**PLAN VIEW**

**DEFORMATION JOINT (TYP.) SEE NOTE 1 AND 4**

**EDGE OF BRIDGE DECK**

**SECTION A-A**

**DEFLECTION JOINT (TYP.) SEE NOTE 2**

**1/2" DIA. GLASS FIBER REINFORCED POLYMERIC**

**FIBER STIFFENING REINFORCEMENTS, 4'-0" LONG, CENTERED ON DEFLECTION JOINT (TYP.)**

**NOTE:**
1. FOR THE ENTIRE LENGTH OF NEW JERSEY SHAPE CONCRETE BRIDGE RAILINGS, PROJECT PLANS SHALL SHOW THE LOCATIONS OF DEFORMATION JOINTS.
2. DEFLECTION JOINT SPACING SHALL NOT EXCEED 15'-0" ON CENTERS. FOR CONTINUOUS STRUCTURES, THE DEFLECTION JOINTS WITHIN THE DEAD LOAD CONSIDERATION ARE PLAT FORMED IN THE LOCATION SHOWN ON THE PLANS.
3. PATTERN FOR 1/2" DIA. GLASS FIBER REINFORCED POLYMERIC FIBER STIFFENING REINFORCEMENTS SHALL BE INCORPORATED INTO THE CONTRACT PRICE FOR ITEM NO. 10 POLYMERIZED REINFORCING STEEL.
4. LIMITS OF SAWCUT IS SHOWN IN DETAIL A, SHEET 2 FOR 36" NEW JERSEY SHAPE CONCRETE BRIDGE RAILING AND DETAIL B, SHEET 2 FOR 42" NEW JERSEY SHAPE CONCRETE BRIDGE RAILING. THE 4'-0" SAWCUT DEPTH IS SHOWN IN DETAIL A AND DETAIL B ARE THE MINIMUM REQUIRED. HOWEVER, THE CONTRACTOR HAS AN OPTION TO PERFORM FULL DEPTH SAWCUT.

**DESIGN CRITERIA:**


42" NEW JERSEY SHAPE CONCRETE BRIDGE RAILINGS MEET THE REQUIREMENTS OF NONHP 325 TEST LEVEL 5 AND "AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS", 2012.

**DESIGN DATA:**

CONCRETE - COMPREHENSIVE STRENGTH = 4,000 PSI
REINFORCING STEEL - MINIMUM YIELD STRENGTH = 60 KSI

**AREA OF STANDARD 36" BR-1 CROSS SECTION:** 423.49 SQ. IN.
VOLUME OF 36" BR-1 TRANSITION SECTION: 1.614 CU. FT.

**AREA OF STANDARD 42" BR-1 CROSS SECTION:** 474.53 SQ. IN.
VOLUME OF 42" BR-1 TRANSITION SECTION: 2.071 CU. FT.

**DEFORMATION JOINTS FOR CONCRETE PARAPETS:**

Sawcut 5/8" (16MM) DEEP DEFORMATION JOINTS ALONG THE PERIMETER OF THE PARAPET WHEN THE CONCRETE IS STILL GREEN OR AS SOON AS THE SAW CAN BE OPERATED WITHOUT DAMAGING THE CONCRETE.

AFTER THE CONCRETE CURING PERIOD SPECIFIED IN THE BIBLICAL SOURCES HAS BEEN REACHED, PERFORM 4" SAWCUT THROUGH THE CFRP AS SHOWN IN DETAIL A, SHEET 2 FOR THE 36" NEW JERSEY SHAPE CONCRETE BRIDGE RAILING AND DETAIL B, SHEET 2 FOR THE 42" NEW JERSEY SHAPE CONCRETE BRIDGE RAILING.

THE CONTRACTOR HAS THE OPTION TO PERFORM FULL DEPTH SAWCUT. HOWEVER, THE SAWCUT SHALL NOT BE LESS THAN 1/2" FROM THE TOP OF THE CONCRETE DECK SLAB.

USE AN EDGE GUIDE, FENCE, OR JIG TO ENSURE THAT THE CUT JOINTS ARE STRAIGHT, TRUE, AND ALIGNED ON ALL FACES OF THE PARAPET. THE JOINT WIDTH SHALL BE THE WIDTH OF THE SAW BLADE, A MINIMUM WIDTH OF 5/8" INCH.

SEAL THE PERIMETER OF THE DEFORMATION JOINTS TO A MINIMUM DEPTH OF ONE INCH WITH A POLYURETHANE OR POLYMICRO REINFORCEMENT TO MAINTAIN THE ADHESION OF THE CONCRETE. THE joint shall be a minimum of 5/8" inch deep and 4'-0" long centered on the deformation joint.

AT EACH DEFORMATION JOINT LOCATION, USE GLASS FIBER REINFORCED POLYMERIC FIBER STIFFENING REINFORCEMENTS TO MAINTAIN THE PROTECTIVE COVER OF THE CONCRETE. THE joint shall be a minimum of 5/8" inch deep and 4'-0" long centered on the deformation joint. OTHER NON-FIBER REINFORCEMENTS MAY BE PROPOSED FOR USE, SUBJECT TO APPROVAL BY THE ENGINEER.

FOR TRANSITION SECTION, PLACE A DEFORMATION JOINT AT THE BEGINNING OF THE M-0" TRANSITION. DEFLECTION JOINTS ARE NOT REQUIRED WITHIN THE M-0" TRANSITION SECTION.

**MAXIMUM SPACING OF VERTICAL REINFORCING BARS FOR STANDARD 36" & 42" BR-1 PARAPETS:**

THE MAXIMUM SPACING OF VERTICAL REINFORCING BARS FOR THE STANDARD 36" & 42" BR-1 PARAPET SHALL BE 7'-0", UNLESS NOTED OTHERWISE.

**MAXIMUM SPACING OF VERTICAL REINFORCING BARS FOR 36" & 42" BR-1 TRANSITION:**


THE MAXIMUM SPACING OF VERTICAL REINFORCING BARS FOR THE 42" BR-1 TRANSITION SECTION SHALL BE AS SHOWN ON SHEETS 3B-3A, 3B-3B, AND 3B-3C.

**MINIMUM EMBEMENT OF VERTICAL REINFORCING BARS:**

IF THE MINIMUM EMBEMENT SHOWN FOR THE VERTICAL REINFORCING BARS INTO THE BRIDGE DECK APPROACH SLAB, (SHEET 2D) IS NOT MET, THEN THE DESIGNER SHALL CALCULATE THE REQUIRED REINFORCEMENT ACCORDING TO SECTION 13 OF THE "AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS" AS ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS.