EXTERIOR BEAMS.

5 d 1 BARS TO FIT STEPS AT THE BEAM. FLARE 5 m 1 BARS AND FIELD CUT PLACE 5 m 1 AND 5 n 1 BARS UNDER EACH

NOTE:

THROUGH BACKWALL

PART SECTION THROUGH BACKWALL

PART PLAN VIEW

SECTION E-E

PILING LAYOUT

ABUTMENT FOOTING DETAILS

TABLE OF ABUTMENT STEPS

NOTE:

DIMENSIONS SHOWN ON PILING LAYOUT ARE AT BOTTOM OF FOOTING. BATTED TILES IN THE DIRECTION SHOWN.

* THIS DIMENSION MAY VARY. TILTING OF THE PAVEMENT SUPPORT SECTION DURING CONSTRUCTION MAY BE NECESSARY TO ACCOMMODATE PROPER SETTING OF THE STRIP SEAL EXPANSION DEVICE OPENING.

NOTE:

EXPANSION DEVICE NOT SHOWN.

NOTE:

BARRIER RAIL NOT SHOWN IN DETAILS.

AT EACH ABUTMENT.

__ - HP 10x42 STEEL BEARING PILING REQUIRED

FOOTING. BATTER PILING IN THE DIRECTION SHOWN.

DIMENSIONS SHOWN ON PILING LAYOUT ARE AT BOTTOM OF FOOTING. BATTED TILES IN THE DIRECTION SHOWN.

* THIS DIMENSION MAY VARY. TILTING OF THE PAVEMENT SUPPORT SECTION DURING CONSTRUCTION MAY BE NECESSARY TO ACCOMMODATE PROPER SETTING OF THE STRIP SEAL EXPANSION DEVICE OPENING.

NOTE:

EXPANSION DEVICE NOT SHOWN.

NOTE:

BARRIER RAIL NOT SHOWN IN DETAILS.

ABUTMENT FOOTING DETAILS

ABUTMENT STEPS

ABUTMENT ELEVATIONS

TABLE OF ABUTMENT STEPS

NOTE:

DIMENSIONS SHOWN ON PILING LAYOUT ARE AT BOTTOM OF FOOTING. BATTED TILES IN THE DIRECTION SHOWN.

* THIS DIMENSION MAY VARY. TILTING OF THE PAVEMENT SUPPORT SECTION DURING CONSTRUCTION MAY BE NECESSARY TO ACCOMMODATE PROPER SETTING OF THE STRIP SEAL EXPANSION DEVICE OPENING.

NOTE:

EXPANSION DEVICE NOT SHOWN.

NOTE:

BARRIER RAIL NOT SHOWN IN DETAILS.
**ABUTMENT STEP DIAGRAM**

**REAR ELEVATION**

**SECTION THROUGH ABUTMENT**

**PILING LAYOUT**

**ABUTMENT FOOTING DETAILS**

**TABLE OF ABUTMENT STEPS**

**TABLE OF ABUTMENT ELEVATIONS**

**NOTE:** BARRIER RAIL NOT SHOWN IN DETAILS.
**EXTERIOR BEAMS.**

5n1  BARS TO FIT STEPS AT THE BEAM. FLARE 5m1  BARS AND FIELD CUT PLACE 5m1  AND 5n1  BARS UNDER EACH

**NOTE:**

THROUGH BACKWALL

PART SECTION

PART PLAN VIEW

SECTION E-E

NOTE:

PLACE 5g1 AND 5g4 BARS UNDER EACH REAR PLANE 5g1 BARS AND FIELD CUT 5g1 BARS TO FIT STEPS AT THE EXTERIOR BEAMS.

**SECTION THROUGH ABUTMENT**

**PILING LAYOUT**

**ABUTMENT FOOTING DETAILS**

**ABUTMENT STEP DIAGRAM**

**TABLE OF ABUTMENT STEPS**

**TABLE OF ABUTMENT ELEVATIONS**

**NOTE:** BARRIER RAIL NOT SHOWN IN DETAILS.

**NOTE:** CONSTRUCTION JOINT Varies IN HEIGHT/ ELEVATION AND IS PARALLEL TO ROADWAY CROWN LINE AT ABUTMENT

**CROWN LINE AT ABUTMENT IS PARALLEL TO ROADWAY IN HEIGHT/ELEVATION AND CONSTRUCTION JOINT VARIES**

**EXPANSION DEVICE NOT SHOWN**

**SECTION FOR SEE ROADWAY CROSS**

**NOTE :**

THREE DIMENSIONS MAY VARY. TILTING OF THE PAVEMENT SUPPORT SECTION DURING CONSTRUCTION MAY BE NECESSARY TO ACCOMMODATE PRECAST SETTINGS OF THE STRIP SEAL EXPANSION DEVICE OPENING.

**SEE DETAIL "C"**

**ABUTMENT FOOTING DETAILS**

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

PROJECT NUMBER

SHEET NUMBER

DESIGN TEAM

FILE NO.

DESIGN SHEET NO.

NOTE:

EXPANSION DEVICE OPENING. TO ACCOMMODATE PROPER SETTING OF THE PAVEMENT SUPPORT SECTION DURING CONSTRUCTION MAY BE NECESSARY *THIS DIMENSION MAY VARY. TILTING OF THE PAVEMENT SUPPORT SECTION AT EACH ABUTMENT.*

NOTE:

ABUTMENT FOOTING DETAILS

____ - HP10x42 STEEL BEARING PILING REQUIRED FOOTING. BATTER PILES IN THE DIRECTION SHOWN. DIMENSIONS SHOWN ON PILING LAYOUT ARE AT BOTTOM OF FOOTING. BATTER PLANE IN THE DIRECTION SHOWN.

NOTE:

*THIS DIMENSION MAY VARY. TILTING OF THE PAVEMENT SUPPORT SECTION DURING CONSTRUCTION MAY BE NECESSARY TO ACCOMMODATE PRECAST SETTINGS OF THE STRIP SEAL EXPANSION DEVICE OPENING.

**NOTE:** BARRIER RAIL NOT SHOWN IN DETAILS.
FIELD BEND 5H4 BAR AS NECESSARY TO AVOID FILE IN ABUTMENT WING.

NOTE: BARRIER RAIL NOT SHOWN IN SECTION C-C.

NOTE: SEE DESIGN SHEET ____ FOR LOCATION OF VIEWS A-A & B-B SEE DESIGN SHEET _____.

NOTE: FOR LOCATION OF VIEWS A-A & B-B SEE PART PLAN & LONGIT. SECTION SHEET FOR PVC PIPE LOCATION.

NOTE: BARRIER RAIL QUANTITIES ARE INCLUDED IN THE BARRIER RAIL QTY INSTEAD OF BRIDGE DECK QTY.

NOTE: SEE DESIGN SHEET ____ IN THIS SURFACE IS PARALLEL TO AND BELOW THE DESIGN & GRADE.

NOTE: FOR BOTTOM FOOTING USE SHEET FOR PVC PIPE LOCATION.
TO ACCOMMODATE SKEW CLEAR FROM FACE OF CONCRETE POSITION THIS 5e2 BAR 2"

PART SECTION F-F

1 0

TO ACCOMMODATE SKEW CLEAR FROM FACE OF CONCRETE

PART SECTION D-D

SECTION C-C

NOTES:BARRIER RAIL NOT SHOWN IN SECTION C-C.

A NOTE SEE DESIGN SHEET .... IN THESE PLANS FOR DETAILS OF BARRIER RAIL WING EXTENSIONS"MENING BARS 5c3 AND 5c14 ARE INCLUDED IN THE BARRIER RAIL QUANTITIES.

TABLE OF WINGWALL ELEVATIONS

LOCATION ELEV. G ELEV. H ELEV. I

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>ELEV. G</th>
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<th>ELEV. I</th>
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</table>

NOTE: BARRIER RAIL NOT SHOWN IN SECTION C-C.
TO ACCOMMODATE SKEW CLEAR FROM FACE OF CONCRETE POSITION THIS 5c2 BAR 2"

NOTE: BARRIER RAIL NOT SHOWN IN SECTION C-C.

NOTE: BARREN RAIL NOT SHOWN IN SECTION C-C.
A NOTE SEE DESIGN SHEET _____ IN THESE PLANS FOR DETAILS OF BARRIER RAIL, WING EXTENSIONS, REINFORCING BARS 5c3 AND 5c14 ARE INCLUDED IN THE BARRIER RAIL QUANTITIES.

PART SHEET FOR PVC PIPE LOCATION.

SEE DESIGN SHEET ____ FOR BOTTOM FOOTING SEE DESIGN SHEET ____.
NOTE: FOR LOCATION OF VIEWS A-A & B-B QUANTITIES.
ARE INCLUDED IN THE BARRIER RAIL QUANTITIES.

TABLE OF WINGWALL ELEVATIONS

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<tr>
<th>LOCATION</th>
<th>ELEV. G</th>
<th>ELEV. H</th>
<th>ELEV. I</th>
</tr>
</thead>
<tbody>
<tr>
<td>1'-7&quot;</td>
<td>9&quot;</td>
<td>2&quot;</td>
<td></td>
</tr>
<tr>
<td>2'-10&quot;</td>
<td>5'-8&quot;</td>
<td>5'-8&quot;</td>
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</tbody>
</table>

* PVC PIPE ____ BELOW THE DESIGN | GRADE.
THIS SURFACE IS PARALLEL TO AND
THIS SURFACE IS PARALLEL TO AND

PART B-F

SEPARATION JOINT (WITH KEYWAYS)

CONSTRUCTION JOINT

NOTE: PVC PIPE

SEE PART PLAN & LONGIT. SECTION SHEET FOR PVC PIPE LOCATION.

NOTE: PVC PIPE

SEE PART PLAN & LONGIT. SECTION SHEET FOR PVC PIPE LOCATION.
PART SECTION D-D

TABLE OF WINGWALL ELEVATIONS

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>ELEV-G</th>
<th>ELEV-H</th>
<th>ELEV-I</th>
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</thead>
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</table>

NOTE: BARRIER RAIL NOT SHOWN IN SECTION C-C.

NOTE: SEE DESIGN SHEET ____ FOR LOCATION OF VIEWS A-A & B-B.
NOTE: FOR LOCATION OF VIEWS A-A & B-B SEE DESIGN SHEET ____.

SECTION C-C

NOTE: BARRIER RAIL NOT SHOWN IN SECTION C-C.

NOTE: FOR LOCATION OF VIEWS A-A & B-B SEE DESIGN SHEET ____.

NOTE: SEE DESIGN SHEET ____ FOR LOCATION OF VIEWS A-A & B-B.

NOTE: FOR LOCATION OF VIEWS A-A & B-B SEE DESIGN SHEET ____.
TO ACCOMMODATE SKEW CLEAR FROM FACE OF CONCRETE POSITION THIS 5e2 BAR 2" BTE BEAM STUB ABUT. DETAILS - (R.A.) 7°31' - 15° SKEW STANDAD SHEET 2101-BTE

SECTION C-C
NOTE: BARRIER RAIL NOT SHOWN IN SECTION C-C.
A NOTE SEE DESIGN SHEET .... IN THESE PLANS FOR DETAILS OF BARRIER RAIL WING EXTENSIONS. REINFORCING BARS 5c3 AND 5c14 ARE INCLUDED IN THE BARRIER RAIL QUANTITIES.

SECTION F-F
NOTE: BARRIER RAIL NOT SHOWN IN SECTION C-C.
A NOTE SEE DESIGN SHEET .... IN THESE PLANS FOR DETAILS OF BARRIER RAIL WING EXTENSIONS. REINFORCING BARS 5c3 AND 5c14 ARE INCLUDED IN THE BARRIER RAIL QUANTITIES.

VIEW A-A
NOTE: FOR LOCATION OF VIEWS A-A & B-B SEE DESIGN SHEET ....

VIEW B-B
NOTE: FOR LOCATION OF VIEWS A-A & B-B SEE PART PLAN & LONGIT. SECTION SHEET FOR PVC PIPE LOCATION.

POSITION THIS 5e2 BAR 2" CLEAR FROM FACE OF CONCRETE TO ACCOMMODATE SKEW

TABLE OF WINGWALL ELEVATIONS

LOCATION | ELEV. G | ELEV. H | ELEV. I

NOTE: PVC PIPE FOR PVC PIPE LOCATION.
*SEE PART PLAN & LONGIT. SECTION SHEET FOR PVC PIPE LOCATION.
TO ACCOMMODATE SKEW CLEAR FROM FACE OF CONCRETE POSITION THIS 5e2 BAR 2" "BTE" BEAM STUB ABUT. DETAILS - ( R.A. ) 15°01' - 30° SKEW

SECTION C-C
NOTE: BARRIER RAIL NOT SHOWN IN SECTION C-C.
A NOTE SEE DESIGN SHEET ---- IN THESE PLANS FOR DETAILS OF BARRIER RAIL WING EXTENSIONS. REINFORCING BARS 5c3 AND 5c14 ARE INCLUDED IN THE BARRIER RAIL QUANTITIES.

SECTION F-F
NOTE: BARRIER RAIL NOT SHOWN IN SECTION C-C.
A NOTE SEE DESIGN SHEET ---- IN THESE PLANS FOR DETAILS OF BARRIER RAIL WING EXTENSIONS. REINFORCING BARS 5c3 AND 5c14 ARE INCLUDED IN THE BARRIER RAIL QUANTITIES.
PART SECTION F-F

TO ACCOMMODATE SKEW CLEAR FROM FACE OF CONCRETE POSITION THIS 5e2 BAR 2" BTC" OR "BTD" BEAM STUB ABUT. DETAILS - (L.A.) 0°01' - 7°30' SKEW

STANDARD SHEET 2103-BTCD

ABUTMENT WING.

AVOID PILE IN AS NECESSARY TO FIELD BEND 5h4 BAR

CORRECTION 04-14 - CHANGED NOTE ABOUT BARRIER RAIL BARS 5c3 & 5c14 TO BARRIER RAIL QUANTITIES INSTEAD OF BRIDGE DECK QUANTITIES.

NOTE: BARRIER RAIL NOT SHOWN IN SECTION C-C.

POSITION THIS 5h4 BAR 2" CLEAR FROM FACE OF CONCRETE TO ACCOMMODATE SHEAR

NOTE: SEE DESIGN SHEET ____ IN

SEE PART PLAN & LONGIT. SECTION SHEET FOR PVC PIPE LOCATION.

NOTE: FOR LOCATION OF VIEWS A-A & B-B ELEVATION SEE DESIGN SHEET ____.

SEE PART PLAN & LONGIT. SECTION SHEET FOR PVC PIPE LOCATION.

NOTE: DESIGN SHEET ____ IN

NOTE: BARRIER RAIL NOT SHOWN IN SECTION C-C.

A NOTE SEE DESIGN SHEET ____ IN THESE PLANS FOR DETAILS OF BARRIER RAIL WING EXTENSIONS, REINFORCING BARS 5c3 AND 5c14 ARE INCLUDED IN THE BARRIER RAIL QUANTITIES.

TABLE OF WINGWALL ELEVATIONS

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COUNTY DESIGN SHEET NO. PROJECT NUMBER SHEET NUMBER

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN | GRADE

____ BELOW THE PARALLEL TO AND THIS SURFACE IS PARALLEL TO AND

THESE PLANS FOR DETAILS OF BARRIER RAIL WING EXTENSIONS, REINFORCING BARS 5c3 AND 5c14 ARE INCLUDED IN THE BARRIER RAIL QUANTITIES.

SEE PART PLAN & LONGIT. SECTION SHEET FOR PVC PIPE LOCATION.

NOTE: FOR LOCATION OF VIEWS A-A & B-B ELEVATION SEE DESIGN SHEET ____.

NOTE: BARRIER RAIL NOT SHOWN IN SECTION C-C.

A NOTE SEE DESIGN SHEET ____ IN THESE PLANS FOR DETAILS OF BARRIER RAIL WING EXTENSIONS, REINFORCING BARS 5c3 AND 5c14 ARE INCLUDED IN THE BARRIER RAIL QUANTITIES.
PART SECTION F-F

TO ACCOMMODATE SKEW CLEAR FROM FACE OF CONCRETE POSITION THIS \(5e2\) BAR 2" \(5c16\)

"BTC" OR "BTD" BEAM STUB ABUT. DETAILS - (L.A.) 7°31'-15° SKEW

STANDARD SHEET 2104-BTCD

ABUTMENT WING. AVOID PILE IN AS NECESSARY TO FIELD BEND \(5h4\) BAR

CORRECTION 04-14 - CHANGED NOTE ABOUT BARRIER RAIL BARS \(5c3\) & \(5c14\) TO BARRIER RAIL QUANTITIES. INSTEAD OF BRIDGE DECK QUANTITIES.

NOTE: BARRIER RAIL NOT SHOWN IN SECTION C-C.

SEE PART PLAN & LONGIT. SECTION SHEET FOR PVC PIPE LOCATION.

PART SECTION D-D

SECTION C-C

A NOTE SEE DESIGN SHEET .... IN THESE PLANS FOR DETAILS OF BARRIER RAIL, WING EXTENSIONS, REINFORCING BARS \(5c3\) AND \(5c14\) ARE INCLUDED IN THE BARRIER RAIL QUANTITIES.

TABLE OF WINGWALL ELEVATIONS

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</table>
"BTE" BEAM STUB ABUT. DETAILS - (L.A.) 7°31’-15° SKEW

STANDARD SHEET 2104-BTE

TO ACCOMMODATE SKEW
CLEAR FROM FACE OF CONCRETE
POSITION THIS 5e2 BAR 2"

NOTE: BARRIER RAIL NOT SHOWN IN SECTION C-C.

TABLE OF WINGWALL ELEVATIONS

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</table>
PART SECTION D-D

PART SECTION F-F

SECTION C-C

NOTE: BARRIER RAIL NOT SHOWN IN SECTION C-C.

NOTE: SEE DESIGN SHEET ____ IN

NOTE: BARRIER RAIL NOT SHOWN IN SECTION C-C.

NOTE: BARRIER RAIL NOT SHOWN IN SECTION C-C.

NOTE: SEE DESIGN SHEET ____ FOR LOCATION OF VIEWS A-A & B-B

NOTE: SEE DESIGN SHEET ____ FOR LOCATION OF VIEWS A-A & B-B

NOTE: SEE DESIGN SHEET ____ FOR LOCATION OF VIEWS A-A & B-B

NOTE: SEE DESIGN SHEET ____ FOR LOCATION OF VIEWS A-A & B-B

TABLE OF WINGWALL ELEVATIONS

LOCATION | ELEV. G | ELEV. H | ELEV. I

NOTE: BARRIER RAIL NOT SHOWN IN SECTION C-C.

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NOTE: BARRIER RAIL NOT SHOWN IN SECTION C-C.

NOTE: BARRIER RAIL NOT SHOWN IN SECTION C-C.
"BTE" BEAM STUB ABUT. DETAILS - (L.A.) 15°01'-30° SKEW

STANDARD SHEET 2105-BTE

PART SECTION F-F

TO ACCOMMODATE SKEW CLEAR FROM FACE OF CONCRETE POSITION THIS 5e2 BAR 2' ~

C O R R E C T I O N 04-14 - CHANGED NOTE ABOUT BARRIER RAIL BARS 5c3 & 5c14 TO BARRIER RAIL QUANTITIES INSTEAD OF BRIDGE DECK QUANTITIES.

PART SECTION D-D

SECTION C-C

NOTE: BARRIER RAIL NOT SHOWN IN SECTION C-C.

A NOTE SEE DESIGN SHEET .... IN THESE PLANS FOR DETAILS OF BARRIER RAIL, WING EXTENSIONS, REINFORCING BARS 563 AND 564 ARE INCLUDED IN THE BARRIER RAIL QUANTITIES.

TABLE OF WINGWALL ELEVATIONS

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<tr>
<th>LOCATION</th>
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<th>ELEV. I</th>
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</table>

NOTE: PVC PIPE... SEE PART PLAN & LONGIT. SECTION SHEET FOR Pvc PIPE LOCATION.

* PVC PIPE... SEE PART PLAN & LONGIT. SECTION SHEET FOR PVC PIPE LOCATION.

SEE DESIGN SHEET ____ FOR BOTTOM FOOTING...

SEE DESIGN SHEET ____ FOR LOCATION OF VIEWS A-A & B-B... QUANTITIES. ARE INCLUDED IN THE BARRIER RAIL REINFORCING BARS 5C3 AND 5C14 BARRIER RAIL WING EXTENSIONS. THESE PLANS FOR DETAILS... NOTE: SEE DESIGN SHEET ____ IN...
**ABUTMENT NOTES:**

Minimum clear distance from face of concrete to near inducing device is to be 2'-6" unless otherwise noted in plans. The maswall is to be poured before the superstructure deck is formed.

Construction joint keys are to be formed with 2'-6" D=2" steel keys.

The portion of the backwall containing the abutment is to be poured after the superstructure has been placed. Concrete cover is to be applied to the abutment bridge deck in accordance with the current Iowa DOT Standards.

The cost of preformed expansion joint filler and cost of furnishing and placing concrete sealed is to be included in the price bid for structural concrete bridge.

PAVING NOTCH DOWELS SHALL BE STAINLESS STEEL DEFORMED BAR D-200 MEETING THE REQUIREMENTS OF MATERIALS SECTION.

NOTE: All dimensions are on the price bid for structural concrete bridge. In order to prevent damage to the end of the bridge deck and backwall from construction equipment, an appropriate method of protection, approved by the engineer shall be provided by the bridge contractor at no extra cost to the state.

**Concrete Placement Quantities**

<table>
<thead>
<tr>
<th>Location</th>
<th>Abut.</th>
<th>Backwall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Footing and Steps</td>
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</tr>
<tr>
<td>Backwall fill of concrete joint</td>
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<tr>
<td>Backwall above concrete joint</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beam extension</td>
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<tr>
<td>Wing extension</td>
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<td>Wing maskwall</td>
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<td>Wing maskwall</td>
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<tr>
<td>TOTAL</td>
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**ABUTMENT QUANTITIES**

**Concreting Steel - Epoxy Coated - Total Use**

<table>
<thead>
<tr>
<th>Bar</th>
<th>Length</th>
<th>Weight</th>
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<tbody>
<tr>
<td>5d1</td>
<td>2'-8</td>
<td>11</td>
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<tr>
<td>6d2</td>
<td>2'-8</td>
<td>11</td>
</tr>
<tr>
<td>6d3</td>
<td>2'-8</td>
<td>11</td>
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</tbody>
</table>

**Reinforcing Steel - Epoxy Coated - Total Use**

<table>
<thead>
<tr>
<th>Bar</th>
<th>Length</th>
<th>Weight</th>
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</thead>
<tbody>
<tr>
<td>5d4</td>
<td>2'-8</td>
<td>11</td>
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</table>

**Stainless Steel - Total Use**

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<tr>
<th>Bar</th>
<th>Length</th>
<th>Weight</th>
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<tbody>
<tr>
<td>5d5</td>
<td>2'-8</td>
<td>11</td>
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</table>

**ABUTMENT QUANTITIES**

**Concrete and Reinforcing Steel Quantities are included on the Summary Quantities Sheet.**

**ABUTMENT QUANTITIES**

**Concrete and Reinforcing Steel Quantities are included on the Summary Quantities Sheet.**

**NOTICE:**

Concrete and reinforcing steel quantities are included on the Summary Quantities Sheet.
ABUTMENT NOTES:

Minimum clear distance from face of concrete to Neal perforating gear is to be 2 unless otherwise noted on drawing. The maskwall is to be placed before the superstructure, deck is formed.

- Concrete grade 60, meeting the requirements of Grade 60 materials I.M. 452.
- Paving notch doweled shall be stainless steel deformed bar or meeting the requirements of materials I.M. 601.
- Concrete reinforcement is to be 2" unless otherwise noted or shown.
- Anchorage of the expansion device is to be placed after the bridge deck is poured.
- Reinforcing steel is to be 2" unless otherwise noted or shown.
- Concrete sealers is to be applied to the bridge deck in accordance with the current Iowa DOT standard specifications.
- Methods of protection approved by the engineer shall be provided for furnishing and placing concrete sealers. Preformed expansion joint filler, and cost of furnishing and placing concrete sealers is to be included in the price bid for structural concrete bridge.
- The portion of the backwall containing the abutment anchorages for the expansion device is to be designed to withstand the forces imposed by the expansion device.
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- Reinforcing steel is to be 2" unless otherwise noted or shown.
- Concrete sealers is to be applied to the bridge deck in accordance with the current Iowa DOT standard specifications.
- Methods of protection approved by the engineer shall be provided for furnishing and placing concrete sealers. Preformed expansion joint filler, and cost of furnishing and placing concrete sealers is to be included in the price bid for structural concrete bridge.
- The portion of the backwall containing the abutment anchorages for the expansion device is to be designed to withstand the forces imposed by the expansion device.
- The cost of furnishing concrete sealers is to be included in the price bid for structural concrete bridge.
- The portion of the backwall containing the abutment anchorages for the expansion device is to be designed to withstand the forces imposed by the expansion device.
- A minimum clear distance from face of concrete to Neil perforating gear is to be 2 unless otherwise noted on drawing. The maskwall is to be placed before the superstructure, deck is formed.
- Concrete grade 60, meeting the requirements of Grade 60 materials I.M. 452.
- Paving notch doweled shall be stainless steel deformed bar or meeting the requirements of materials I.M. 601.
- Concrete reinforcement is to be 2" unless otherwise noted or shown.
- Anchorage of the expansion device is to be placed after the bridge deck is poured.
- Reinforcing steel is to be 2" unless otherwise noted or shown.
- Concrete sealers is to be applied to the bridge deck in accordance with the current Iowa DOT standard specifications.
- Methods of protection approved by the engineer shall be provided for furnishing and placing concrete sealers. Preformed expansion joint filler, and cost of furnishing and placing concrete sealers is to be included in the price bid for structural concrete bridge.
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- A minimum clear distance from face of concrete to Neil perforating gear is to be 2 unless otherwise noted on drawing. The maskwall is to be placed before the superstructure, deck is formed.
- Concrete grade 60, meeting the requirements of Grade 60 materials I.M. 452.
- Paving notch doweled shall be stainless steel deformed bar or meeting the requirements of materials I.M. 601.
- Concrete reinforcement is to be 2" unless otherwise noted or shown.
- Anchorage of the expansion device is to be placed after the bridge deck is poured.
- Reinforcing steel is to be 2" unless otherwise noted or shown.
- Concrete sealers is to be applied to the bridge deck in accordance with the current Iowa DOT standard specifications.
**ABUTMENT NOTES:**

Minimum clear distance from face of concrete to near property line is to be 2' unless otherwise noted on drawing. The maskwall is to be formed before the superstructure deck is formed.

**CONSTRUCTION JOINT KEYWAYS:**

- All dimension are out to out, D = pin dia

**ABUTMENT QUANTITIES:**

- Concrete and reinforcing steel quantities are included on the summary quantities sheet.

**REINFORCING BAR LIST - ONE ABUTMENT:**

- Epoxy coated bars
- Stainless steel bars
- Total lbs.

**CONCRETE PLACEMENT QUANTITIES:**

- Footing
- Beam steel
- Concrete

- Note: Concrete and reinforcing steel quantities are included on the summary quantities sheet.
ABUTMENT NOTES:

MINIMUM CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR BENT BAR DETAILS:

MINIMUM CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR BENT BAR DETAILS:

MINIMUM CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR BENT BAR DETAILS:

MINIMUM CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR BENT BAR DETAILS:

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MINIMUM CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR BENT BAR DETAILS:

MINIMUM CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR BENT BAR DETAILS:
ABUTMENT NOTES:
Minimum clear distance from face of concrete to rear
representing end is to be 2 unless otherwise noted on drawing.
The maskwall is to be placed before the superstructure
deck is poured.

Construction joints keyways are to be formed with levelled
driveway.

The portion of the backwall containing the abutment
anchorages of the expansion device is to be placed after
the bridge deck is placed.
Concrete Gamer is to be applied to the abutment bridge
sheet in accordance with the current Iowa JUC500 standard
specifications.

The cost of reinforcing expansion joint filler, and cost
of furnishing and placing concrete sealant is to be included
in the price bid for structural concrete bridges.
Pouring water dams shall be stainless steel deformed bar
grace for meeting the requirements of materials manuals.

If necessary to prevent damage to the end of the bridge
dowing and backwall from construction equipment, an appropriate
method of protection approved by the engineer shall be provided
by the bridge contractor at no extra cost to the state.

CONCRETE PLACEMENT QUANTITIES

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>ALD</th>
<th>MIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOOTING AND STEPS</td>
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<td></td>
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<tr>
<td>BACKWALL KEYWAY CENTER</td>
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<td></td>
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<tr>
<td>BACKWALL ABOVE CENTER</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FINGER EXTENSION</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FINGER EXTENSION</td>
<td></td>
<td></td>
</tr>
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<td>FINGER KEYWAY</td>
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<tr>
<td>TOTAL</td>
<td>563</td>
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NOTE: Concrete and reinforcing steel quantities are included
on the Summary Quantities Sheet.

ABUTMENT QUANTITIES

NOTE: All dimensions are out to out, b = pin dia.

STAINLESS STEEL - TOTAL (LBS.)

EPoxy COATED BARS

REINFORCING BAR LIST - ONE ABUTMENT

<table>
<thead>
<tr>
<th>BARS</th>
<th>LOCATION</th>
<th>LENGTH</th>
<th>WEIGHT</th>
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<tr>
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</tr>
<tr>
<td>5d2</td>
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<td>5'</td>
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</tr>
<tr>
<td>5d3</td>
<td></td>
<td>5'</td>
<td>5</td>
</tr>
<tr>
<td>5g1</td>
<td></td>
<td>5'</td>
<td>5</td>
</tr>
<tr>
<td>5g2</td>
<td></td>
<td>5'</td>
<td>5</td>
</tr>
<tr>
<td>5m1</td>
<td></td>
<td>5'</td>
<td>5</td>
</tr>
<tr>
<td>5n1</td>
<td></td>
<td>5'</td>
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</tr>
<tr>
<td>5f1</td>
<td></td>
<td>5'</td>
<td>5</td>
</tr>
<tr>
<td>5f2</td>
<td></td>
<td>5'</td>
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</tr>
<tr>
<td>5f3</td>
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<td>5'</td>
<td>5</td>
</tr>
</tbody>
</table>

S.S. BARS

PAVING NOTCH DOWELS (STAINLESS STEEL)

88

PAVING NOTCH LONGITUDINAL

4'-2

PAVING NOTCH BF

5'-9

PAVING NOTCH FF

5'-8

CONCRETE PLACEMENT QUANTITIES

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>ALD</th>
<th>MIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOOTING AND STEPS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BACKWALL KEYWAY CENTER</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BACKWALL ABOVE CENTER</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FINGER EXTENSION</td>
<td></td>
<td></td>
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<tr>
<td>FINGER EXTENSION</td>
<td></td>
<td></td>
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<tr>
<td>FINGER KEYWAY</td>
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<td></td>
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<td>FINGER KEYWAY</td>
<td></td>
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<tr>
<td>TOTAL</td>
<td>563</td>
<td></td>
</tr>
</tbody>
</table>

NOTE: Concrete and reinforcing steel quantities are included
on the Summary Quantities Sheet.

ABUTMENT QUANTITIES
**ABUTMENT NOTES:**

Minimum clear distance from face of concrete to nearest reinforcing bar is to be 2" unless otherwise noted on drawing. The maskwall is to be formed before the superstructure deck is poured.

- **Bent Bar Details:**
  - **Concrete Placement Quantities:**
    - Location:
      - Posttensioning
      - Maskwall above construction joint
      - 4" west extension
      - 9" west extension
      - 7" west maskwall
    - Count:
      - 31
      - 147

**REINFORCING BAR LIST - ONE ABUTMENT**

- **Concrete and reinforcing steel quantities are included on the summary quantities sheet.**

**ABUTMENT QUANTITIES**
ABUTMENT NOTES:

MINIMUM CLEAR DISTANCE FROM EDGE OF CONCRETE TO NEAR PROXIMITY OF CONSTRUCTION JOINT S AND TO BE IF OTHERWISE SPECIFIED ON SHEET. THE HANDS OF THE SUPERSTRUCTURE DECK IS FORMED.

CONSTRUCTION JOINT KEYS ARE TO BE FORMED WITH DELETED.

THE PORTION OF THE BACKWALL CONTAINING THE ABUTMENT HANDS OF THE SUPERSTRUCTURE DECK IS TO BE APPLIED TO THE ADJACENT BRIDGE SEEN IN ACCORDANCE WITH THE CURRENT IOWA STATE STANDARD SPECIFICATIONS.

THE COST OF REPAIRING ALL EXPANSION JOINTS, COST OF CONCRETE AND PLACING CONCRETE SEALER IS TO BE INCLINED IN THE PRICE BID FOR "STRUCTURAL CONCRETE."

PAVING SLOTS DOWELS SHALL BE STAINLESS STEEL DEFORMED BAR STAINLESS STEEL - TOTAL (LBS.)

NOTE: ALL DIMENSIONS ARE OUT TO OUT. D = PIN DIA

REINFORCING STEEL - EPOXY COATED - TOTAL (LBS.)

NOTE: ALL DIMENSIONS ARE OUT TO OUT. D = PIN DIA

CONCRETE PLACEMENT QUANTITIES

LOCATION
POSTING AND STEPS
BACKWALL BELOW CONSTR. JOINT
BACKWALL ABOVE CONSTR. JOINT
BEAM STEPS TRANSVERSE
BEAM STEPS LONGITUDINAL
TOTAL (C.Y.)

NOTE: CONCRETE AND REINFORCING STEEL QUANTITIES ARE INCLUDED ON THE SUMMARY QUANTITIES SHEET.

ABUTMENT QUANTITIES

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 2109-BTCD - SHEET NO. 01 - PAGE NO. 04 - ISSUE NO.
ABUTMENT NOTES:

- MINIMUM CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR RESTORATION AREA IS TO BE 2" UNLESS OTHERWISE NOTED ON SHEET. THE MASKWALL IS TO BE FORMED BEFORE THE SUPERSTRUCTURE DECK IS POURED.

- CONSTRUCTION JOINT KEYS ARE TO BE FORMED WITH BEVELED EDGES.

- THE PORTION OF THE BACKWALL CONTAINING THE ABUTMENT ANCHORAGE OF THE EXPANSION DEVICE IS TO BE PLACED AFTER THE SINCE DOWEL IS PLACED.

- CONCRETE SEALER IS TO BE APPLIED TO THE ABUTMENT BRIDGE SEAT IN ACCORDANCE WITH THE CURRENT IOWA DOT STANDARD SPECIFICATIONS.

- THE COST OF PREFORMED EXPANSION JOINT FILLER, AND COST OF FURNISHING AND PLACING CONCRETE SEALER IS TO BE INCLUDED IN THE PRICE BID FOR STRUCTURAL CONCRETE BRIDGE.

- PAVING DOWEL CORRUGATIONS SHALL BE STAINLESS STEEL DEFORMED BAR DOWEL SPACING MEETING THE REQUIREMENTS OF MATERIALS I.M. 452.

- ALL DIMENSIONS ARE OUT TO OUT. D = PIN DIAMETER.

- CONCRETE AND REINFORCING STEEL QUANTITIES ARE INCLUDED ON THE SUMMARY QUANTITIES SHEET.

- THE PORTION OF THE BACKWALL CONTAINING THE ABUTMENT anchors IS TO BE PLACED AFTER THE SINCE DOWEL IS PLACED.

- CONCRETE SEALER IS TO BE APPLIED TO THE ABUTMENT BRIDGE SEAT IN ACCORDANCE WITH THE CURRENT IOWA DOT STANDARD SPECIFICATIONS.

- THE COST OF PREFORMED EXPANSION JOINT FILLER, AND COST OF FURNISHING AND PLACING CONCRETE SEALER IS TO BE INCLUDED IN THE PRICE BID FOR STRUCTURAL CONCRETE BRIDGE.

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- THE COST OF PREFORMED EXPANSION JOINT FILLER, AND COST OF FURNISHING AND PLACING CONCRETE SEALER IS TO BE INCLUDED IN THE PRICE BID FOR STRUCTURAL CONCRETE BRIDGE.

- PAVING DOWEL CORRUGATIONS SHALL BE STAINLESS STEEL DEFORMED BAR DOWEL SPACING MEETING THE REQUIREMENTS OF MATERIALS I.M. 452.
PART LONGITUDINAL SECTION NEAR GUTTER

For details of intermediate diaphragm see design sheet ...l.

NOTE PLUS 3'-4" PVC PIPE WITH EXPANDING FOAM PRIOR TO BACKFILLING BEHIND ABUTMENTS.

CONCRETE SEALER SHALL BE APPLIED TO THE ABUTMENT SEAT AND PRESTRESSED BEAM ENDS IN ACCORDANCE WITH APPENDIX ENDS. 0, 5, 1 OF THE STANDARD SPECIFICATIONS. THE SEALING SHALL INCLUDE PORTIONS OF THE PRESTRESSED BEAM END THAT ARE NOT EMBEDDED IN THE ABUTMENT DIAPHRAGMS AS DETAIL ON THIS SHEET.

CONCRETE SEALER LIMITS FOR PRESTRESSED BEAM

NOTE PVC PIPE 1'-5" 2'-4

A

SECTION A-A

PART PLAN VIEW

SEE DETAIL "A"...
REINFORCING BAR LIST - BRIDGE DECK

<table>
<thead>
<tr>
<th>Location</th>
<th>Bar Diameter</th>
<th>Bar Grade</th>
<th>Bar Length</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deck Transverse Top &amp; Bottom</td>
<td>1&quot;</td>
<td>Grade 60</td>
<td>60'</td>
<td>10</td>
</tr>
<tr>
<td>Deck Longitudinal Top at Piers</td>
<td>2&quot;</td>
<td>Grade 60</td>
<td>60'</td>
<td>10</td>
</tr>
<tr>
<td>Deck Longitudinal Bottom at Piers</td>
<td>2&quot;</td>
<td>Grade 60</td>
<td>60'</td>
<td>10</td>
</tr>
</tbody>
</table>

CONCRETE PLACEMENT DIAGRAM

*Note: All dimensions are out to out. D = Pin Diameter.*

**CONCRETE PLACEMENT QUANTITIES**

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</tr>
</thead>
<tbody>
<tr>
<td>Quantities</td>
<td>Deck Transverse Top at Railing</td>
<td>6'-3</td>
<td>Top of Deck</td>
<td>1&quot; Cl.</td>
<td>2&quot; Cl.</td>
</tr>
<tr>
<td></td>
<td>Deck Longitudinal Top at Piers</td>
<td>6&quot;</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**EPOXY COATED REINFORCING**

*Note: Epoxy coated reinforcing is used to account for the possible addition of a retarding admixture to the concrete.*

CONCRETE AND REINFORCING STEEL QUANTITIES ARE INCLUDED ON THE SUMMARY QUANTITIES SHEET.

CONCRETE TO BE PLACED IN SECTIONS AND SEQUENCES INDICATED.

REINFORCING STEEL EPOXY COATED - TOTAL (LBS.)

NOTE: CONCRETE DECK SHALL BE PLACED IN SECTIONS AND SEQUENCES INDICATED.

CONCRETE PLACEMENT DIAGRAM

ENGINEER SHALL DETERMINE IF A RETARDING ADMIXTURE IS REQUIRED TO MAINTAIN PERMISSIBLE TRANSVERSE DECK PLACEMENT.

ALTERNATE PROCEDURES FOR PLACING DECK CONCRETE MAY BE SUBMITTED FOR APPROVAL TOGETHER WITH A STATEMENT OF THE PROPOSED METHOD AND EVIDENCE THAT THE CONTRACTOR POSSESSES THE NECESSARY EQUIPMENT AND FACILITIES TO ACCOMPLISH THE REQUIRED RESULTS. FOR APPROVED ALTERNATE PROCEDURES THE CONCRETE DECK SHALL BE PLACED IN SECTIONS AND SEQUENCES INDICATED.
CONCRETE PLACEMENT DIAGRAM

NOTE: ALL DIMENSIONS ARE OUT TO OUT. D= PIN DIAMETER.

ENGINEER SHALL DETERMINE IF A RETARDING ADMIXTURE IS REQUIRED TO MAINTAIN
ACCOMPLISH THE REQUIRED RESULTS. FOR APPROVED ALTERNATE PROCEDURES THE
THAT THE CONTRACTOR POSSESSES THE NECESSARY EQUIPMENT AND FACILITIES TO
APPROVAL TOGETHER WITH A STATEMENT OF THE PROPOSED METHOD AND EVIDENCE
ALTERNATE PROCEDURES FOR PLACING DECK CONCRETE MAY BE SUBMITTED FOR
NOTE: CONCRETE DECK SHALL BE PLACED IN SECTIONS AND SEQUENCES INDICATED.

REINFORCING BAR LIST - BRIDGE DECK

REINFORCING BAR LIST - BRIDGE DECK

EPOXY COATED REINFORCING

CONCRETE PLACEMENT QUANTITIES

PERMISSIBLE TRANSVERSE DECK CONSTRUCTION JOINT

DECK, ABUT. & DIAPH. QUANTITIES

PIER DIAPH. ENDS

PIER DIAPH. LONGIT.

PIER DIAPH. LONGIT.

PIER DIAPH. LONGIT.

ABUT. DIAPH.

ABUT. DIAPH. LONGIT.

ABUT. DIAPH. HOOPS

SECTION 1, DECK & ABUT. DIAPH.

SECTION 2, DECK

SECTION 3, DECK & ABUT. DIAPH.

SECTION 4, DECK & PIER DIAPH.

SECTION 5, DECK & PIER DIAPH.

EPOXY COATED REINFORCING

REINFORCING BAR LIST - BRIDGE DECK

CONCRETE PLACEMENT QUANTITIES

PERMISSIBLE TRANSVERSE DECK CONSTRUCTION JOINT

DECK, ABUT. & DIAPH. QUANTITIES

PIER DIAPH. ENDS

PIER DIAPH. LONGIT.

PIER DIAPH. LONGIT.

PIER DIAPH. LONGIT.

ABUT. DIAPH.

ABUT. DIAPH. LONGIT.

ABUT. DIAPH. HOOPS

SECTION 1, DECK & ABUT. DIAPH.

SECTION 2, DECK

SECTION 3, DECK & ABUT. DIAPH.

SECTION 4, DECK & PIER DIAPH.

SECTION 5, DECK & PIER DIAPH.

EPOXY COATED REINFORCING

REINFORCING BAR LIST - BRIDGE DECK

CONCRETE PLACEMENT QUANTITIES

PERMISSIBLE TRANSVERSE DECK CONSTRUCTION JOINT

DECK, ABUT. & DIAPH. QUANTITIES

PIER DIAPH. ENDS

PIER DIAPH. LONGIT.

PIER DIAPH. LONGIT.

PIER DIAPH. LONGIT.

ABUT. DIAPH.

ABUT. DIAPH. LONGIT.

ABUT. DIAPH. HOOPS

SECTION 1, DECK & ABUT. DIAPH.

SECTION 2, DECK

SECTION 3, DECK & ABUT. DIAPH.

SECTION 4, DECK & PIER DIAPH.

SECTION 5, DECK & PIER DIAPH.

EPOXY COATED REINFORCING

REINFORCING BAR LIST - BRIDGE DECK

CONCRETE PLACEMENT QUANTITIES

PERMISSIBLE TRANSVERSE DECK CONSTRUCTION JOINT

DECK, ABUT. & DIAPH. QUANTITIES

PIER DIAPH. ENDS

PIER DIAPH. LONGIT.

PIER DIAPH. LONGIT.

PIER DIAPH. LONGIT.

ABUT. DIAPH.

ABUT. DIAPH. LONGIT.

ABUT. DIAPH. HOOPS

SECTION 1, DECK & ABUT. DIAPH.

SECTION 2, DECK

SECTION 3, DECK & ABUT. DIAPH.

SECTION 4, DECK & PIER DIAPH.

SECTION 5, DECK & PIER DIAPH.

EPOXY COATED REINFORCING

REINFORCING BAR LIST - BRIDGE DECK

CONCRETE PLACEMENT QUANTITIES

PERMISSIBLE TRANSVERSE DECK CONSTRUCTION JOINT

DECK, ABUT. & DIAPH. QUANTITIES

PIER DIAPH. ENDS

PIER DIAPH. LONGIT.

PIER DIAPH. LONGIT.

PIER DIAPH. LONGIT.

ABUT. DIAPH.

ABUT. DIAPH. LONGIT.

ABUT. DIAPH. HOOPS

SECTION 1, DECK & ABUT. DIAPH.

SECTION 2, DECK

SECTION 3, DECK & ABUT. DIAPH.

SECTION 4, DECK & PIER DIAPH.

SECTION 5, DECK & PIER DIAPH.
NOTE: CONCRETE AND REINFORCING STEEL QUANTITIES ARE INCLUDED ON THE SUMMARY QUANTITIES SHEET.
### Concrete Placement Diagram

Note: Concrete deck should be placed in sections and sequences indicated.

Alternate procedures for placing deck concrete may be submitted for approval together with a statement of the proposed method and evidence that the contractor possesses the necessary equipment and facilities to accomplish the required results. For approved alternate procedures, the engineer shall indicate at a retaining advantage is modified to maintain plasticity of concrete deck during placement.

### Concrete Placement Quantities

<table>
<thead>
<tr>
<th>Location</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section 1, Deck &amp; Abut.</td>
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<tr>
<td>Section 2, Deck &amp; Abut.</td>
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<tr>
<td>Section 3, Deck &amp; Transv.</td>
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<tr>
<td>Section 4, Deck &amp; Pier Diaph.</td>
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</tr>
<tr>
<td>Section 5, Deck &amp; Pier Diaph.</td>
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</tbody>
</table>

Note: Concrete and reinforcing steel quantities are included on the summary quantities sheet.

### Rebar List - Bridge Deck

#### Reinforcing Bar List - Bridge Deck

<table>
<thead>
<tr>
<th>Bar Location</th>
<th>Quantity</th>
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</thead>
<tbody>
<tr>
<td>Deck Transv. Top &amp; Bottom</td>
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</tr>
<tr>
<td>Deck Transv. Edges</td>
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</tr>
<tr>
<td>Pier Diaph. Ends</td>
<td></td>
</tr>
<tr>
<td>Pier Diaph. Top &amp; Bottom</td>
<td></td>
</tr>
<tr>
<td>Pier Diaph. Longitudinal</td>
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</tr>
<tr>
<td>Pier Diaph. Transverse</td>
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<tr>
<td>Pier Diaph. Hoops</td>
<td></td>
</tr>
<tr>
<td>Pier Diaph. Ties</td>
<td></td>
</tr>
<tr>
<td>Deck Transv. Top (at rail)</td>
<td>0-3</td>
</tr>
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#### Epoxy Coated Reinforcing

<table>
<thead>
<tr>
<th>Location</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deck, Abut. &amp; Diaph. Quantities</td>
<td></td>
</tr>
<tr>
<td>Deck, Abut. &amp; Diaph. Quantities</td>
<td></td>
</tr>
<tr>
<td>Deck, Abut. &amp; Diaph. Quantities</td>
<td></td>
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<tr>
<td>Deck, Abut. &amp; Diaph. Quantities</td>
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<td>Deck, Abut. &amp; Diaph. Quantities</td>
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<td>Deck, Abut. &amp; Diaph. Quantities</td>
<td></td>
</tr>
<tr>
<td>Deck, Abut. &amp; Diaph. Quantities</td>
<td></td>
</tr>
</tbody>
</table>

### Bents Bar Details

### Deck, Abut. & Diaph. Quantities

**Iowa Department of Transportation - Highway Division**

**Project Number**

**Sheet Number**

**Design Team**

**Sheet Name**

**File No.**

**Design No.**

**Count**

**Project Name**

**PDF Name**

**Date**

**Time**

**File Size**

**Thread**
TABLE OF SIZE OF 'b2' BAR

<table>
<thead>
<tr>
<th>SIZE</th>
<th>STD BAR SIZE</th>
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<tbody>
<tr>
<td>3/4</td>
<td>--</td>
</tr>
<tr>
<td>1</td>
<td>--</td>
</tr>
<tr>
<td>1-1/4</td>
<td>--</td>
</tr>
<tr>
<td>1-1/2</td>
<td>--</td>
</tr>
<tr>
<td>1-3/8</td>
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<tr>
<td>1-7/8</td>
<td>--</td>
</tr>
<tr>
<td>2</td>
<td>--</td>
</tr>
<tr>
<td>2-1/4</td>
<td>--</td>
</tr>
<tr>
<td>2-1/2</td>
<td>--</td>
</tr>
<tr>
<td>2-3/4</td>
<td>--</td>
</tr>
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<td>3</td>
<td>--</td>
</tr>
<tr>
<td>3-1/8</td>
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</tr>
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<td>4</td>
<td>--</td>
</tr>
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<td>4-1/2</td>
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<td>4-3/4</td>
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<td>5</td>
<td>--</td>
</tr>
<tr>
<td>5-1/8</td>
<td>--</td>
</tr>
<tr>
<td>5-1/4</td>
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</tr>
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<td>5-3/4</td>
<td>--</td>
</tr>
<tr>
<td>6</td>
<td>--</td>
</tr>
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</tr>
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<td>8</td>
<td>--</td>
</tr>
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<td>10</td>
<td>--</td>
</tr>
<tr>
<td>12</td>
<td>--</td>
</tr>
</tbody>
</table>

THE MIDPOINT OF THE TOP BAR IS TO BE PLACED AT THE E OF PIER.
* INDICATES 'b2' BAR PLACED IN TOP DECK ONLY.

INTERIOR BEAMS

EXTERIOR BEAMS

TYPICAL DECK AND HAUNCH DETAIL

DATA FOR ONE DRAIN

NOTE: STAINLESS STEEL LEVEL OR "REBAR EPOXY" A LEVEL SHOULD BE ON OR OFF DEPENDING ON BARRIER RAIL STEEL EMBEDDED IN THE BRIDGE DECK.
**INDICATES 'b2' BAR PLACED IN TOP DECK ONLY.**

**FOR DECK THICKNESS OVER BEAMS SEE TYPICAL DECK AND TABLE OF LEVEL**

**NOTE:** DRAIN WEIGHTS ARE INCLUDED IN THE QUANTITY FOR "______

**DATA FOR ONE DRAIN**

<table>
<thead>
<tr>
<th>Beam Type</th>
<th>Type</th>
<th>Drain Weight (lbs)</th>
<th>Number per Area</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**DESIGN SHEET ____.

**NOTE:** FOR DETAILS OF INTERMEDIATE DIAPHRAGMS SEE DESIGN SHEET ____.

**SUPERSTRUCTURE NOTES:**

1. **INTERIOR BEAMS**
   - Straight line between haunches
   - Straight line between buildings

2. **EXTERIOR BEAMS**
   - Typical deck and haunch detail
   - Bars in top of slab
   - Bars in bottom of slab

3. **DRAIN DETAILS**
   - Note: Bars in top of slab
   - Bars in bottom of slab

4. **SUMMARY QUANTITIES**
   - Included on the summary quantities sheet

5. **DATA FOR ONE DRAIN**
   - Beam Type
   - Drain Weight (lbs)
   - Number per Area

**NOTE:** "STAINLESS STEEL" LEVEL OR "REBAR EPOXY A" LEVEL SHOULD BE ON OR OFF DEPENDING ON BARRIER RAIL STEEL EMBEDDED IN THE BRIDGE DECK.
TABLE OF SIZE OF 'b2' BAR

<table>
<thead>
<tr>
<th>LENGTH</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>30'-0</td>
<td></td>
</tr>
<tr>
<td>45'-0</td>
<td></td>
</tr>
<tr>
<td>60'-0</td>
<td></td>
</tr>
<tr>
<td>75'-0</td>
<td></td>
</tr>
<tr>
<td>90'-0</td>
<td></td>
</tr>
<tr>
<td>105'-0</td>
<td></td>
</tr>
<tr>
<td>120'-0</td>
<td></td>
</tr>
<tr>
<td>135'-0</td>
<td></td>
</tr>
<tr>
<td>150'-0</td>
<td></td>
</tr>
</tbody>
</table>

THE MIDPOINT OF THE 'b2' BAR IS TO BE PLACED AT THE END OF PIER.

** INDICATES 'b2' BAR PLACED IN TOP DECK ONLY.

NOTE FOR DETAILS OF INTERMEDIATE DIAPHRAGMS SEE DESIGN SHEET ....

SUPERSTRUCTURE NOTES:

THE DECK AS SHOWN INCLUDES 1" INTERNAL REINFORCING SURFACE.

THE PIER AND ABUTMENT DIAPHRAGM CONCRETE IS TO BE PLACED MONOLITICALLY WITH THE BRIDGE DECK.

COIL ROD (BENT)

COIL ROD (BENT)

NOTE: "STAINLESS STEEL" LEVEL OR "REBAR EPOXY A" LEVEL

DEPENDING ON BARRIER RAIL STEEL EMBEDDED DEPENDING ON BARRIER RAIL STEEL EMBEDDED IN THE BRIDGE DECK.

FOR DETAILS OF REINFORCING SEE SUMMARY QUANTITIES SHEET.
**INDICATES 'b2' BAR PLACED IN TOP DECK ONLY.**

THE MIDPOINT OF THE 'b2' BAR IS TO BE
8" DRIP
LONGEST
SIZE OF 'b2' BAR 105'-0
110'-0
TOP OF DECK 155'-0
140'-0
130'-0
125'-0
120'-0
115'-0
30'-0
75'-0
70'-0
65'-0
60'-0
45'-0
85'-0

**NOTES**
- **HAUNCH AND CAMBER DETAILS ON TYPICAL DECK AND SLAB AREA DOES NOT INCLUDE THE HAUNCH.**
- **DATA FOR ONE DRAIN**
  - **BEAM SIZE**
  - **DRAIN WEIGHT (`LBS.`)**
  - **DRAIN DETAILS**
  - **NOTE: DRAIN WEIGHTS ARE DEPENDING ON BARRIER RAIL STEEL EPOXY A LEVEL SHOULD BE ON OR OFF.**
  - **TRANSVERSE DECK REINFORCING MAY BE SPliced WITH ONE LAP LOCATION AS FOLLOWS:**
  - **NOTE: *STAINLESS STEEL* LEVEL OR "REBAR EPOXY A" LEVEL SHOULD BE ON OR OFF DEPENDING ON BARRIER RAIL STEEL EMBEDDED IN THE BRIDGE DECK."
**TABLE OF SIZE OF 'b2' BAR**

<table>
<thead>
<tr>
<th>LENGTH (FT)</th>
<th>35'-0</th>
<th>30'-0</th>
<th>25'-0</th>
<th>20'-0</th>
<th>15'-0</th>
<th>10'-0</th>
<th>5'-0</th>
<th>0'-0</th>
</tr>
</thead>
<tbody>
<tr>
<td>BAR SIZE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5e3</td>
<td></td>
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<td></td>
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<td></td>
</tr>
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<td></td>
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<td></td>
</tr>
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<td>5e6</td>
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</tr>
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</tr>
<tr>
<td>6d3</td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>6d5</td>
<td></td>
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</tr>
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<td>6d9</td>
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<td></td>
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<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**INTERIOR BEAMS**

**EXTERIOR BEAMS**

**TYPICAL DECK AND HAUNCH DETAIL**

A FOR DECK REINFORCING SEE SHEET 4559-BTE-5 SHEET 4559-BTE-5.

**DATA FOR ONE DRAIN**

- **REBAR SIZE**
  - 5e3
  - 5e4
  - 5e5
  - 5e6
  - 5e7
  - 6d2
  - 6d3
  - 6d4
  - 6d5
  - 6d6
  - 6d7
  - 6d8
  - 6d9
  - 6e0

**HALF SECTION NEAR ABUTMENT**

- **SLAB AREA** = 29.27 SQ. FT.
- **DRAIN DETAIL**
  - **HAUNCH DETAIL**
    - **LEVEL**
    - **DEPRESSION IN DECK CONCRETE**
      - **TOP OF DECK**
        - **HAUNCH DETAIL**
          - **LEVEL**
            - **DEPRESSION IN DECK CONCRETE**
              - **TOP OF DECK**

**HALF SECTION NEAR PIER**

- **SUPERSTRUCTURE NOTES:**
  - The bridge deck as shown includes 2 integral ramps.
  - The pier and abutment are shown in concrete.
  - All reinforcing is to be included in the price.
  - The pier and abutment are shown in concrete.

- **NOTES:**
  - For details of intermediate diaphragms see design sheet.

- **HALF SECTION NEAR PIER** (Fixed Pier Shown)

- **NOTES:**
  - Stainless Steel Level or Rebar Epoxy A Level should be on or off depending on Barrier Rail Steel embedded.
**TABLE OF SIZE OF 'b2' BAR**

<table>
<thead>
<tr>
<th>LENGTH</th>
<th>ROADING SPAN</th>
<th>B/E</th>
<th>BEAM BAR SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>35'-0</td>
<td>60'-0</td>
<td>#3</td>
<td>1'-0</td>
</tr>
<tr>
<td>30'-0</td>
<td>60'-0</td>
<td>#3</td>
<td>1'-0</td>
</tr>
<tr>
<td>25'-0</td>
<td>60'-0</td>
<td>#3</td>
<td>1'-0</td>
</tr>
<tr>
<td>20'-0</td>
<td>60'-0</td>
<td>#3</td>
<td>1'-0</td>
</tr>
<tr>
<td>15'-0</td>
<td>60'-0</td>
<td>#3</td>
<td>1'-0</td>
</tr>
<tr>
<td>10'-0</td>
<td>60'-0</td>
<td>#3</td>
<td>1'-0</td>
</tr>
<tr>
<td>5'-0</td>
<td>60'-0</td>
<td>#3</td>
<td>1'-0</td>
</tr>
</tbody>
</table>

*Indicates 'b2' Bar placed in top deck only.*

**NOTES FOR DETAILS OF INTERMEDIATE DIAPHRAGMS SEE DESIGN SHEET...**

**SUPERSTRUCTURE NOTES:**

- The bridge deck as shown includes an integral wearing surface.
- The pier and abutment diaphragm concrete is to be placed monolithically with the bridge deck.
- Cost of all required expansion joint filler material is to be included in the price bid for "Structural Concrete (Bridge)."
- All beams to be set vertically.
- Forms for the bridge deck and barrier rail are to be supported by the prestressed concrete beams.
- Barrier rail supports are to be set vertically.
- All beams and diaphragm reinforcing is to be placed in place and adequately supported before concrete is placed.
- Full transverse reinforcing steel is to be parallel to and clear of deck beams. Bottom transverse reinforcing steel is to be parallel to and clear of bottom of deck beams. Top transverse reinforcing steel is to be parallel to and clear of top of deck beams. Bottom transverse reinforcing steel is to be supported by individual bar chairs spaced not more than 2'-0 centers longitudinally and transversely, or by continuous rows of bar chair自查行 spacing 2'-0 apart. Laps of bar chairs are to be supported by individual bar chairs of bar rail chairs and deck bolts. Transverse reinforcing may be spliced with lap located as follows:
  - Lap width between beams (R - L' + Y) = 1'-0.
  - Bottom bar - lap splice shall be located 2'-0.
- Payment for concrete reinforcing steel shall be based on the actual length placed, and no allowance shall be made for the additional length of bar required for lap splices. Depending on barrier rail steel embedded in the bridge deck.

**INTERIOR BEAMS**

- Straight line between abutments.
- Level.
- Drain details:
  - Steel plate (Bent) 1'-0 x 4" x 4" outside dimension.
  - Notch in deck concrete at drain.
  - Lintel bar placed to both sides of drain with 2 1/2" bars in each outside leg.

**HAUNCH DETAIL**

- Interior beams.
- Straight line between abutments.
- Top of deck.
- Drain details.

**HAUNCH AND CAMBER DETAILS ON TOP AND BOTTOM REINFORCING STEEL IS TO BE PARALLEL TO AND 1" CLEAR ABOVE BOTTOM OF DECK.**

**DATA FOR ONE DRAIN**

<table>
<thead>
<tr>
<th>ITEM NAME</th>
<th>AMOUNT</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHAINAGE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GROSS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NET</td>
<td></td>
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</table>
**TABLE OF SIZE OF 'b2' BAR**

**TABLE OF SIZE OF 'b2' BAR**

<table>
<thead>
<tr>
<th>Size (in)</th>
<th>Number of Bars</th>
<th>Type of Bar</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4</td>
<td>2</td>
<td>REBAR</td>
</tr>
<tr>
<td>3/8</td>
<td>3</td>
<td>REBAR</td>
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<tr>
<td>1/2</td>
<td>4</td>
<td>REBAR</td>
</tr>
<tr>
<td>5/8</td>
<td>5</td>
<td>REBAR</td>
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<td>7</td>
<td>REBAR</td>
</tr>
<tr>
<td>1</td>
<td>8</td>
<td>REBAR</td>
</tr>
</tbody>
</table>

**TOP OF DECK**

- **Straight line between Haunches**

**INTERIOR BEAMS**

- **Straight line between Haunches**

**EXTERIOR BEAMS**

- **Typical deck and haunch detail**

**DATA FOR ONE DRAIN**

- **Beam size**
- **Drain area**
- **Drain depth (in)**
- **Drain length (in)**

**SUPERSTRUCTURE NOTES:**

- The bridge deck as shown includes a 7-inch integral wearing surface.
- The pier and abutment diaphragm concrete is to be placed monolithically with the bridge deck.
- The pier and abutment diaphragm concrete is to be placed monolithically with the bridge deck.
- All beams are to be set vertically.
- Forms for the bridge deck and barrier rail are to be supported by the prestressed concrete beams.
- Clear distance from face of concrete to near reinforcing bars shall be 2 inches unless otherwise specified on plans.
- All deck and spar reinforcement is to be placed in place and adequately supported before concrete is placed.
- Top transverse reinforcing steel is to be parallel to and 2" clear below top of deck. Bottom transverse reinforcing steel shall be parallel to and 2" clear below top of deck. Bottom transverse reinforcing steel shall be parallel to and 2" clear below top of deck.
- All reinforcing steel shall be supported by individual bar chairs spaced at not more than 3'-0" centers longitudinally and transversely, or by continuous rows of bar chairs or deck spacers spaced 3'-0" apart. All reinforcing steel shall be parallel to and 2" clear below top of deck. Bottom transverse reinforcing steel shall be parallel to and 2" clear below top of deck.
- Transverse reinforcing may be placed with one lap located as follows:
  - Top of deck: between beams (supplied): 1'-10".
  - Bottom of deck: between beams (supplied): 1'-10".
- Payment for reinforcement on top of deck shall be made for the additional length of bar required for the lap.

**CORRECTION 04-14**

- Add reference note to summary quantities sheet about choice of epoxy or stainless steel deck to barrier rail bars.

**CORRECTION 04-14**

- Add reference note to summary quantities sheet about choice of epoxy or stainless steel deck to barrier rail bars.
**CORRECTION 04-14 - ADDED REFERENCE NOTE TO SUMMARY QUANTITIES SHEET ABOUT CHOICE OF EPOXY OR STAINLESS STEEL TO BARRIER RAIL BARS.**

**ENGLISH BT STUB ABUTMENT BRIDGES.

---

**TABLE OF SIZE OF 'b2' BAR**

<table>
<thead>
<tr>
<th>LENGTH OF BAR (IN)</th>
<th>STEEL TYPE</th>
<th>BARS PER SHEET</th>
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</thead>
<tbody>
<tr>
<td>30</td>
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<td>40</td>
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<tr>
<td>200</td>
<td></td>
<td>5</td>
</tr>
</tbody>
</table>

**THE WEIGHT OF THE TOP BAR IS TO BE PLACED AT THE END OF THE PIER.**

**INDICATES 'b2' BAR PLACED IN TOP DECK ONLY.**

---

**INTERIOR BEAMS**

**EXTERIOR BEAMS**

**TYPICAL DECK AND HAUNCH DETAIL**

- A DRAIN IS REQUIRED OVER HEA HAUNCH AND CAMBER DETAILS ON DESIGN SHEET...

**DATA FOR ONE DRAIN**

<table>
<thead>
<tr>
<th>BA Mint</th>
<th>Chain Weight (lbs)</th>
<th>Rte</th>
</tr>
</thead>
<tbody>
<tr>
<td>b2</td>
<td>279</td>
<td>Rte</td>
</tr>
</tbody>
</table>

**SUPERSTRUCTURE NOTES:**

- **THE BRIDGE DECK AS DRAWN INCLUDES AN INTEGRAL WEARING SURFACE.**
- **THE PIER AND ABUTMENT CONCRETE CONCRETE IS TO BE PlACED MONOLITHICALLY WITH THE BRIDGE DECK.**
- **THE COST OF ALL PRECAST AND EXPANDED JOINT FILLER MATERIAL IS TO BE INCLUDED IN THE PRICE RIB FOR 'STRUCTURAL CONCRETE.'**
- **ALL BEAMS ARE TO BE SET VERTICALLY.**
- **FORMS FOR THE BRIDGE DECK AND BARRIER RAIL ARE TO BE SUPPORTED BY THE PRECASTED CONCRETE BEAMS.**
- **CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BARS SHALL BE 2 INCHES UNLESS OTHERWISE SHOWN.**
- **ALL DECK AND DIAPHRAGM REINFORCEMENT IS TO BE PLACED IN PLACE AND AD Suitably SUPPORTED BEFORE CONCRETE IS PLACED.**
- **TOP TRANSVERSE REINFORCEMENT STEEL IS TO BE PARALLEL TO AND 2 CLEAR DEPTH FROM TOP OF DECK. BOTTOM TRANSVERSE REINFORCEMENT STEEL IS TO BE PARALLEL TO AND 2 CLEAR DEPTH FROM BOTTOM OF DECK.**
- **TOP AND BOTTOM REINFORCEMENT STEEL IS TO BE SUPPORTED BY INDIVIDUAL BAR CHAIRS SPACED AT NOT MORE THAN 3 FEET CENTERED LONGITUDINALLY AND TRANSVERSELY, OR BY CONTINUOUS ROWS OF BAR MOUNT CHAIRS OR DECK BOLSTERS SPACED 3 FEET APART.**
- **WEIGHT OF DRAINS IS INCLUDED IN THE QUANTITY FOR '____.' DRAINS ARE TO BE GALVANIZED. **

**NOTES FOR DETAILS OF INTERMEDIATE DIAPHRAGMS SEE DESIGN SHEET....**

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**ADDITIONAL INFORMATION:**

- **FOR DETAILS OF PRECAST EXPANSION JOINT FILLER, SEE STANDARD DETAILS.**
- **PAYMENT FOR REINFORCING BARS SHALL BE BASED ON NO SPLICES, AND NO ALLOWANCE SHALL BE MADE FOR THE ADDITIONAL LENGTH OF BARS REQUIRED FOR THE USE OF SPLICES.**
- **NOTE: "STAINLESS STEEL" LEVELS SHOULD BE ON OR OFF DEPENDING ON BARRIER RAIL STEEL EMBEDDED IN THE BRIDGE DECK.**