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<td>2114</td>
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**REVISED 05-2016 - CORRECTED TYPO.**

**REVISED 07-2019: CHANGED STANDARD SHEETS 1065 & 1066 TITLES REFERRING TO "SLAB" TO "DECK".**

**REVISED 03-2022: NOW VOID ARE STANDARD SHEETS 1035, 1035A, 1035B, 1035C, 1035D, 1035E WERE REMOVED FROM INDEX OF SHEETS.**
**REINFORCING STEEL**

**PUT ON SUPERSTRUCTURE BAR LIST SHEET.**

If the precast prestressed concrete deck panels are to be used in construction of the bridge deck in lieu of the conventional cast-in-place deck, the following adjustments to the superstructure epoxy coated reinforcing steel shall be made:

**ADJUSTMENTS TO EPOXY COATED REINFORCING STEEL**

<table>
<thead>
<tr>
<th>BAR</th>
<th>LOCATION</th>
<th>SHAPE</th>
<th>NO. LENGTH</th>
<th>WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**PUT ON BEAM SHEET.**

**DECK PANEL LOCATION PART PLAN**

**NOTE:** Areas outside of panel sections are full depth cast-in-place slab and diaphragm. Alternate detail of using full depth cast-in-place slab at the skewed ends may be submitted for approval.
Pile Splice Notes:

1. All piles are required to have a pile splice plate "A" installed in the upper end of the pile to facilitate pile extension. In the event the plan length piles are cased or driven piles, the splice plate details shall be as detailed on this sheet.

2. The maximum length for an individual section of pile shall be 50 feet. Pile lengths greater than 50 feet are required on the plans. The splice plates shall be used to fasten pile sections together to provide the required plan length. The pile splice detail shall be included on the plans. After first section of pile is driven, 5t of structural steel required for pile splice plate shall be considered incidental to price bid for prestressed concrete piling - 4 ft.

Specifications:


- Pile Splice Notes: All piles are required to have a pile splice plate "A" installed in the upper end of the pile to facilitate pile extension. In the event the plan length piles are cased or driven piles, the splice plate details shall be as detailed on this sheet. The maximum length for an individual section of pile shall be 50 feet. Pile lengths greater than 50 feet are required on the plans. The splice plates shall be used to fasten pile sections together to provide the required plan length. The pile splice detail shall be included on the plans. After first section of pile is driven, 5t of structural steel required for pile splice plate shall be considered incidental to price bid for prestressed concrete piling - 4 ft.

Design Stresses:

- Design stresses for the following materials are in accordance with the AASHTO LRFD Bridge Design Specifications, 7th Edition, Series of 2014.

- Concrete: 5,000 psi

- Prestressing steel: 270,000 psi

- Structural steel: 200,000 psi

Material Components:

- Concrete: 5,000 psi

- Prestressing steel: 270,000 psi

- Structural steel: 200,000 psi
**CONCRETE TEMPORARY BARRIER RAIL NOTES:**

Concrete temporary barrier rail shall be constructed as detailed and noted on the standard road plans BA-401 for temporary barrier rail. Precast concrete barriers are required only where the temporary barrier rail is adjacent to a drop-off 30" min. when the temporary barrier rail is adjacent to a drop-off.

Remove clouded areas to determine number of sections.

Concrete temporary barrier rail shall be constructed in accordance with the temporary barrier rail. No stationary equipment or construction material is to be placed in front of the temporary barrier rail at any time. Traffic control to be established in conjunction with the temporary barrier rail. See standard road plan BA-401 for temporary crash cushions and barrel. See standard road plan BA-500 for temporary crash cushions and barrel.

Cost of temporary crash cushions to be included with roadway bid items.

### ESTIMATED QUANTITIES

<table>
<thead>
<tr>
<th>ITEM REFERENCE</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>F-SHAPE TEMP. BARR. RAIL-CONC.</td>
<td></td>
</tr>
</tbody>
</table>
TEMPORARY BARRIER RAIL, CONCRETE

35 mph POSTED SPEED LIMIT

USED IN URBAN CONDITIONS WITH LESS THAN

CONCRETE TAPERED SECTIONS CAN ONLY BE


ANCHORS ARE REQUIRED ONLY WHERE THE TEMPORARY BARRIER RAIL IS ADJACENT TO A DROP-OFF.

REMOVE CLOUDED AREAS

ESTIMATED QUANTITIES

ITEM

AMOUNT

TEMPORARY BARRIER RAIL, CONCRETE

L.F.

ALL TEMPORARY BARRIER RAIL SHALL BE NOMINAL 12'-6 LONG CONCRETE UNITS.

F-SHAPE TEMP. BARR. RAIL-CONC.
TEMPORARY CONCRETE BARRIER RAIL LAYOUT
FOR TWO WAY TRAFFIC

NOTE:
See Standard Plan BA-500 for Temporary Crash Cushions and barrels.
Cost of temporary crash cushions to be included with roadway bid items.

BRIDGE END A
BRIDGE END B

TEMPORARY BARRIER RAIL (PRECAST CONCRETE)

CONCRETE TEMPORARY BARRIER RAIL NOTES:
Concrete temporary barrier rail shall be constructed as detailed and noted.
On the standard road plans BA-401 for temporary barrier rail, precast concrete,
refer to other details, notes and quantity items elsewhere in these plans for
traffic control to be established in conjunction with the temporary barrier rail.
No stationary equipment or construction material is to be placed in front of the
temporary barrier rail at any time.
Anchors are required only where the temporary barrier rail is adjacent to a drop-off
where anchors are required. See standard road plans BA-401 for temporary barrier
rail, precast concrete, for details. Holes for concrete anchors may be drilled
after positioning the temporary barrier rail.

MARKER DETAILS

CONSTRUCTION
TRAFFIC
TOP OF BARRIER RAIL
MARKER

TOP OF CURB
GUTTER LINE
NOTE: COLOR OF MARKER SHALL BE
APPROPRIATE FOR EDGE LINE.

WHITE
WHITE
WHITE
WHITE

STORAGE AREA
WORK AREA
END OF WORK AREA
WORK AND STORAGE AREAS
STORAGE AREA

F-SHAPE TEMP. BARR. RAIL-CONC.

ESTIMATED QUANTITIES

ITEM
TEMPORARY BARRIER RAIL, CONCRETE

AMOUNT
LF

ITEM REFERENCES:
All temporary barrier rail shall be nominal 12'-6 long concrete units.
STEEL TEMPORARY BARRIER RAIL NOTES

STEEL HP14x73 Temporary Barrier Rails shall be constructed as detailed and noted on the Standard Road Plans BA-400 for Temporary Barrier Rail (Steel). HP14x73 sections are to be joined before PC concrete fill is placed. HP sections may be joined by but welds on both exterior faces as detailed or by other means approved by the engineer. HP sections shall be free from excessive sweep and camber. Straightening may be required by the engineer in order to produce a stable barrier.

Concrete mix for the PC fill may be any Iowa DOT Construction Specification mix or may be a commercial ready-mix with a minimum PC 2,500 psi. The PC fill may be deposited by a method acceptable to the engineer. Limits of fill shown are approximate and may be rough or slumped depending on the method of placing.

Temporary Crash Cushions

See Standard Road Plan BA-400 for temporary crash cushions and sand barrel. The number of sections to be included in the price bid for temporary crash cushions to be included is determined by computing the length of the temporary barrier rail.

TRAFFIC MARKERS SHALL BE A RETRO-REFLECTIVE TYPE, IN ACCORDANCE WITH MATERIALS LAH-4620. THEY SHALL BE LOCATED AS SHOWN ON THIS SHEET. THE CONTRACTOR SHALL MARK THE MARKERS AND SHALL PROMPTLY REPLACE ANY MISSING OR DAMAGED UNITS. ALL COSTS FOR FURNISHING, INSTALLING AND MAINTAINING MARKERS SHALL BE INCLUDED IN THE PRICE BID FOR temporary barrier rail.

 carrier rail (Steel) for details. Holes for concrete anchors may be drilled at the contract time per local, based on plan quantities. Price bid for temporary barrier rail shall be in all compensation for furnishing all material, and all of the equipment and labor required to erect the rail in accordance with these plans and current specifications.

MINIMUMS ARE REQUIRED ONLY WHERE THE TEMPORARY BARRIER RAIL IS ADJACENT TO A DROP-OFF, AND MINIMUMS ARE REQUIRED FOR STANDARD ROAD PLAN BA-400 FOR TEMPORARY BARRIER RAIL. STEEL FOR DETAILS, NOTED FOR CONCRETE anchors may be drilled after positioning the temporary barrier rail.

NOTE: COLOR OF MARKER SHALL BE APPROVED BY THE ENGINEER. NO STATIONARY EQUIPMENT OR CONSTRUCTION MATERIAL IS TO BE PLACED IN FRONT OF THE WORK AREA. TRAFFIC CONTROL TO BE ESTABLISHED IN CONJUNCTION WITH THE TEMPORARY BARRIER RAIL.

NOTE: CONCRETE MIX FOR THE PC FILL MAY BE ANY IOWA DOT CONSTRUCTION SPECIFICATION MIX OR MAY BE A COMMERCIAL READY-MIX WITH A MINIMUM PC 2,500 PSI. THE PC FILL MAY BE DEPOSITED BY A METHOD ACCEPTABLE TO THE ENGINEER. LIMITS OF FILL SHOWN ARE APPROXIMATE AND MAY BE ROUGH OR SLUMPED DEPENDING ON THE METHOD OF PLACING.

NOTE: STEEL HP14x73 TEMPORARY BARRIER RAIL is to be bid on a linear foot basis. The number of linear feet of temporary barrier rail installed shall be paid for at the contract time per linear foot based on plan quantities. Price bid for temporary barrier rail shall include all compensation for furnishing all materials, and all of the equipment and labor required to erect the rail in accordance with these plans and current specifications.

Temporary Barrier Rail Layout for Two Way Traffic

NOTE: USE STANDARD ROAD PLAN BA-400 FOR TEMPORARY CRASH CUSHIONS AND SAND BARREL.

NOTE: COST OF TEMPORARY CRASH CUSHIONS TO BE INCLUDED IN THE PRICE BID FOR TEMPORARY BARRIER RAIL, STEEL.

NOTE: ENSURE TO INCLUDE ALL CONNECTION MATERIAL TO BE INCLUDED IN THE PRICE BID FOR TEMPORARY BARRIER RAIL, STEEL.

NOTE: TO DETERMINE NUMBER OF SECTIONS, REMOVE CLOUDS.

Temporary Barrier Rail Sections Work and Storage Areas

Estimated Quantities

Temporary Barrier Rail Steel

<table>
<thead>
<tr>
<th>Item</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>STEEL HP14X73 TEMP. BARR. RAIL</td>
<td>LF</td>
</tr>
</tbody>
</table>

Notes:

1. All connection material is to be included in the price bid for temporary barrier rail, steel.

2. Layout shown is for one stage of construction and will be a mirror image for the other stage.

3. See Standard Road Plan BA-400 for temporary crash cushions and sand barrel.

4. All connection material is to be included in the price bid for temporary barrier rail, steel.

5. Marker color shall be approved by the Engineer.

6. No stationary equipment or construction material is to be placed in front of the work area. Traffic control to be established in conjunction with the temporary barrier rail.

7. The temporary barrier rail is to be bid on a linear foot basis. The number of linear feet of temporary barrier rail installed shall be paid for at the contract time per linear foot based on plan quantities. Price bid for temporary barrier rail shall include all compensation for furnishing all materials, and all of the equipment and labor required to erect the rail in accordance with these plans and current specifications.

8. All connection material is to be included in the price bid for temporary barrier rail, steel.
**STEEL TEMPORARY BARRIER RAIL NOTES**

The steel HP14x73 temporary barrier rail shall be constructed as detailed and noted on the standard road plans BA-400 for temporary barrier rail (steel). If any sections are to be joined before the concrete fill is placed, HP sections may be joined by butt welds on both exterior faces as detailed on the standard road plans. Sections shall be free from excessive sweep and camber. Straining may be required by the engineer in order to produce a stable barrier. The HP sections for the P.C. fill may be any commercial type with a minimum F'C = 2500 P.S.I. and shall be free from excessive sweep and camber. A truss type HP section is to be used for any section that may be located away from the edge of the roadway, or where road conditions or lane widths may require it.

**MARKER DETAILS**

- Steel HP14x73 temporary barrier rail sections work and storage areas
- Steel HP14x73 temporary barrier rail layout for one way traffic
- Noted on the standard road plans BA-400 for temporary barrier rail (steel).
- All connection material is to be included in the price bid for "temporary barrier rail, steel".
- Cost of temporary crash cushions to be included with nearby bid items.
- See standard road plan BA-400 for temporary crash cushions sand barrel.
DECK REINFORCING MAT AND MAINTAIN THE 4" MINIMUM DIMENSION SHOWN.

THE 5a4 BARS MAY BE TILTED AS NECESSARY TO FIT UNDER THE TOP OF DES. SHTS. ??, ?? & ?? THAT EXTEND FROM THE BEAMS INTO THE DECK HAUNCH.

PLACE ONE 5a3 BAR ADJACENT TO EACH #4 BEAM STIRRUP ( 4b1 BARS ON

NOTE: N O M I N A L  D E C K  T H I C K N E S S

A T  B E A M S  I N C L U D E S

D E C K  +   " H A U N C H

BEAMS INCLUDES

THICKNESS AT

DECK IN PLACE

DECK IN PLACE

DECK IN PLACE

DECK IN PLACE

DECK IN PLACE

DECK IN PLACE

DECK IN PLACE

DECK IN PLACE

DECK IN PLACE

DECK IN PLACE

DECK IN PLACE


R E V I S E D  0 7 - 2 0 1 9 : C H A N G E D  A L L  R E F E R E N C E S  O F  "S L A B " T O  "D E C K ".


2/24/2022   11:34:27 AM

REQUIRED FOR CONSTRUCTION.

ADDITIONAL INFORMATION TO AID THE CONTRACTOR IN SETTING THE FIELD HAUNCHES

AND ESTIMATE CONCRETE QUANTITIES. REFER TO THE HAUNCH DATA DETAILS SHEET FOR

AND DEFLECTIONS. THESE VALUES ARE USED BY THE DESIGNER TO SET BEAM ELEVATIONS

NOTE: THE DECK THICKNESS (T) AT BEAMS IS BASED ON THE ANTICIPATED BEAM CAMBER

K E E P

T'

M A X

TOP OF DECK

EXAMPLES OUTSIDE OF SHEET

BEAM CAMBER DATA

DECK THICKNESS AT BEAMS (T)

HAUNCH REINFORCING LAYOUT

SECTION THRU DECK HAUNCH

KEEP

T'

DECK THICKNESS AT BEAMS (T)

DECK THICKNESS DETAILS

IOWA DEPARTMENT OF TRANSPORTATION

DECK THICKNESS DETAILS

COUNTY

DESIGN SHEET NO.

STANDARD SHEET 1065
**MISCELLANEOUS DATA TABLE**

<table>
<thead>
<tr>
<th>Beam Line</th>
<th>( E )</th>
<th>( F )</th>
<th>( G )</th>
<th>( H )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Line 1</td>
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<td>0</td>
<td>0</td>
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</tr>
<tr>
<td>Line 2</td>
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<tr>
<td>Line 3</td>
<td>0</td>
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<td>0</td>
</tr>
<tr>
<td>Line 4</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**NOTES**

- Field HAUNCH locations are at the same location as the encircled letters and numbers shown on Deck Elevations Sheet.
- Due to deck (IN.)
- Deflection
- Anticipated

Top of deck elevations are set based on theoretical camber and design. These HAUNCH locations are at the same location as the encircled letters and numbers shown on Deck Elevations Sheet. All bearings are shown in inches and decimals of feet in the miscellaneous data table. "CROSS SLOPE ADJUSTMENT" values will vary in inches and decimals of feet in the miscellaneous data table. Allowable maximum and minimum "field HAUNCH" values are given in inches and decimals of feet in the miscellaneous data table. Allowable maximum and minimum "field HAUNCH" values are given in inches and decimals of feet in the miscellaneous data table. All HAUNCH values exceed the maximums and minimums shown in the miscellaneous data table. Additional calculations are required if the field HAUNCH exceeds the maximums and minimums shown in the miscellaneous data table. Additional calculations are required if the field HAUNCH exceeds the maximums and minimums shown in the miscellaneous data table.
RAILROAD GENERAL NOTES:

1. **Centerline of bridge and/or centerline of project.**
2. **Alignments (left rail, right rail, stations, mileposts).**
3. **Future tracks, access roadways and existing tracks.**
4. **Horizontal clearance at right angle from centerline of nearest existing or future track to the face of obstruction such as substructure above grade.**
5. **Limits of shoring and minimum distance at right angle from centerline of track.**
6. **Horizontal spacing at right angle between centerlines of existing and/or future tracks.**
7. **Centerline of bridge and/or centerline of project.**
8. **Elevations of grading control points.**
9. **Existing ground shots and proposed grading.**
10. **Minimum permanent vertical clearance above the top of high rail to the skids of the heaviest load.**
11. **Limits of barrier rail and fence with respect to centerline of track.**
12. **Limits of shoring and minimum distance at right angle from centerline of track.**
13. **Frontage roads and minor streets such as local traffic control devices.**
14. **Total width of superstructure.**
15. **Width of shoulder and/or sidewalk.**
16. **Footprint of proposed superstructure and substructure including existing utilities.**
17. **Railroad right-of-way.**

GENERAL SHORING NOTES:

1. **All shoring is designed and constructed in accordance with the requirements of the American National Standards Institute (ANSI).**
2. **All shoring plans shall be reviewed and approved by the Bridge Bureau.**
3. **All shoring shall be designed and constructed in accordance with the requirements of the American National Standards Institute (ANSI).**
4. **All shoring is designed and constructed in accordance with the requirements of the American National Standards Institute (ANSI).**

MIN. CONSTRUCTION CLEARANCE ENVELOPE

- **Zone A:**
  - Shoring designed for 1.05xh standard loads.
  - No stripping.

- **Zone B:**
  - Shoring designed for 1.05xh standard loads.

- **Elevation View:**
  - Rail elevations for all tracks.
  - Controlling dimensions of drainage ditches and/or drainage structures.
  - Spur, etc.
  - Future tracks, access roadways and existing tracks as main line, siding, spur, etc.

- **Plan View:**
  - Stationing of proposed structures.
  - Limits of shoring and minimum distance at right angle from centerline of track.
  - Horizontal spacing at right angle between centerlines of existing and/or future tracks.
  - Grade elevations and minimum distance at right angle from centerline of track.

- **Profile View:**
  - Grade elevations.
  - Controlling dimensions of drainage ditches and/or drainage structures.
  - Spur, etc.
  - Future tracks, access roadways and existing tracks as main line, siding, spur, etc.

This Information shown below is what is to be included on the TS&L sheet (Situation Plan) when this Standard Sheet 1067 is used.

In discussions with the BNSF and UP railroads, the Bridge Bureau has agreed to provide the standard sheet 1067 and the information listed below. This information will be provided by the Final Bridge Design Units and the information will be reviewed by Preliminary Bridge Design Units on the Plan View and Elevation View on the TS&L sheet of all bridge projects that involve BNSF and UP railroad except the items noted with an asterisk (*). These items will be provided by the Final Bridge Design Units.

**Standard Sheet 1067 and Information Provided by the Final Bridge Design Units:**

- **Railroad General Notes:**
  - In discussions with the BNSF and UP railroads, the Bridge Bureau has agreed to provide the standard sheet 1067 and the information listed below.
  - **Railroad General Notes:**
    - Structure if applicable
    - All existing facilities and utilities.
    - Existing ground shots and grading.
    - Existing ground shots and proposed grading.
    - Controlling dimensions of drainage ditches and/or drainage structures.
    - Spur, etc.
    - Future tracks, access roadways and existing tracks as main line, siding, spur, etc.

- **General Shoring Notes:**
  - All shoring is designed and constructed in accordance with the requirements of the American National Standards Institute (ANSI).
  - All shoring plans shall be reviewed and approved by the Bridge Bureau.
  - All shoring shall be designed and constructed in accordance with the requirements of the American National Standards Institute (ANSI).
NOTE: ALL DIMENSIONS ARE OUT TO OUT. D = PIN DIAMETER.

NOTE: ALL REINFORCING IS TO BE EPOXY COATED.

PAVING NOTCH REPLACEMENT NOTES:

- The paving notch replacement is to be cast in two concrete casting units.
- Minimum clear distance from face of concrete to edge of pavement is 4".

The two paving notch replacement units per types include all costs of labor and materials associated with excavating, reinforcing, and constructing the new paving notch. The new paving notch must be constructed to the specified dimensions for the Drilled Keyway system. The new paving notch is to be constructed with the specified reinforcing steel as specified in the AASHTO Standard Specifications for Highway Bridges, Section 7.2.3.2. The new paving notch is to be placed on the concrete surface and the ends of the new paving notch are to be painted with two coats of zinc rich paint.

SPECIAL PROVISIONS SHALL APPLY TO CONSTRUCTION WORK ON THIS PROJECT.

CONSTRUCTION HISTORY:

- Design stresses for the following materials are in accordance with the AASHTO Standard Specifications for Highway Bridges, Section 7.2.3.2. Concrete in accordance with Section 7.2.3.2.

REFERENCES:

- The AASHTO Standard Specifications for Highway Bridges, Section 7.2.3.2.
- Design stresses for the following materials are in accordance with the AASHTO Standard Specifications for Highway Bridges, Section 7.2.3.2.

CONTRACT INFORMATION:

- The bid item "PAVING NOTCH REPLACEMENT" linear feet, shall include all costs of labor and materials associated with excavating, reinforcing, and constructing the new paving notch. The new paving notch must be constructed to the specified dimensions for the Drilled Keyway system. The new paving notch is to be constructed with the specified reinforcing steel as specified in the AASHTO Standard Specifications for Highway Bridges, Section 7.2.3.2. The new paving notch is to be placed on the concrete surface and the ends of the new paving notch are to be painted with two coats of zinc rich paint.
HYDRODEMOLITION NOTES:

- It is the intent to use the hydrodemolition process to remove all unsound concrete that is not contiguous to or on the edges of using a wash-down water pipe. The hydrodemolition equipment shall be set up with a water pressure at the nozzle of 3500 psi. The nozzle pressure shall be monitored and adjusted as necessary to ensure that all unsound concrete is removed. The nozzle pressure shall be kept within the range of 3000 to 4000 psi.
- The nozzle speed shall be set to ensure a smooth, even flow of water to the target area.
- The equipment operator shall be trained in the safe operation of the hydrodemolition equipment.
- The contractor shall provide a written report summarizing the work performed, including the duration of the operation, the equipment used, and the results obtained.

CONCRETE BRIDGE DECK REMOVAL BY HYDRODEMOLITION:

- The equipment shall be calibrated on site prior to the operation. The calibration shall be performed to ensure that the equipment is capable of removing unsound concrete.
- The operator shall be trained in the safe operation of the hydrodemolition equipment.
- The equipment shall be equipped with a vacuum system to remove debris and water from the work area.

HYDRODEMOLITION NOTES:

- The nozzle speed shall be set to ensure a smooth, even flow of water to the target area.
- The equipment operator shall be trained in the safe operation of the hydrodemolition equipment.
- The contractor shall provide a written report summarizing the work performed, including the duration of the operation, the equipment used, and the results obtained.
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- The operator shall be trained in the safe operation of the hydrodemolition equipment.
- The equipment shall be equipped with a vacuum system to remove debris and water from the work area.

HYDRODEMOLITION NOTES:

- The nozzle speed shall be set to ensure a smooth, even flow of water to the target area.
- The equipment operator shall be trained in the safe operation of the hydrodemolition equipment.
- The contractor shall provide a written report summarizing the work performed, including the duration of the operation, the equipment used, and the results obtained.
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CONCRETE BRIDGE DECK REMOVAL BY HYDRODEMOLITION:

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**FLOOR SUPPORT BEAM SYSTEM NOTES:**

The floor support beam system is the property of the DOT and is stored at the DOT maintenance yard in Ames at intersection of I-35/US30. The floor support beam sections and job box containing items listed in inventory on this sheet are located at facility in NE corner of yard. Floor support beam sections, 24'-0 and 45'-0 lengths, are not spliced together in storage. Job box, containing bolted spliced beam materials, threaded rods and bearing plates, is to be transported to any future job site by contractor.

The lump sum bid item "structural steel, hauling + storing" shall include all costs associated with the modeling and transport of the floor support beam system from the DOT maintenance yard in Ames to the job site, and returning these materials.

The floor support beam system shall be located at the DOT maintenance yard in Ames at the conclusion of any project employing these materials. These shall be no exceptions to this requirement.

**JOB BOX INVENTORY**

<table>
<thead>
<tr>
<th>NUMBER</th>
<th>ITEM</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>60</td>
<td>Nuts, etc.</td>
<td></td>
</tr>
<tr>
<td>44</td>
<td>Flg Splice, etc.</td>
<td></td>
</tr>
<tr>
<td>46</td>
<td>Flg Splice, etc.</td>
<td></td>
</tr>
<tr>
<td>116</td>
<td>Flg Splice, etc.</td>
<td></td>
</tr>
</tbody>
</table>

**HIGH STRENGTH BOLTS**

<table>
<thead>
<tr>
<th>NUMBER</th>
<th>ITEM</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>60</td>
<td>Nuts, etc.</td>
<td></td>
</tr>
<tr>
<td>44</td>
<td>Flg Splice, etc.</td>
<td></td>
</tr>
<tr>
<td>46</td>
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<td></td>
</tr>
<tr>
<td>116</td>
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<td></td>
</tr>
</tbody>
</table>

**ELEVATION JOB BOX DETAILS**

**PART SECTION A-A**

**ELEVATION VIEW OF FLOOR SUPPORT BEAM**

**FLOOR SUPPORT BEAM SPLICE DETAILS**

**FLANGE SPLICE DETAILS**

**LOCATION**

**THREADED ROD DETAILS**

**FLOOR SUPPORT BEAM DETAILS**

**JOB BOX INVENTORY**

**NOTES:**

The 1"½ threaded rods are to have a washer and two heavy hexagon nuts on the bottom and a washer and one heavy hexagon nut on the top.

**SECTION B-B**

**BEARING PL**

**W36 x 231**

**PART SECTION A-A**

**FLOOR SUPPORT BEAM SPLICE DETAILS**

**FLANGE SPLICE DETAILS**

(16 PIECES)

**LOCATION**

**THREADED ROD DETAILS**

(10 PIECES)

**FLOOR SUPPORT BEAM DETAILS**

(3 PIECES)

**BEARING PL**

**W36 x 231**

**PART SECTION A-A**

**FLOOR SUPPORT BEAM SPLICE DETAILS**

**FLANGE SPLICE DETAILS**

(16 PIECES)

**LOCATION**

**THREADED ROD DETAILS**

(10 PIECES)

**FLOOR SUPPORT BEAM DETAILS**

(3 PIECES)
SUPPORT BEAM NOTES:

- The support beams are the property of the DOT, and there are two identical beams stored at the DOT maintenance yard in Ames at the intersection of HW30/US30. These support beam sections are located at the facility in the NE corner of the yard. The support beams were originally fabricated in August 2004 for Buchanan County design 104. The support beams are A709 Grade 50 steel.

- The beam sun is the new structural steel, while the top portion shall include all costs associated with the handling and transport of the support beams from the DOT maintenance yard in Ames to the job site and returning these materials.

- The support beams shall be returned to the DOT maintenance yard in Ames at the conclusion of any project employing these materials. These shall be no exceptions to this requirement. Any missing or damaged components shall be replaced in kind at the contractor's expense, and the support beams are stored at the job site or once they are returned to the Ames maintenance yard. The support beams shall be placed on timber dunnage off the ground.

- These materials.

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**BENT BAR DETAILS**

**REINFORCING BARS**

- **5h1 (Horizontal Back Face)**
- **5h2 (Horizontal Traffic Face)**
- **5h3 (Vertical Both Faces)**

**ABUTMENT WING**

- **Note:** Plug 3" PVC pipe with expanding foam prior to backfilling behind abutments.

**Concrete Placement Details**

**Concrete**

- **USE:**
  - **5c5-10 Bars**
  - **6c4 Bars**

**Concrete Location**

- **PVC Pipe Location**

**Weight and Length**

<table>
<thead>
<tr>
<th>Bar</th>
<th>Weight (lbs)</th>
<th>Length (ft)</th>
<th>Shape</th>
</tr>
</thead>
<tbody>
<tr>
<td>5c5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6c4</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Cones, Joint (Typ.)**

- **Concrete Joint**
- **PVC Pipe Joint**

**Notes**

- **"Stainless Steel" Level or "Rebar Epoxy A" Level should be on or off depending on barrier rail steel embedded in the bridge deck.**

---

**IOWA DEPARTMENT OF TRANSPORTATION**

**DESIGN TEAM**

**PROJECT NUMBER**

**SHEET NUMBER**

**DESIGN SHEET NO.**

**COUNTY OF**

**FILE NO.**

**DESIGN NO.**

---

**Concrete and reinforcing steel quantities are included on the summary quantities sheet.**
ABUTMENTS. TO BACKFILLING BEHIND EXPANDING FOAM PRIOR TO BACKFILLING BEHIND ABUTMENTS.

NOTE:

1. PVC PIPE WITH EXPANDING FOAM PRIOR TO BACKFILLING BEHIND ABUTMENTS.

ABUTMENT WING - ELEVATION VIEW

REINFORCING BAR LIST - ONE ABUT. WING

<table>
<thead>
<tr>
<th>BAR</th>
<th>LOCATION</th>
<th>SHAFT NO.</th>
<th>SHAFT</th>
<th>DIAM.</th>
</tr>
</thead>
<tbody>
<tr>
<td>5h1</td>
<td>HORIZONTAL BACK FACE</td>
<td>7</td>
<td>0-6</td>
<td>48</td>
</tr>
<tr>
<td>5h3</td>
<td>HORIZONTAL TRAFFIC FACE</td>
<td>7</td>
<td>0-6</td>
<td>48</td>
</tr>
<tr>
<td>5h4</td>
<td>VERTICAL BOTH FACES</td>
<td>86</td>
<td>0-6</td>
<td>80</td>
</tr>
</tbody>
</table>

REINFORCING STEEL EPOXY COATED - TOTAL (LBS.)

800

CONCRETE PLACEMENT SUMMARY

<table>
<thead>
<tr>
<th>BAR</th>
<th>LOCATION</th>
<th>SHAFT NO.</th>
<th>SHAFT</th>
<th>DIAM.</th>
</tr>
</thead>
<tbody>
<tr>
<td>6c3</td>
<td>1'-6</td>
<td>5 - 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6c4</td>
<td>2'-0</td>
<td>5 - 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5c5</td>
<td>3'-0</td>
<td>5 - 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6d2</td>
<td>4'-0</td>
<td>5 - 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4t1</td>
<td>5'-0</td>
<td>5 - 10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTE:

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

ABUTMENT WING DETAILS

NOTE: "STAINLESS STEEL" LEVEL OR "REBAR EPOXY A" LEVEL SHOULD BE ON OR OFF DEPENDING ON BARRIER RAIL STEEL EMBEDDED IN THE BRIDGE DECK.
**ABUTMENT WING DETAILS**

**SECTION A-A**

**VIEW A-A**

**SECTION B-B**

**CONCRETE PLACEMENT SUMMARY**

**REINFORCING BAR LIST - ONE ABUT. WING**

**ABUTMENT WING**

**ELEVATION VIEW**

**NOTE:**
- All dimensions are out to out. 
- D = pin diameter.

---

**REINFORCING STEEL EPOXY COATED - TOTAL (LBS.):** 240

**NOTE:**
- All dimensions are out to out. 
- D = pin diameter.

---

**CONCRETE PLACEMENT SUMMARY**

**ONE ABUTMENT WING**

**TOTAL CONCRETE** 2.4

**TOTAL (CU. YDS.):** 2.4

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

---

**NOTE:**
- "Stainless Steel" level or "Rebar Epoxy A" level should be on or off depending on barrier rail steel embedded in the bridge deck.
BENT BAR DETAILS

<table>
<thead>
<tr>
<th>Bar Type</th>
<th>Location</th>
<th>Quantity</th>
<th>Size</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>5h1</td>
<td>Horizontal Back Face</td>
<td>9</td>
<td>6'8</td>
<td>Bar placed with joint constraint (TYP.)</td>
</tr>
<tr>
<td>5h3</td>
<td>Horizontal Traffic Face</td>
<td>9</td>
<td>6'9</td>
<td>Bar placed with joint constraint (TYP.)</td>
</tr>
<tr>
<td>5h2</td>
<td>Vertical Both Faces</td>
<td>16</td>
<td>7'-7</td>
<td>Bar placed with joint constraint (TYP.)</td>
</tr>
</tbody>
</table>

**Concrete Placement Summary**

<table>
<thead>
<tr>
<th>Component</th>
<th>Concrete</th>
<th>Steel</th>
</tr>
</thead>
<tbody>
<tr>
<td>ONE ABUTMENT WING</td>
<td>2.3</td>
<td>253</td>
</tr>
</tbody>
</table>

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

- See barrier rail end section sheet in these plans for details of reinforcing bars 6c4, 6c3, 5c5-10, 6d2 & 4t1.
- Concrete and reinforcing steel quantities are included on the summary quantities sheet.  

**Concrete Placement Summary**

<table>
<thead>
<tr>
<th>Concrete</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.6</td>
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</tr>
</tbody>
</table>

**NOTE:**
- "Stainless steel" level or "rebar epoxy A" level should be on or off depending on barrier rail steel embedded in the bridge deck.
BENT BAR DETAILS

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

CONCRETE PLACEMENT SUMMARY

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