**PLAN VIEW**

42° SBR-1 transition mounted on bridge with semi-integral abutment shown (integral abutment and capped pile abutment similar)

**SECTION A-A**

Glass fiber reinforced polymer (GFRP, see note 6 (TYP.)

**SECTION B-B**

- Reinforced concrete deck on steel or prestressed concrete T-beams
- Continuous or single span reinforced concrete slab bridge

**SECTION C-C** (GFRP not showing)

**SECTION D-D**

**SECTION E-E**

**SECTION F-F**

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**REINFORCING STEEL FOR 42° SBR-1 TRANSITION MOUNTED ON BRIDGE OR APPROACH SLAB**

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<th>MARK</th>
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<td>5'-4&quot;</td>
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**BENDING DIAGRAMS**

**LEGEND**

- E.S. = Each side
- F.S. = Far side
- N.S. = Near side
- S = Sill

**NOTES**

1. For all single slope concrete bridge railings including the 42°-48° transitions, project plans shall include Plan View, Elevation View, Sections, Reinforcing Marks, Reinforcing Bending Diagrams, and Reinforcing Weights.
2. See appropriate standard bridge drawings for adition details.
3. For bridge terminal assembly, see SSD. Constr. MOC-3.1 and MOC-3.7.
4. For setback perimeter length, see detail A on sheet 1600.
5. For deflection joint details and additional notes, see sheet 1600.
NOTES:
1. FOR THE ENTIRE LENGTH OF SINGLE SLOPE CONCRETE BRIDGE RAILINGS, PROJECT PLANS SHALL SHOW THE LOCATIONS OF DEFLECTION JOINTS.
2. DEFLECTION JOINT SPACING SHALL NOT EXCEED 10'-4" ON CENTERS. FOR CONTINUOUS STRUCTURES, THE DEFLECTION JOINTS WITHIN THE DEAD LOAD CONFINEMENT SHOULD BE SPACED NOT LESS THAN 5'-0" NOR MORE THAN 7'-4" ON CENTERS.
3. PAYMENT FOR ½" O.D. GLASS FIBER REINFORCED POLYMER (GFRP) STIFFENING REINFORCEMENT SHALL BE INCLUDED WITH CONTRACT PRICE FOR TYPE SSB-1 epoxy coated reinforcing steel.
4. LIMIT OF SAWCUT IS SHOWN IN DETAIL 3, SHEET 2. THE 4" SAWCUT DEPTH SHOWN IN DETAIL 3 IS THE MINIMUM REQUIRED. HOWEVER, THE CONTRACTOR HAS AN OPTION TO PERFORM FULL DEPTH SAWCUT.

DESIGN CRITERIA

DESIGN DATA
CONCRETE - COMpressive STRENGTH = 45 ksi
REINFORCING STEEL - MINIMUM YIELD STRENGTH = 60 ksi
AREA OF STANDARD 4½" SBR-1 CROSS SECTION = 8.805 sq. in.
VOLUME OF 4½" SBR-1 M+0" TRANSITION SECTION = 1.82 cu. ft.

DEFLECTION JOINTS FOR CONCRETE PARAPETS:
Sawcut 5½" in Che depth into the joint along the perimeter of the parapet. When the concrete is still green or as soon as the saw cut can be operated without damaging the concrete.

The roof is constructed to provide weather protection for the superstructure. Use an edge guide, fence, or Jig to ensure that the cut joint is straight, true, and aligned on all faces of the parapet. The joint width shall be the width of the saw blade, a nominal width of ½" inch.

Seal the perimeter of the deflection joints with a minimum depth of one inch with a polyurethane or polyester material conforming to ASTM C930, TYPE S. Leave the bottom ½" inch of both the inside and outside faces of the parapet unsealed to allow any water which may enter the joint to escape.

At each deflection joint location, use glass fiber reinforced polymer (GFRP) reinforcing steel to maintain the integrity of the deck. The reinforcing steel shall be placed at the longitudinal bars as shown in Sections A-A & B-B above. No other material may be used for reinforcing by the owner.

For transition sections, place a deflection joint at the beginning of the M+3" transition. Deflection joints are not required within the M-3" transition section.

MAXIMUM SPACING OF VERTICAL REINFORCING BARS FOR STANDARD 4½" SBR-1 CONCRETE PARAPETS
The maximum spacing of vertical reinforcing bars for the standard 4½" SBR-1 concrete parapet shall be 1'-6", unless noted otherwise.

MAXIMUM SPACING OF VERTICAL REINFORCING BARS FOR 4½" SBR-1 TRANSITIONS
The maximum spacing of vertical reinforcing bars for the 4½" SBR-1 transition section shall be as shown on sheets 35-1, 35-2, or 35-3.

MINIMUM EMBEDMENT OF VERTICAL REINFORCEMENT BARS
If the minimum embedment shown for the vertical reinforcing bars into the bridge deck, approach slab, or wingwall is not met, then the designer shall calculate the required reinforcement according to Section 15 of the "AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS," adopted by the American Association of State Highway and Transportation Officials.