STANDARD DRAWING GUIDANCE (SDG) (do not show on plans)

Select the appropriate 1st and 2nd sheet. Draw typical section as required and scale to fit within attached border, replacing the provided example. Modify other details and notes as required (match orientation of actual reinforcement).

Transverse repair zoning over intermediate bents is required for these structures. Longitudinal repair zoning in spans is required only when hydro demolition is required and is based on anticipated quantity of deck repair if not overlapped. Capacity of anticipated quantity of deck repair if overlapped, deck sealant is Q-9 or better may not need zoning. See EPG 732.40 (If only transverse zoning is required, zones shall be called "Special Repair Zones").

Wearing surface thickness can vary according to grade elevation requirements and minimum barrier curb height requirements. Maximum thickness should be limited to 3" (Ref. Organizational Results Research Report ORRE-004, May 2006). Minimum excludes reinforced concrete slab wearing surfaces.

Will need to adjust wearing surface thickness when detailing a thin wearing surface (1" or less), but it is a preferred detailing practice to show a discernable thickness on the plans. No thickness is shown for crack filler application.

Show difference as "Maximum 3+1/2", see Bridge Memo or SPM, e.g. Match existing grade plus 2+1/2.

Identify new wearing surface (See Bridge Memo or SPM). Specify minimum thickness in deck details. Typically 1/4" thicker outside special repair zones for Hydro Case 1 & 2.

Identify existing wearing surface and thickness, see Bridge Memo or existing plans.

Use Bridge Memo or SPM. Typically 3/4" inside special repair zones to avoid deeper penetration into newly repaired areas and 1/2" outside special repair zones.

Use existing plans.

Use appropriate reference (Structure, roadway, median, etc.)

Two types of overhang rehabilitation are shown. Cleaning and epoxy coating is preferred because of the relative short life of slab edge repair and unformed repair especially when over traffic. However in urban regions repairing the overhang may be preferred. Consult with SPM or SLE.

Scarification prior to adding first wearing surface or removing a portion of the deck when removing an existing wearing surface is not required for sealcoat asphalt. SBS-modified, epoxy polymer or UBAW polymeric slurry wearing surfaces.

Monolithic deck repair should only be allowed where longitudinal zoning is not required.

May be used for aesthetics when there will be an extensive patchwork of repairs visible to the public.

A deterioration is within 4 inches of edge then slab edge repair may be used instead of unformed superstructure repair.

Note is required only when shop drawings will vary required (for example, expansion device replacement, diaphragm replacement, etc.).

Two spans and three spans shown. These details can be used on Sheets RHB03j and RHB03L for conventional deck repair only projects.
Hydro Demolition Case 1A:
Zoned Conventional Deck Repair Before Hydro Demolition and Non-Zoned Monolithic Deck Repair After Hydro Demolition

(Adding First Wearing Surface)

STANDARD DRAWING GUIDANCE (do not show on plans):
- Use the following concrete wearing surfaces:
  - 3" to 4" Steel Fiber Reinforced
  - 1 3/4" to 3" CSA Cement Very Early Strength
  - 1 3/4" to 3" Latex Modified

Use for the following concrete wearing surfaces:

- STANDARD DRAWING GUIDANCE (do not show on plans):
  - 3" to 4" Steel Fiber Reinforced
  - 1 3/4" to 3" CSA Cement Very Early Strength
  - 1 3/4" to 3" Latex Modified

Repair

- MATCH EXISTING Slab Edge
- Repair

Inspection/Repair

- Limits of Slab Edge Repair
- Superstructure Repair (Unformed)

Repair

- MATCH EXISTING Slab Edge
- Repair

Superstructure Repair (Unformed)

Limit of Slab Edge Repair

- Superstructure Repair (Unformed)

Repair

- MATCH EXISTING Slab Edge
- Repair

Superstructure Repair (Unformed)

Limit of Slab Edge Repair

- Superstructure Repair (Unformed)

Repair

- MATCH EXISTING Slab Edge
- Repair

Superstructure Repair (Unformed)

Limit of Slab Edge Repair

- Superstructure Repair (Unformed)

Repair

- MATCH EXISTING Slab Edge
- Repair

Superstructure Repair (Unformed)

Limit of Slab Edge Repair

- Superstructure Repair (Unformed)

Repair

- MATCH EXISTING Slab Edge
- Repair

Superstructure Repair (Unformed)

Limit of Slab Edge Repair

- Superstructure Repair (Unformed)

Repair
Hydro Demolition Case 1B:

Zoned Conventional Deck Repair Before Hydro Demolition and Non-Zoned Monolithic Deck Repair After Hydro Demolition

(Replacing Existing Wearing Surface)

STANDARD DRAWING GUIDANCE (do not show on plans):
1. Use for the following concrete wearing surfaces:
   - 3/4" to 2" Steel Fiber Reinforced
   - 1 3/4" to 3" CSA Cement Very Early Strength
   - 1 3/4" to 3" Latex Modified Very Early Strength
   - 1 3/4" to 3" Latex Modified

2. Optional concrete wearing surfaces are specified and are not shown in the drawing, unless noted. Add the suffix specified to the existing code for the concrete wearing surface.

3. Add "(Low Slump Concrete)" to the RHB03h sheet title and revise the sheet number from two to three. Sheet RHB03g will not be used.

4. Add to this sheet the typical section from Sheet RHB03g with "(Low Slump Concrete)" added to the title.

5. Add the allowed options in parentheses to the typical section title below and also to the RHB03h sheet title.

- If optional concrete wearing surface is specified and low slump or polyester polymer is an option:
  - Use for the following concrete wearing surfaces:
    - Standard Drawing Guidance (do not show on plans):
      - 3/4" to 4" Steel Fiber Reinforced
      - 1 3/4" to 3" CSA Cement Very Early Strength
      - 1 3/4" to 3" Latex Modified Very Early Strength
      - 1 3/4" to 3" Latex Modified

- Repair
  - Match existing concrete color.

- Slab Edge
  - Match existing concrete color.

- Superstructure
  - Add and match existing concrete color.

- Hydro Demolition
  - Add and match existing concrete color.

- Cleaning and Epoxy Coating
  - Add and match existing concrete color.

- Roadway
  - Repair
  - Match existing concrete color.

- Traffic Control
  - Add and match existing concrete color.

- Subway
  - Repair
  - Match existing concrete color.

- Bridge Structure
  - Add and match existing concrete color.

- Roadway surfacing adjacent to bridge ends shall match new bridge wearing surface (roadway item).

- Class B-1 Concrete (Half-Sole and Full Depth Repair) f'c = 4,000 psi

- Design Unit Stresses:
  - 2002 AASHTO LFD (17th Ed.) Standard Specifications
  - Design Loading:
  - Bridge Deck Rating = 2002 AASHTO LFD (17th Ed.) Standard Specifications

- General Notes:
  - All concrete repairs shall be in accordance with Sec 704, unless otherwise noted.
  - Prior to starting work, contractor shall verify all dimensions in field before finalizing the shop drawings.
  - Contractor shall verify that all repairs are in accordance with the specifications and drawings.
  - Contractor shall verify that all repairs are in accordance with the specifications and drawings.
  - Repair TO BRIDGE: ROUTE * OVER * ROUTE * + TO * ABOUT * MILES * OR * BEGINNING STATION * (Match Existing)
DECK REPAIR DETAILS

Note: This drawing is not to scale. Follow dimensions.
Hydro Demolition Case 2A:
Zoned Conventional Deck Repair Before Hydro Demolition and Non-Zoned Conventional Deck Repair After Hydro Demolition
(Adding First Wearing Surface)

General Notes:
- All concrete repairs shall be in accordance with Sec 704, unless otherwise noted.
- Outline of existing work is indicated by light dashed lines. Heavy lines indicate new work.
- Contractor shall verify all dimensions in field before finalizing the shop drawings.
- In order to maintain grade and a minimum thickness of wearing surface as shown on plans it may be necessary to use additional quantities of wearing surface at various locations throughout the structure. The cost of furnishing and installing the wearing surface will be considered completely covered in the contract unit price, including all additional labor, materials or equipment for variations in thickness of wearing surface.
- Traffic handling:
- Structure to be closed during construction. Traffic is to be maintained on roadway items.

All concrete repairs shall be in accordance with Sec 704, unless otherwise noted.

U.I.P. AND REHABILITATE EXISTING (X'-X'-X') CONTINUOUS CONCRETE BOX GIRDER SPANS (SKEW: X)

REPAIRS TO BRIDGE: ROUTE * OVER *
ROUTE FROM TO *
ABOUT MILES OF *
BEGINNING STATION _____± (Match Existing)
**MONOLITHIC AND HALF-SOLE REPAIR**

**DECK REPAIR INSIDE SPECIAL REPAIR ZONES (BEFORE HYDRO DEMOLITION)**

1. **FULL DEPTH REPAIR**
   - **Detail A**: Wearing Surface
   - **Detail B**: Full Depth Repair
   - **Detail C**: Half-Sole Repair

2. **FULL DEPTH REPAIR WITH HALF-SOLE REPAIR**
   - **Detail A**: Wearing Surface
   - **Detail B**: Full Depth Repair
   - **Detail C**: Half-Sole Repair

**DECK REPAIR OUTSIDE SPECIAL REPAIR ZONES (AFTER HYDRO DEMOLITION)**

3. **FULL DEPTH REPAIR**
   - **Detail A**: Wearing Surface
   - **Detail B**: Full Depth Repair
   - **Detail C**: Half-Sole Repair

4. **FULL DEPTH REPAIR WITH HALF-SOLE REPAIR**
   - **Detail A**: Wearing Surface
   - **Detail B**: Full Depth Repair
   - **Detail C**: Half-Sole Repair

**Deck Repair Notes:**

1. **Outside Repair:**
   - Remove existing deck.

2. **Trench plow deck is to be used and sound and exposed existing deck is removed.**

3. **Inside special repair zones, complete the following repairs:**
   - **Half-sole repair**
   - **Full depth repair**

4. **Outside special repair zones, remove existing deck.**

5. **Complete total surface hydro demolition, removing minimum of sound concrete inside special repair zones and removing minimum of sound concrete and all deteriorated concrete outside special repair zones.**

6. **Sound deck and if needed complete incidental concrete removal.**

7. **Outside special repair zones, complete the following repairs:**
   - **Half-sole repair**
   - **Full depth repair**

8. **Place new wearing surface including additional material for areas of monolithic deck repair.**

**Special Repair Zones:**

1. Deck repair required in the areas designated as special repair areas. Deteriorated concrete shall be removed and replaced as full depth repair. Concrete in the special repair zone may be repaired at the same time. Hydro demolition shall not move forward until the repairs in all special repair zones are completed and properly cured.

2. Any deck repair not designated as a special repair zone shall be completed after hydro demolition.

3. Removal and deck repair shall be completed in one repair zone shall be completed in one repair zone. Removal work in a special repair zone shall be to a depth of the deck slab at the time the area of deck slab is 1/3 of the total repair area within a special repair zone. Removal work shall not exceed 18 inches in length along the web, the concrete removal and deck repair shall be completed after hydro demolition in alphabetical sequence beginning with Zone A. Zones with the same letter designation may be repaired at the same time. Hydro demolition shall not move forward until the repairs in all special repair zones are completed and properly cured.

4. For any area of deck repair that extends over a web and is more than 18 inches in length along the web, the concrete removal and deck repair shall be completed after hydro demolition shall be completed after hydro demolition in alphabetical sequence beginning with Zone A. Zones with the same letter designation may be repaired at the same time. Hydro demolition shall not move forward until the repairs in all special repair zones are completed and properly cured.

5. **DECK REPAIR DETAILS**

   - **Detail A**: Wearing Surface
   - **Detail B**: Half-Sole Repair
   - **Detail C**: Full Depth Repair

   - **Monolithic deck repair shall be used when half the diameter or less of the top bar is exposed.**
   - **Clearance around top bar and around bottom bar at the intersection of top bar shall be required when more than half the diameter of the top bar is exposed.**

   - **Note:** This drawing is not to scale. Follow dimensions.
Hydro Demolition Case 2B:

Zoned Conventional Deck Repair Before Hydro Demolition and Non-Zoned Conventional Deck Repair After Hydro Demolition

(Replacing Existing Wearing Surface)
Special Repair Zones:

- Steel
- Bent No. 4

**DESCRIPTION**

- Sheet No. of RHB03j
- Effective: Mar. 2021
- Supersedes: Aug. 2020

**PART PLAN OF SLAB SHOWING SPECIAL REPAIR ZONES**

- End of Slab at End Bent No. 1
- Roadway Face of Curb
- End of Slab at End Bent No. 5

**DECK REPAIR NOTES**

- **Order of Repair:**
  1. Sandblast existing deck
  2. Sound deck to identify areas in need of repair
  3. Outside special repair zones, complete the following repairs:
     a. Full depth repair
     b. Half sole repair
  4. Inside special repair zones, complete the following repairs:
     a. Half sole repair
     b. Full depth repair
  5. Place new wearing surface

**Special Repair Zones:**

- Any deck repair or areas not designated as special repair zones shall be completed prior to work in Zone A.
- Deck repairs required in the areas designated as special repair zones shall be completed in alphabetical sequence beginning with Zone A. Zones with the same letter designation may be repaired at the same time.

**Deck Repair Details**

- **Report:**
  1. Scarify existing deck ___".
  2. Sound deck to identify areas in need of repair.
  3. Outside special repair zone, complete the following repairs:
     a. Full depth repair
     b. Half sole repair
  4. Inside special repair zone, complete the following repairs:
     a. Full depth repair
  5. Place new wearing surface

**Deck Repair Notes:**

- Total width of full depth repair shall not exceed 1/3 of the deck width at all times. For any area of deck repair extending over a web or diaphragm, the concrete shall be removed and replaced as full depth repair. Concrete in webs shall not be removed deeper than the slab thickness. Full depth repair shall not exceed 27 square feet, and the total repair area within a single repair zone may exceed 27 square feet. For any area of deck repair extending over a web and is more than 18 inches in length along the web, the concrete removal shall stop at the centerline of the web and repair shall be completed in this area. Prior to continuing work in this area, the deck shall be placed on temporary supports to prevent collapse.

**Deck Repair Diagram:**

- End Bent No. 5
- End of Slab at End Bent No. 1
- Roadway Face of Curb

**DECK REPAIR DETAILS**

- Note: This drawing is not to scale. Follow dimensions.
Conventional Deck Repair Only (Case B)  
(Replacing Existing Wearing Surface)
Deck Repair Notes:

Order of Repair:
1. Remove existing wearing surface as required.
2. Sound deck to identify areas in need of repair.
3. Outside special repair zones, complete the following repairs:
   a. Half-sole repair
   b. Full depth repair
4. Inside special repair zones, complete the following repairs:
   a. Half-sole repair
   b. Full depth repair
5. Place new wearing surface.

Special Repair Zones:

13.1 Any deck repair in an area not designated as a special repair zone shall be completed prior to work in Zone A.
13.2 Deck repair required in the areas designated as special repair zones shall be completed in alphabetical sequence beginning with Zone A. Zones shall be lettered designation may be repaired at the discretion of the engineer.
13.3 Repair and deck repair shall be completed in one special repair zone and structures with single column bents shall contain a compressive strength of 3200 psi before work can be started in the next special repair zone.
13.4 Total width of full depth repair shall not exceed 5/6 of the width of all special repair zones. Special repair zone shall extend over a diaphragm or girder without prior review and approval from the engineer.
13.5 When the full depth repair extends over a diaphragm or girder the deteriorated concrete extends into the diaphragm or web, all deteriorated concrete shall be removed and replaced as full depth repair. Concrete in the web and the deteriorated concrete extends into the web and the deteriorated concrete extends into the web and the deteriorated concrete extends into the web and shall have attained a compressive strength of 3200 psi.
13.6 Repair and deck repair shall be completed in one special repair zone and all special repair zone shall have attained a compressive strength of 3200 psi before work can be started in the next special repair zone.
13.7 Any deck repair in areas designated as special repair zones shall be completed in alphabetical order of repair.

Deck Repair Details:

- **Remove existing wearing surface**
- **Sound deck to identify areas in need of repair**
- **Outside special repair zones, complete the following repairs**:
  - b. Full depth repair
  - a. Half-sole repair
- **Inside special repair zones, complete the following repairs**:
  - b. Full depth repair
  - a. Half-sole repair
- **Place new wearing surface**

**DECK REPAIR DETAILS**

*Note: This drawing is not to scale. Follow dimensions.*