoated seven-wire low lax strand conforming to the requirements of grade 270, AASHTO M203, current edition.

DESIGN STRESSES: Initial strand tension=30,000 psi. f's=270,000 psi. f'c=5,000 psi. f'c at transfer=4000 psi. Spiral reinforcement wire W3.5 conforming to ASTM A82.

DRIVING PILES: Protect pile shafts from direct hammer impact by using approved cushion blocks.

EDGES: Chamfer all edges one inch or rounded to approximately one inch radius.

BUILD-UP AND SPLICES: Build-ups and splices may be used, as detailed, if authorized by the Engineer.

FORMS: For forming the exterior of piles, the use of steel forms on concrete casting beds is required unless otherwise approved by the Engineer. Ensure concrete finish conforms to Subsection 604.06, Part A of the Specifications.

PAYMENT: Payment is to be made on the basis of the unit price bid per linear foot of piling. See Section 604.04 of the Specifications.

PILE TIPS: Use pile tips when specified in the bridge plans and the pile is used as a point bearing pile. Include the cost of pile tip in the unit price bid per linear foot of piling.
NOTE: Bevel flanges and web of pile extension on 1:1 bevel as shown and employ conventional butt weld.

GENERAL NOTES


MATERIALS: Ensure structural steel piles conform to A.S.T.M. A36, current specifications.

SPLICE PLATES: Ensure all pile splicing options conform to A.S.T.M. A36, current specifications. In lieu of Splice Option "A", Splice Option "B", splice plates may be flame cut from HP12x53 sections. If flange sections are used, the portion cut at the web must be turned outside in order to obtain a tight fit. Grind the edges smooth prior to welding.

SPLICE OPTION "A": The pile splicer shown in the details for Splice Option "A" may be Champion H-Pile Splicer, Model HP 30000, or an approved equal. Ensure the splicer is in accordance to the manufacturer’s recommendations and subject to the Engineer's approval.

FIELD WELDS: Ensure field welding material and workmanship for all pile splicing conforms to the current joint specifications 2AWS/3AWSHT/2AWS D1.5 Bridge Welding Code. Splice piles as indicated above only when driven below cut-off elevation.

PAYMENT: Payment for the piles in accordance with plans and specifications will be made at the contract price per linear foot.

PAINT: No painting is required on steel piles.

MILL TEST REPORTS: Furnish mill test reports in triplicate to the Department showing that all materials furnished conform to the Specifications.
GENERAL NOTES


MATERIALS: Ensure structural steel piles conform to A572Gr.50, current specifications.

SPLICE PLATES: Ensure all pile splicing options conform to A572Gr.50, current specifications. In lieu of Splice Option "A", Splice Option "B", splicing plates may be flame cut from HP14x73 sections. If flange sections are used, the portion cut at the web must be turned outside in order to obtain a tight fit. Grind the edges smooth prior to welding.

SPLICE OPTION "B": The pile splicer shown in the details for Splice Option "B" may be Champion H-Pile Splicer, Model HP 30000, or an approved equal. Ensure the splicer is in accordance to the manufacturer's recommendations and subject to the Engineer's approval.

FIELD WELDS: Ensure field welding material and workmanship for splicing conforms to the current joint specifications AWS/CSA573.6, D1.5 Bridge Welding Code. Splice piles as indicated above only when driven below cut-off elevation.

PAYMENT: Payment for the piles in accordance with plans and Specifications will be made at the contract price per linear foot.

PAINT: No painting is required on steel piles.

MILL TEST REPORTS: Furnish mill test reports in triplicate to the Department showing that all materials furnished conform to the Specifications.
GENERAL NOTES


MATERIALS: Ensure structural steel piles conform to A.S.T.M. A36, current Specifications.

SPlice PLATES: Ensure all pile splicing options conform to A.S.T.M. A36, current Specifications. In lieu of Splice Option "A," Splice option "B," splice plates may be flame cut from HP14x89 sections. If flange sections are used, the portion cut at the web must be turned outside in order to obtain a tight fit. Grind the edges smooth prior to welding.

SPlice OPTIon "B:" The pile splicer shown in the details for Splice Option "B" may be Champion H-Pile Splicer, Model HP 30000, or an approved equal. Ensure the splicer is in accordance to the manufacturer's recommendations and subject to the Engineer's approval.

FIELD WELDS: Ensure field welding material and workmanship for all piles conforms to the current Joint Specifications ANSI/AASHTO/AWS D1.5 Bridge Welding Code.

PAyMENT: Payment for the piles in accordance with plans and specifications will be made at the contract price per linear foot.

PAINT: No painting is required on steel piles.

MILL TEST REPORTS: Furnish mill test report in triplicate to the Department showing that all materials furnished conform to the Specifications.