WALL FACE SAFETY SHAPES

1. Class II concrete shall be used for all reinforced and plain (nonreinforced) concrete barrier walls except in moderately and extremely aggressive environments. Class IV concrete shall be used. Reinforcing steel with unprotected size shall be #4 bars. Exposed concrete surfaces shall have a Class 3 surface finish in accordance with Section 521 of the Standard Specifications. A Class 2 surface finish is called for in the plan. The surfaces shall have a Class 5 Applied Finished Coating in accordance with Section 400 only when called for in the plans.

2. Concrete barrier wall terminals for design speeds ≥ 50 mph.
   a. Terminated outside clear zone of the approach traffic with Decorative End Treatment.
   b. Terminal protection using a crash cushion system.
   c. Reinforcement may be required for handling stresses.

3. Expansion joints in wall required only at bridge ends and/or at locations where walls are integral part of existing or proposed concrete slab joints are to match existing or proposed expansion joint.

4. Where standard F-Shape walls abut existing NJ Shape walls, face transitions of not less than 5" in length shall be constructed at the adjoining end of the F-Shape wall.

GENERAL NOTES

5. For cast-in-place barrier wall segments constructed with the slip form method, score 3/8" deep crack control V-Grooves while the concrete is still wet and mold them when walls are constructed with the stationary form method. At 3/8" deep V-Grooves shall be spaced at 25' intervals, the end of the side face grooves shall lie in line with the ends of the top face grooves and the long dimension of all grooves shall lie at 90 degrees to the longitudinal axis of the wall. When wall segments are less than 40' in length, space the V-Grooves equally between 11' and 15' and the side face grooves shall align at 90 degrees to the longitudinal axis of the wall. When wall segments are less than 40' in length, space the V-Grooves equally between 11' and 15' and the side face grooves shall align at 90 degrees to the longitudinal axis of the wall.

6. Precast construction is allowed as an alternate to cast-in-place construction. a. Wall segments < 40' in length shall be joined by a transverse joint in accordance with Details C & D on Sheet 2. The minimum segment length is 20'. b. Bedding of the precast sections shall be facilitated by the use of sand-cement grout or equal method to assure uniform bearing. c. Reinforcement may be required for handling stresses.

7. On roadways designated for reverse laning, all downstream ends that are not shielded or outside the clear zone shall be marked by Type 3 Object Markers.

8. Cost of reinforcing steel and reflective barrier markers shall be included in the contract unit price for concrete barrier wall. See individual details for pay item information.

9. For barrier wall/retaining details see Indexes 217, 218, and 219.

10. Concrete barrier wall with New Jersey Safety Shape may not be substituted for the Standard F Shape Barrier.
**Design Criteria:**

- **"L" Wall**
  - Height Y
  - Width W
  - Min. Segment Wall Length

**F-SHAPE MEDIAN BARRIER**

When Y is less than or equal to 6 inches

**CANTILEVER WALL**

Superelevated Section

**NCHRP Report 350 TL-4 Criteria:**

- This barrier wall has been structurally evaluated to be equivalent or greater in strength to other safety shapes which have been crash tested to NCHRP Report 350 TL-4 criteria.

- Unless the plans stipulate a specific wall type, either the Cantilever wall or the "L" wall may be constructed at the Contractor's option.

- Cost of the footing to be included in the contract unit price for Median Concrete Barrier Wall, LF.

**REVISIONS**

- Changed: The Bottom widths of Bars 4A & 4D from 6" to 8".
- Changed the 3'-6" dimension to "Varies" in the 4C Bending Diagram.
- Deleted: The Min and Max. designations for X1, X, and Y.

**BENDING DIAGRAMS**

- **L-WALL BAR 4A**
- **L-WALL & CANTILEVER WALL BAR 4B**
- **L-WALL BAR 4C**
- **CANTILEVER WALL BAR 4D**
- **CANTILEVER WALL BAR 4E**

**MEDIAN BARRIER WALL FOR SUPERELEVATED SECTIONS OR FOR VARIABLE ROADWAY PROFILE GRADES**
For Use In Areas Where Obstructions Require Localized Omission Of Toe

BENDING DIAGRAMS

Note: All longitudinal reinforcement No. 4 bars.
Minimum segment length for this wall is 20 feet.
Wall to be paid for under the contract unit price for Shoulder Concrete Barrier Wall (Rigid-Retaining), LF.

QUANTITIES: Class II Concrete 0.29 CY/LF
Reinforcing Steel (Bar 4H) 28.6 LBS/LF
Reinforcing Steel (Bar 4J) 26.6 LBS/LF

REINFORCED CONCRETE BARRIER WALL (RETAINING)
1. The longitudinal dimensions and payment limits shown for median concrete barrier wall also apply to shoulder concrete barrier walls.

2. W-beam elements do not apply to these transition schemes. For barrier wall trailing and guardrail connections for one-way lanes, see Sheet 2.

3. Where reaming is necessary to fit nested beams, the reamed surfaces shall be metalized in accordance with Section 562 of the Standard Specifications.

4. Either steel or timber guardrail post may be used, timber posts shown.

5. The nested beams shall not be bolted to blocks and posts at post numbers (1), (3) and (5).

6. On the trailing side of MEDIAN BARRIER WALL, offset blocks may be omitted at post numbers (1), (2), (3), (3), (5), (6) and (8). (See Sheet 25)

7. For additional guardrail information refer to Index No. 400.

NOTE: See Sheet 25 For Locations Of Sections.