



R. Edwards Rom 408

TO: SUPERSEDED BY EI 73-028 EFFECTIVE 4/26/1973	 ENGINEERING INSTRUCTION NEW YORK STATE DEPARTMENT OF TRANSPORTATION
Distribution: <input type="checkbox"/> Main Office <input type="checkbox"/> Regions <input checked="" type="checkbox"/> Special	Code: <u>EI 73-14</u>
APPROVED:  <u>Deputy Chief Engineer, Facilities Design Subdivision</u>	Date: <u>2/14/73</u> Supersedes: EI 71-66

We are submitting, under separate cover, transparencies and prints of Standard Sheet 73-53.

Standard Sheet 73-53 supersedes Standard Sheet 71-53 issued by Instruction 71-66 dated December 3, 1971. The major changes included in this standard sheet are as follows:

1. We have removed the reflecting curbs "Type ABR and ACR" and the details for the reflecting fins.
2. We have reduced the depth of the channel to 2½ inches on "Type BB, BC and C" concrete gutter.
3. We have revised the driveway section to 1 inch for the full width of the driveway.
4. We have revised the Type "D" gutter so the ends are vertical.
5. We have removed the old asphalt concrete gutter and have replaced it with a new Type "E" gutter.

We are also transmitting revised Item 94S--Stone Curb. This item revises the amount of grout filling between the segments of the curb so as to fill only to a point 3 inches above the top of the pavement.

MDG:WH:JK
Attachments

ITEM 94S - STONE CURB
(Types A, B, C, D, E and/or as Indicated)

1. Description. Under this item the Contractor shall furnish and set stone curb of the type shown on the Standard Sheet where shown on the plans or ordered by the Engineer.

2. Materials. Stone curb shall be acceptable bluestone, sandstone or granite from approved quarries. The stone shall be sound and durable, free from seams which impair its structural integrity, and of a smooth splitting and/or machining character. Natural color variations that are characteristic of the deposit will be permitted.

Stone curb shall be of the material or materials indicated on the plans or in the itemized proposal or, if none is so indicated, it may be any one of the three materials named above, at the Contractor's option. Unless otherwise indicated, only one kind of material will be permitted under this item.

Where concrete backing is indicated within this specification for stone curb foundation, the concrete shall conform to the requirements of SECTION 7 in the GENERAL SPECIFICATIONS except natural cement, vibration, specific air content will not be required. The concrete mix shall be proportioned as follows:

Weight in Pounds of Aggregate per Bag of Cement

Spec. Gravity-Aggregate	2.60	2.65	2.70	2.75	2.80	2.85	2.90
Fine Aggregate*	326	332	338	345	351	357	363
Coarse Aggregate**	535	546	556	566	577	587	597

* Weights for Fine Aggregate include 3% allowance for moisture.

** Type, size and gradation same as for Class "B" concrete.

A. Dimensions: Curb shall be cut to conform to the shape and size shown on Standard Sheet. Minimum lengths for types A, B, C, D, E shall be 3 feet. Minimum lengths for types Economy and Slope shall be 2 feet. Minimum lengths do not apply to radial curb and closures. Types A, B, C, D, E curb to be set on a radius of 100 feet or less shall be cut to the curve required and ends shall be cut on radial lines. Curb to be set on a radius of from 101 feet to 200 feet shall be cut in 3'-0" to 4'-0" straight lengths if so directed by the Engineer.

Economy and Slope curb shall be furnished only in straight pieces.

Economy and Slope curb, when used on a radius of 10 feet or less shall be cut with radial joints.

Where 8 inch exposed face is desired, use sections shown on Standard Sheet and increase depth 2 inches.

The width of bottom of all types except Slope Curb shall be not less than 4 inches for 2/3 of the length of curb.

B. Finish: Types A, B, C, D and E (a) Top surfaces shall be sawn or hammered to approximately true planes with no projection or depression greater than 1/8 inch. Saw marks normal to the sawing process will be permitted if within the above prescribed tolerance.

(b) Front arris lines shall be straight and true with no variations from a straight line greater than 1/8 inch when measured from a 2 foot straightedge placed along the arris line. Back arris lines and lower front arris line on type E curb shall be straight and true with no variations from a straight line greater than 1/4 inch measured in the same manner.

(c) Back surfaces shall have no projection or depression for a distance of 3 inches down from the top which would exceed a batter of 1 inch in 3 inches.

(d) Front exposed faces, when split, shall have no projection greater than 3/4 inch or depression greater than 1/2 inch measured from the plane of the face through the top arris line.

Front faces below grade shall have no projections or depressions greater than 1 inch measured in the same manner.

No projection on the exposed face of Type C curb will be permitted that would extend over 1/4 inch beyond a vertical plane extending from the intersection of the pavement grade line and the curb face.

(e) Ends of curb shall be approximately square with the planes of the top and face and so finished that when the stones are set no space more than 3/4 inch shall show in the joint for the full width of the top or down the exposed portion of the face. Remainder of the end may break back not over 8 inches from the plane of the joint. Arris lines at the joints shall not project beyond the plane of the face and shall not fall under the plane of the face more than 1/4 inch.

(f) No drill holes shall be permitted in planes of top or exposed face.

Economy Type Curb: The above specifications on finish apply to Economy Type Curb with the following exceptions:

(a) Top surfaces shall be split with no projections or depressions greater than 1/2 inch.

(b) Front arris line shall not vary from a straight line more than 1/2 inch.

(c) Exposed joint openings shall not exceed 1-1/2 inches.

(d) Drill holes will be permitted in top and face.

Slope Type Curb: (a) Exposed face shall be smooth quarry split to an approximately true plane having no projections or depressions which will cause over 1 inch to show between a 2 foot straightedge and the face when the straightedge is placed as closely as possible to the plane of the face. Drill holes not more than 3 inches long and 1/2 inch deep will be permitted in the face.

Slope Type Curb (Cont'd)

(b) Arris lines at the top and bottom shall be straight and true and shall not show over 1/2 inch between the stone and a 2 foot straightedge applied along the arris line, except at drill holes.

(c) Arris line at ends shall not be above or more than 1/2 inch below the plane of the face.

(d) Ends shall be square to the plane of the face and shall be so finished that when the stones are set no space more than 1-1/2 inch shall show in the joint for the full width of the face.

MORTAR. Mortar for filling joints shall consist of one part of Portland Cement with one part of Mortar Sand mixed as stiff as practicable and of such consistency that it will require rodding when placed in joints.

3. CONSTRUCTION DETAILS. The curb shall be set true to line and grade on an approved foundation providing a firm and uniform bearing. Except as noted below the foundation shall consist of granular material meeting the Materials specifications of ITEM 4 SUBBASE COURSE SELECT GRANULAR MATERIAL. When stone curb is used adjacent to flexible type pavement, concrete backing shall be used as indicated on the standard structure sheet unless other special construction details are called for on the plans or in the proposal. All spaces under the curb shall be carefully and thoroughly rammed so that it shall be completely supported throughout its entire length.

After the curb has been set, it shall be backfilled and thoroughly tamped with approved material before proceeding with any further work in the area adjacent to the curb.

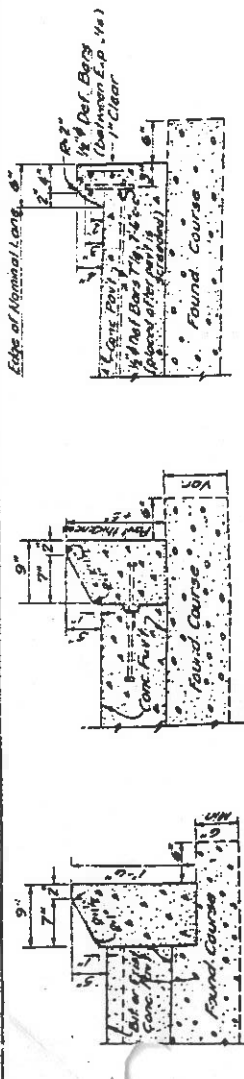
Curb sections shall not be fitted together closer than 1/4 of an inch at arris line.

The joints in the curb shall be carefully filled with cement mortar to a point three (3) inches above the top of the pavement. The mortar shall be mixed as indicated under "Mortar" in 2. Materials, of this specification. The mortar shall be rodded in place, the exposed front of the joint shall be neatly pointed flush with the curb surface and be cleaned of all excess mortar.

The Contractor shall protect the curb and keep it in alignment and first class condition until the completion of the contract. Any curb which is damaged at any time previous to the final acceptance of the work shall be removed and satisfactorily replaced at the Contractor's expense.

4. METHOD OF MEASUREMENT. The quantity to be paid for shall be the number of linear feet of curb placed in accordance with the plans, specifications and as ordered by the Engineer.

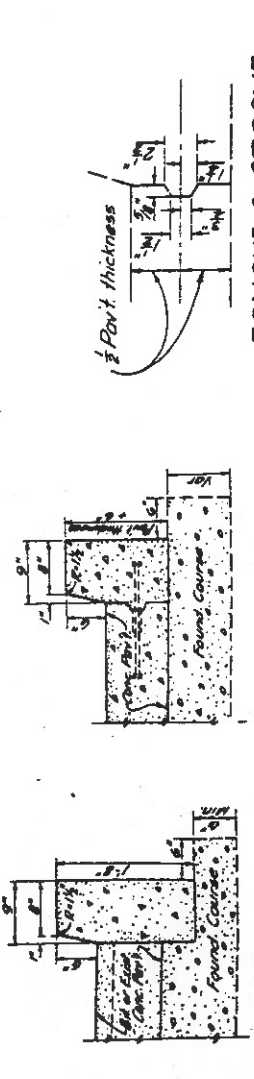
5. BASIS OF PAYMENT. Stone curb shall be paid for at the contract unit price per linear foot under the item for the particular type of curb required, furnished and installed, complete in place, which price shall include full compensation for all labor, equipment and materials used including Portland cement, concrete backing and granular foundation material.



TYPE "AB"

TYPE "AC"

TYPE "AD"



TYPE "BB"

TYPE "BC"

TONGUE & GROOVE DETAIL

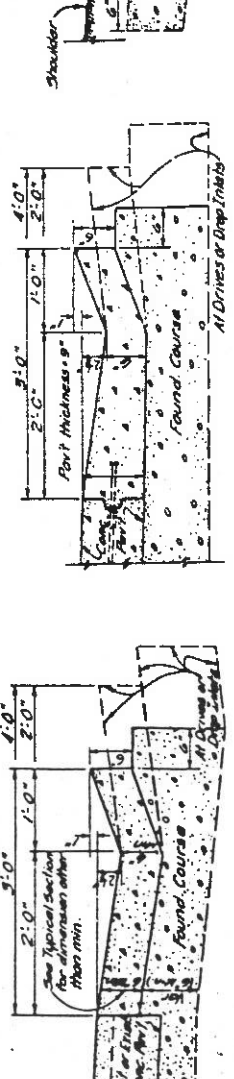
CONCRETE CURB



TYPE "BB"

TYPE "BC"

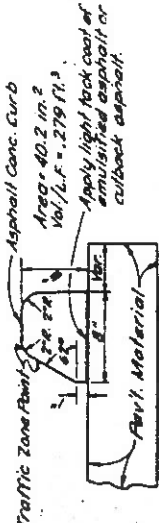
CONCRETE CURB AND GUTTER



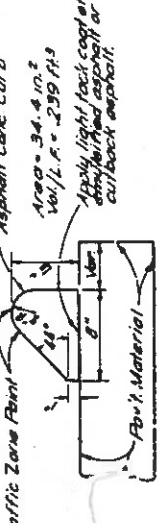
TYPE "BB"

TYPE "BC"

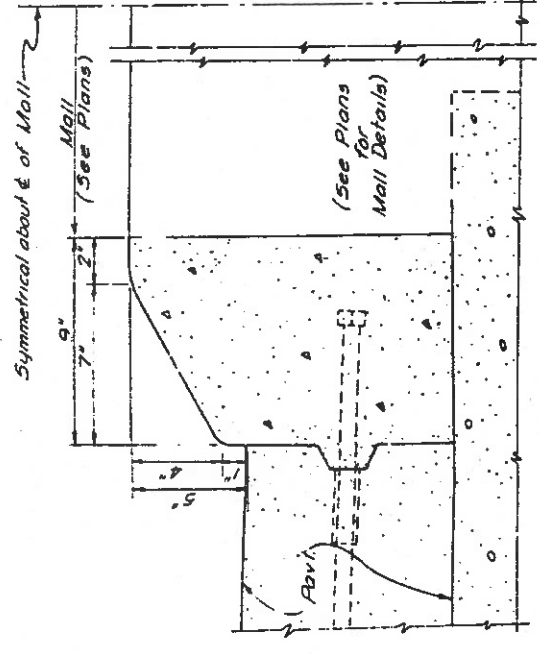
CONCRETE GUTTER



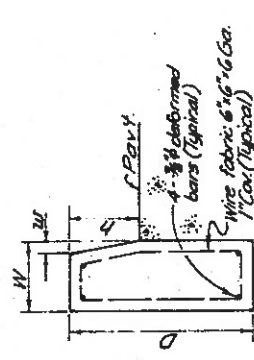
NON-MOUNTABLE TYPE



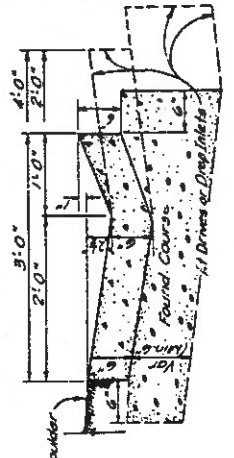
ASPHALT CONCRETE CURB



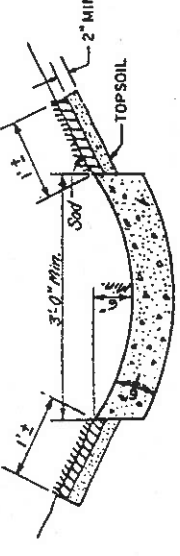
TYPICAL SECTION CURB AND MALL



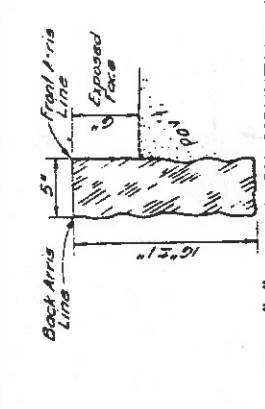
PRECAST CONCRETE CURB



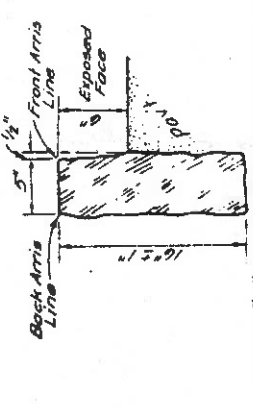
TYPE "C"



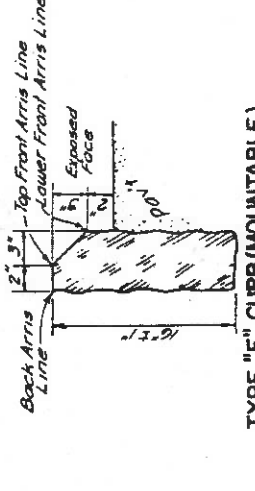
TYPE "D" CONC. GUTTER WITH SOD STRIPS (SHOWN)
TYPE "E" ASPH. CONC. GUTTER ("T" = 4")



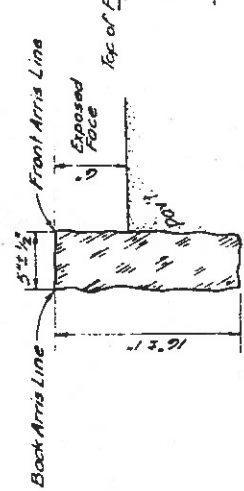
TYPE "A" CURB (NON-MOUNTABLE)
Sawed or Hammered Top, Quarry Split Face



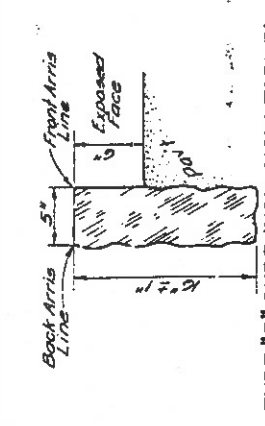
TYPE "C" CURB (NON-MOUNTABLE)
Sawed or Hammered Top, Quarry Split Face



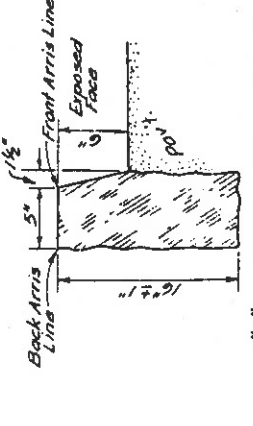
TYPE "E" CURB (MOUNTABLE)
Sawed or Hammered Top and Face



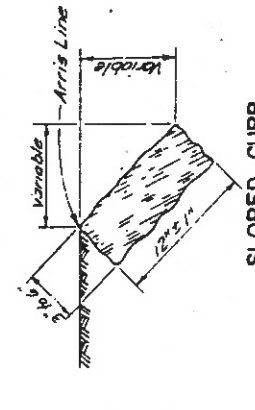
ECONOMY CURB (NON-MOUNTABLE)
Quarry Split Top and Face



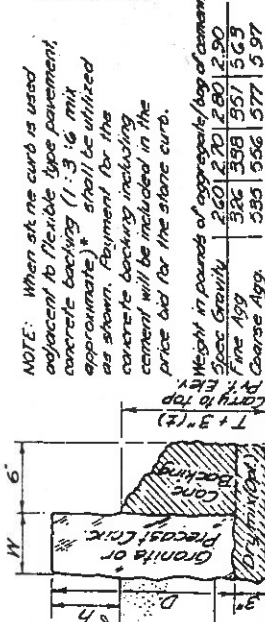
TYPE "B" CURB (NON-MOUNTABLE)
Sawed or Hammered Top and Face



TYPE "D" CURB (NON-MOUNTABLE)
Sawed or Hammered Top and Face



SLOPED CURB
Quarry Split Top and Face



CURB WITH FLEXIBLE PAVEMENT

NOTES:

1. Portland Cement Grout Filler shall be of 1:2 proportion.
2. Caulking material shall conform to the requirements of M-38-Joint Sealer.
3. Payment for the conc. backing including cement, cement grout filler and joint sealer is to be included in the price bid for the curb.
4. Dimensions D, H, W, refer to those shown above.
5. Use sod strips adjacent to paved gutters on steep slopes, on the outside of curves and at other locations as directed by the Engineer.

CURB WITH RIGID PAVEMENT

6. Concrete curb driveway transition sections to be similar to stone curb transition indicated on this sheet.
7. Contractor may submit for approval work drawings for a suitable prestressed reinforcing system as an alternate to the reinforcing shown.

STONE & PRECAST CONC. CURB

CURB AND GUTTER

Traced By A. Quagliari 10/12/63 Approved Feb. 5 1973
 Checked By P. Szymanski Approved Feb. 5 1973
 Revised By M. GRYP Approved Feb. 5 1973

STATE OF NEW YORK
 DEPARTMENT OF TRANSPORTATION
 DIVISION OF CONSTRUCTION

MALCOLM E. GRAHAM
 Deputy Chief Engineer (Facilities Design)

Scale