

PART 18: SPECIFICATION FOR ROADWAY IMPROVEMENTS MATERIALS AND
CONSTRUCTION
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CITY OF COLUMBIA REGULATIONS
PART 18
SPECIFICATIONS FOR ROADWAY IMPROVEMENTS MATERIALS AND
CONSTRUCTION

18.1 GENERAL

- 18.1.1 These specifications contemplate the installation of new roadways, the resurfacing/widening of existing roadways, and appurtenant roadway work within the road right-of-way, all in the corporate limits of the City of Columbia.
- 18.1.2 Roadway improvements will be installed at the locations shown on the plans and to the position, alignment and grade shown thereon. In the event of conflict in the vertical grading established, resolution of the conflict shall be as directed by the City Engineer.
- 18.1.3 Water used for construction will be furnished by the City through approved connections to the city water system. Check valves to reduce the possibility of contamination will be furnished by the contractor when directed by the City Engineer.
- 18.1.4 In distributing material and equipment at the site of the work, the Contractor shall locate them so that interference with traffic and ingress/egress shall be at a minimum.
- 18.1.5 All materials furnished by the contractor shall be delivered and distributed at the site by the Contractor. Materials furnished by the City shall be picked up by the Contractor at points designated by the City and hauled to the work site.
- 18.1.6 The Contractor shall proceed with caution in excavating so that the exact location of underground structures, both known and unknown, may be determined. He shall be held responsible for the repair of such structures when broken or otherwise damaged.
- 18.1.7 Where there is a conflict between the General Specifications and Special Provisions, the Special Provisions shall govern.
- 18.1.8 Roadways identified to be resurfaced resulting from and following utility installation shall be milled prior to resurfacing unless otherwise and specifically approved by the City Engineer. This is necessary to avoid drainage problems that occur when elevations are modified due to overlays.

18.2 CONSTRUCTION MATERIALS

- 18.2.1 Materials used in the building of new roadways, the resurfacing and widening of existing roadways, and appurtenant roadway work will be in accordance with the South Carolina Department of Highways and Public Transportation Standard Specifications, latest edition.
- 18.2.2 Standard Drawings. The attached drawings #RD-1, RI-1 through RI-10, represent typical details of construction and materials to be used in the course of roadway

construction. They are meant to illustrate acceptable standards; approved equals must be submitted to the City Engineer for his approval prior to their use in the City's system.

18.2.3 Where there is a conflict between the South Carolina Department of Highways and Public Transportation Department's Standard Specifications, and the Special Provisions, the Special Provisions will govern.

18.3 CONSTRUCTION METHODS

18.3.1 Construction methods used in the building of new roadways, the resurfacing and widening of existing roadways, and appurtenant roadway work will be in accordance with the South Carolina Department of Highways and Public Transportation's Standard Specifications, latest edition.

18.3.2 Where there is a conflict between the South Carolina Department of Highways and Public Transportation's Standard Specifications and the Special Provisions, the Special Provisions shall govern.

18.4 TESTING METHODS

18.4.1 Frequency (minimum) of testing the new roadway, the resurfacing and widening of existing roadways, and appurtenant road work shall be as described in the South Carolina Department of Highways and Public Transportation's Standard Specifications, latest edition. Special Provisions may delineate additional testing.

18.4.2 The materials to be tested will be supplied by the Contractor. Personnel, tools, and equipment necessary for the Engineer or his representative to take samples will also be supplied by the Contractor.

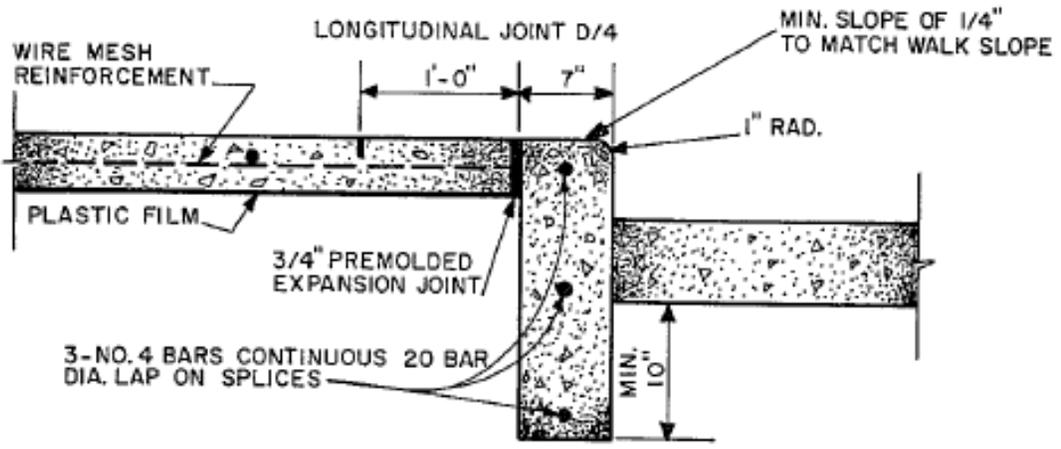
18.4.2.1 The cost of minimum testing required by the standard specifications for highway construction will be borne by the Contractor except as specified in the Special Provisions.

18.4.3 Test locations selected will be solely at the discretion of the City Engineer, or his representative.

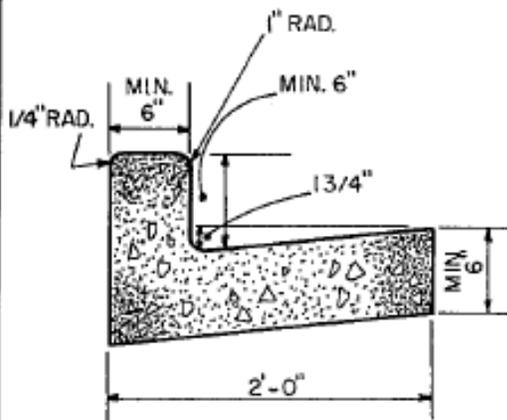
18.5 MEASUREMENT AND PAYMENT

18.5.1 Measurement of in place completed work shall be in accordance with the South Carolina Department of Highways and Public Transportation's Standard Specifications, latest edition.

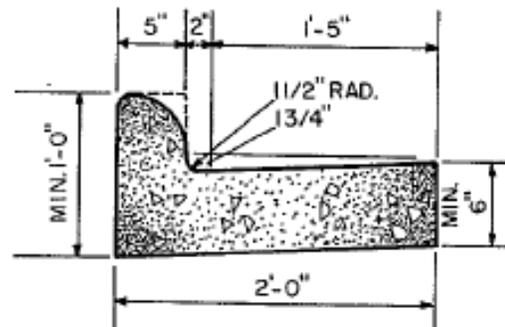
CURB AND GUTTER DETAILS



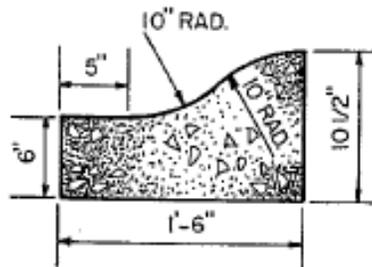
TYPE "A"



TYPE "B"



TYPE "C"



TYPE "D"

STATE OF SOUTH CAROLINA

JAN 12 1979

1-16-79

A. HICKETS

CITY ENGINEER

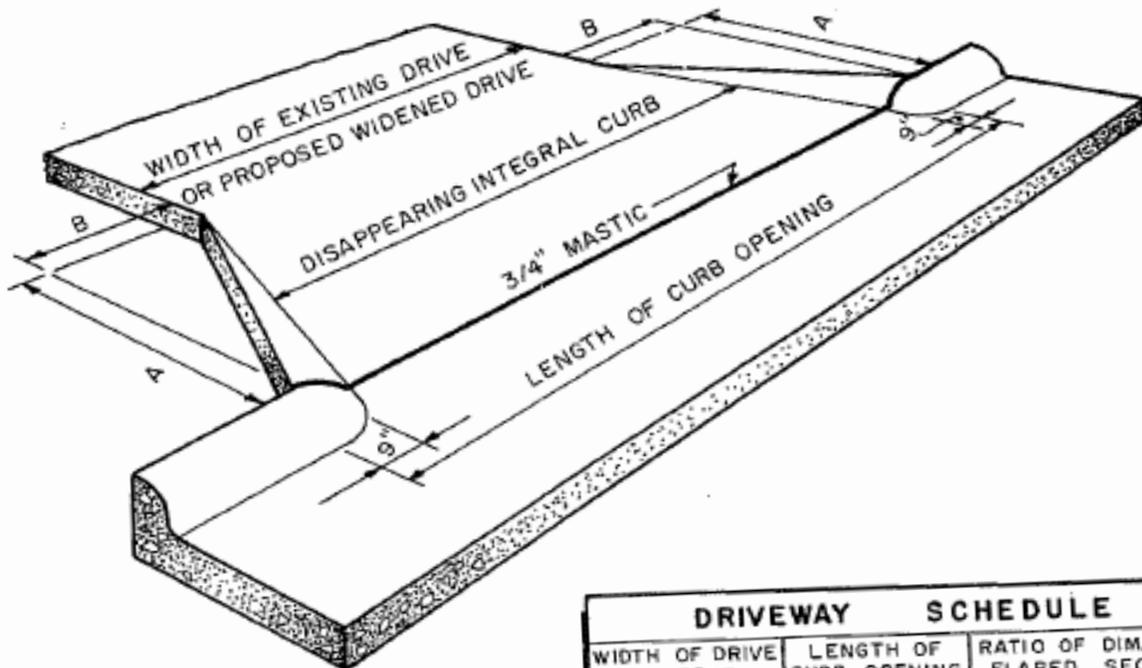
DATE: 1-16-79

COLUMBIA ENGINEERING DEPARTMENT.

STANDARD DETAIL RT-1

DRIVEWAY DETAILS

(FOR EXISTING CURB OPENINGS)

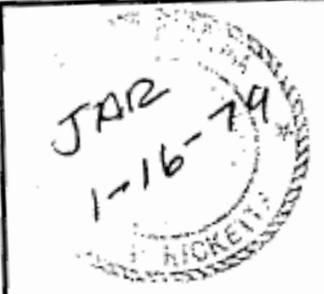


DRIVEWAY SCHEDULE				
WIDTH OF DRIVE IN FEET (SEE NOTE 1)	LENGTH OF CURB OPENING IN FEET	RATIO OF DIM. FOR FLARED SECTION		
		A	B	
8 THRU 10	16	MIN.	1	1
		MAX.	2	1
11 THRU 15	20	MIN.	1	1
		MAX.	2	1
16 THRU 20	24	MIN.	1	1
		MAX.	2	1
OVER 20	SEE CITY ENGINEER	SEE CITY ENGINEER		

COLUMBIA ENGINEERING DEPARTMENT

NOTES

1. IF PROPERTY OWNER PROPOSES TO WIDEN EXISTING DRIVE, USE EXISTING WIDTH PLUS WIDTH OF PROPOSED WIDENING TO ENTER SCHEDULE AND DETERMINE LENGTH OF CURB OPENING.
2. IN NO CASE SHALL CURB OPENING BE CONSTRUCTED BEYOND EXTENDED PROPERTY LINE OF ADJOINING PROPERTY.
3. CONSTRUCT DISAPPEARING CURB ONLY WHEN NEW DRIVE SECTION FILLS ENTIRE CURB OPENING, OTHERWISE USE A FLAT SECTION.
4. WHEN POSSIBLE, SLOPE OF NEW DRIVE SHALL NOT EXCEED 1" VERTICAL TO 7" HORIZONTAL.


 CITY ENGINEER
 DATE: 1-16-79

STANDARD DETAIL RI-2

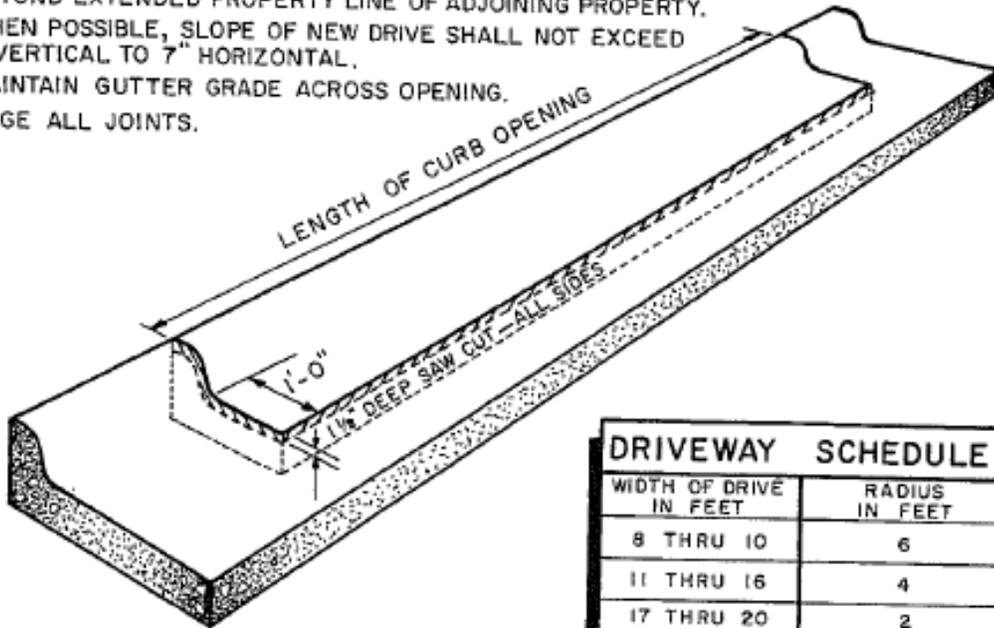
DRIVEWAY DETAILS

(WHERE CURB CUT IS REQUIRED)

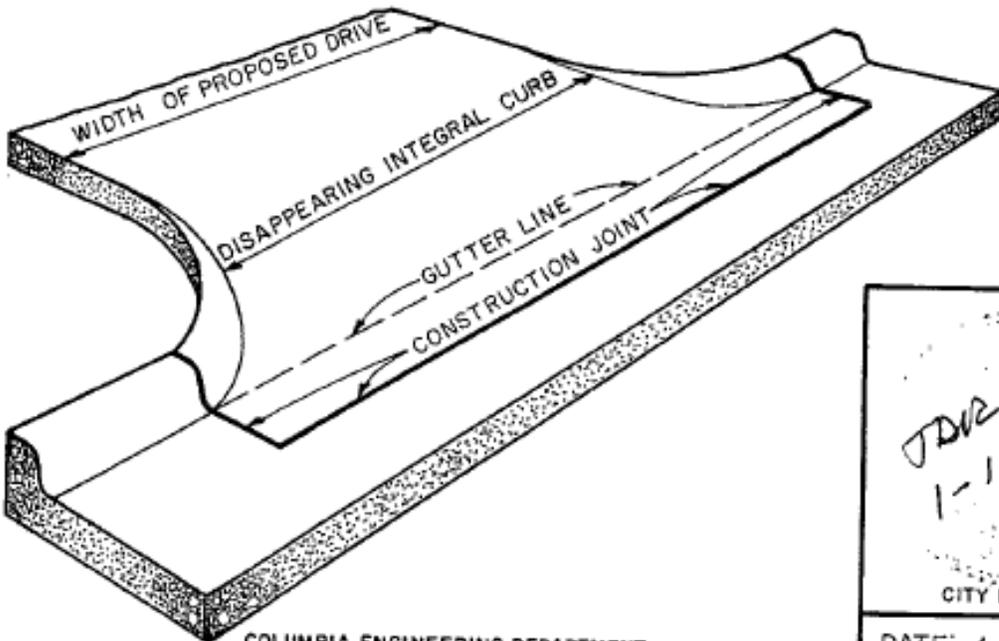
RADIUS SECTION

NOTES:

1. IN NO CASE SHALL CURB OPENING BE CONSTRUCTED BEYOND EXTENDED PROPERTY LINE OF ADJOINING PROPERTY.
2. WHEN POSSIBLE, SLOPE OF NEW DRIVE SHALL NOT EXCEED 1" VERTICAL TO 7" HORIZONTAL.
3. MAINTAIN GUTTER GRADE ACROSS OPENING.
4. EDGE ALL JOINTS.



DRIVEWAY SCHEDULE	
WIDTH OF DRIVE IN FEET	RADIUS IN FEET
8 THRU 10	6
11 THRU 16	4
17 THRU 20	2
OVER 20	SEE CITY ENGINEER

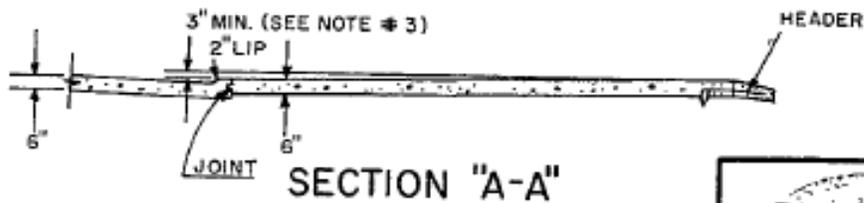
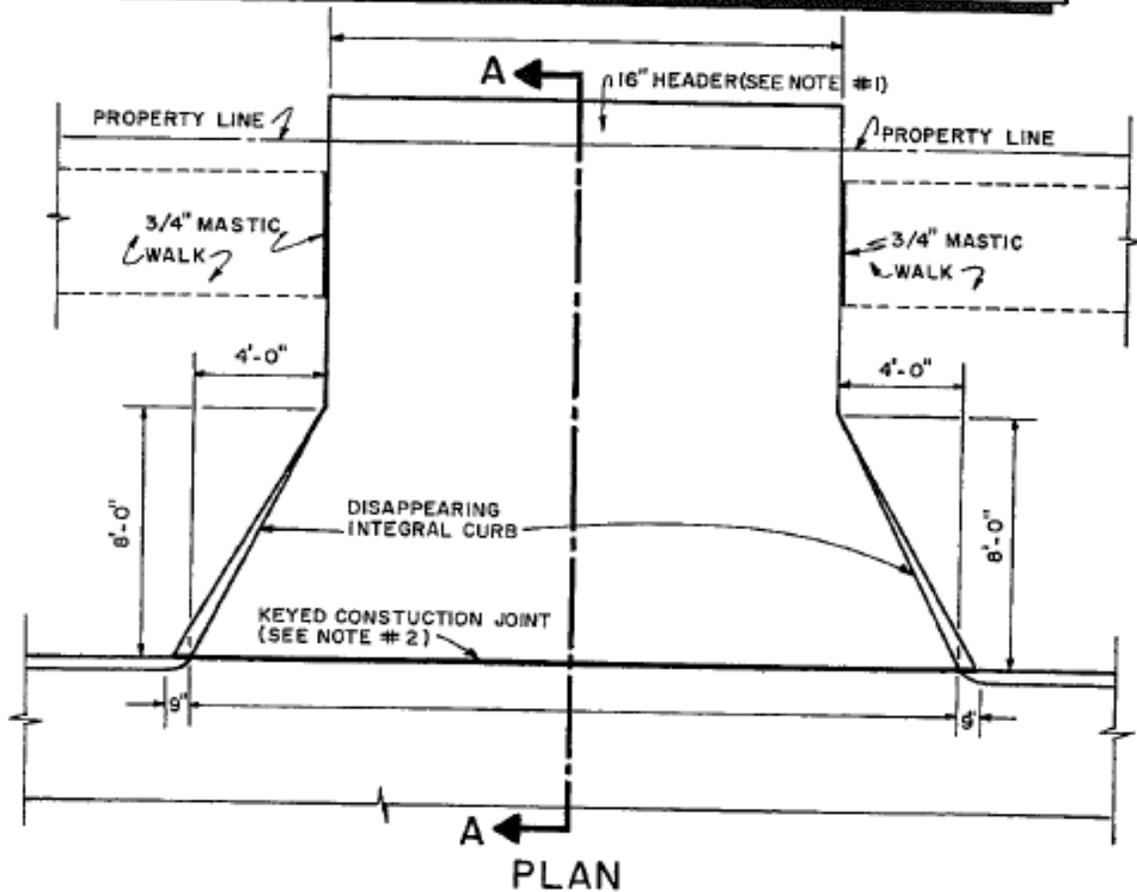


JDR
 1-16-79
 RICKETTS
 CITY ENGINEER
 DATE: 1-16-79

COLUMBIA ENGINEERING DEPARTMENT

STANDARD DETAIL, RI-3

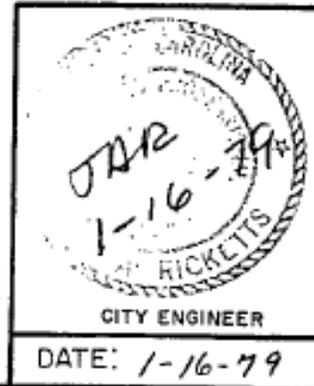
ALLEY RETURN DETAILS



NOTES:

- ① IF ALLEY IS NOT PAVED USE HEADER AS SHOWN ON PLAN. IF ALLEY IS PAVED AT A LATER DATE, REMOVE HEADER AND INSERT 3/4" MASTIC BETWEEN RETURN AND NEW PAVING. IF ALLEY IS ALREADY PAVED INSERT 3/4" MASTIC BETWEEN RETURN AND OLD PAVING.
- ② IF ALLEY RETURN IS NOT POURED, DROP CURB AND USE KEYED CONSTRUCTION JOINT, UNLESS OTHERWISE NOTED ON PLANS.
- ③ A MIN. SLOPE OF 3" TO BE MAINTAINED FROM PROPERTY LINE TO LIP OF DROPPED CURB.

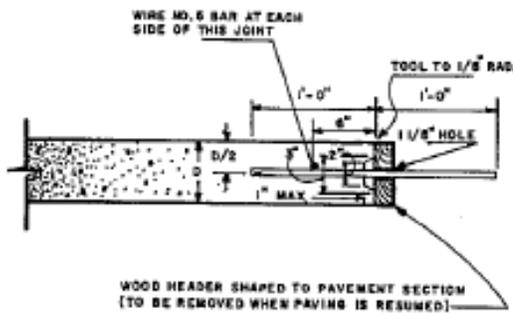
COLUMBIA ENGINEERING DEPARTMENT



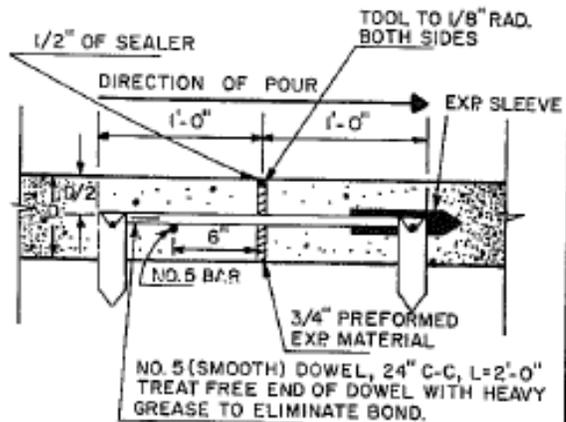
DATE: 1-16-79

STANDARD DETAIL RI-4

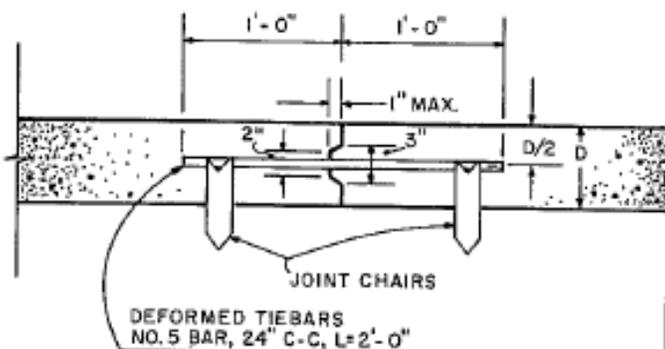
PAVEMENT JOINT DETAILS



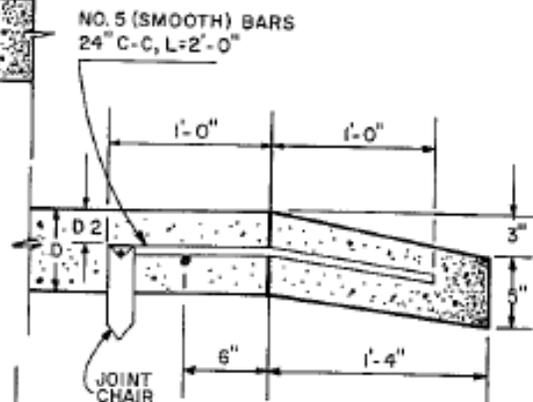
DAYS WORK OR EMERGENCY JOINT



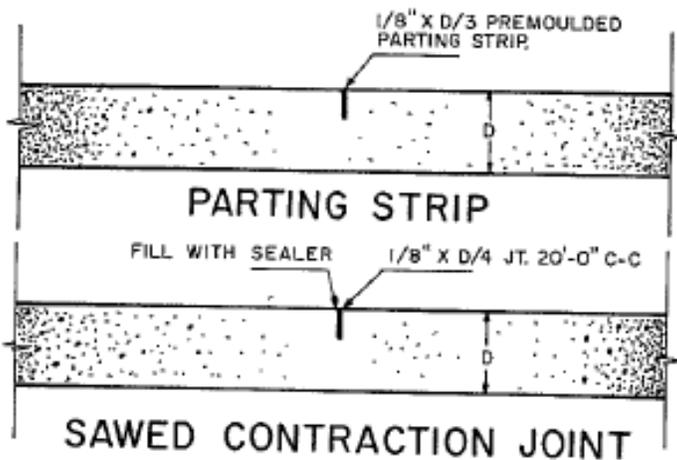
EXPANSION JOINT



KEY AND DOWELLED JOINT



HEADER DETAIL



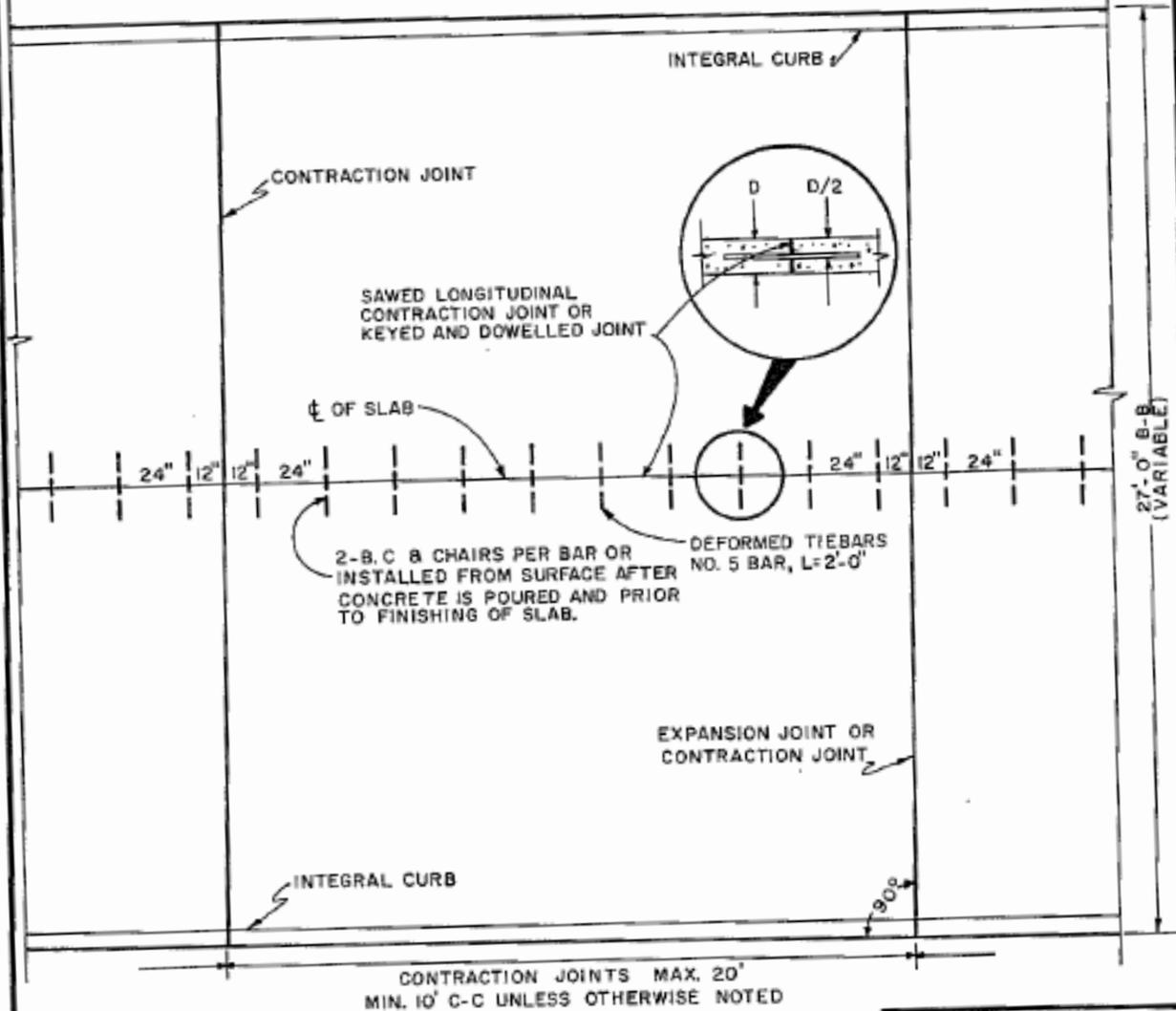
COLUMBIA ENGINEERING DEPARTMENT

JARZ
1-16-79
CITY ENGINEER
DATE: 1-16-79

STANDARD DETAIL RI-5

☐ JOINT FOR FULL WIDTH POUR

(USE K. & D. JOINT FOR 1/2 WIDTH POUR)



NOTE
 FOR PAVING WIDTH IN EXCESS OF 27'-0"
 SEE PLANS FOR SPACING AND TYPES OF
 LONGITUDINAL.

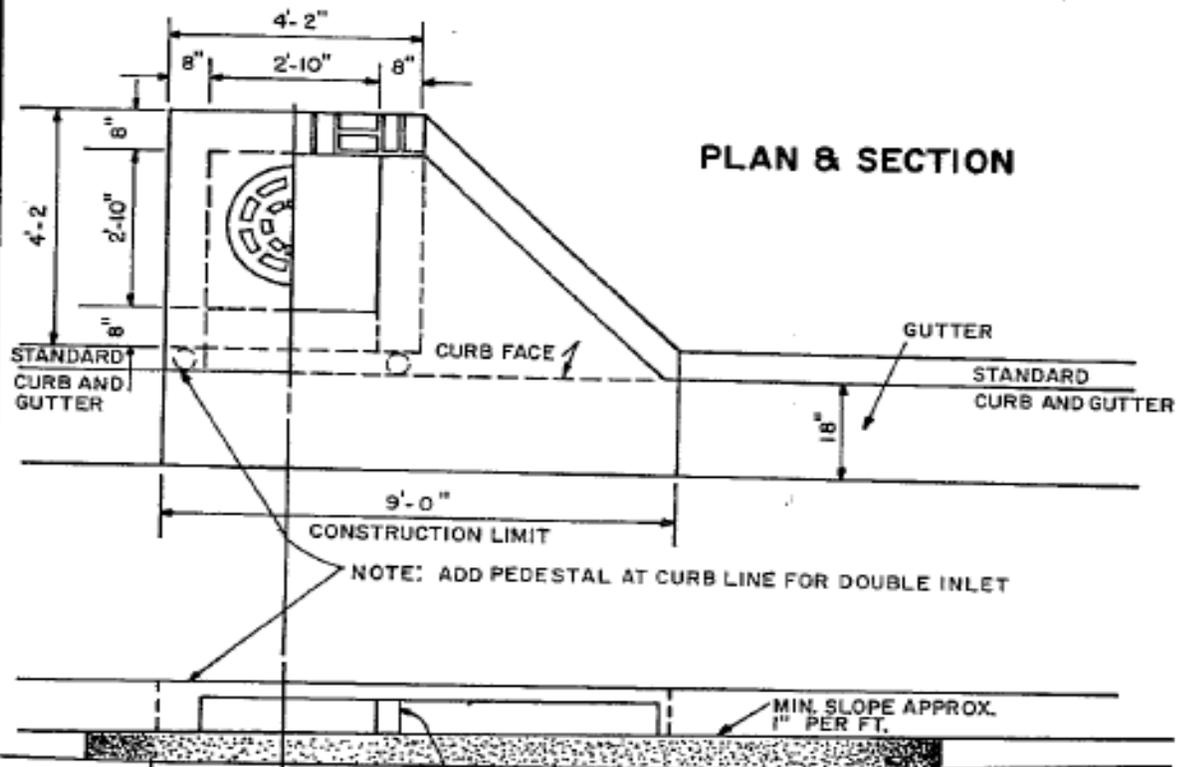
CITY ENGINEER
 DATE: 1-16-79

COLUMBIA ENGINEERING DEPARTMENT

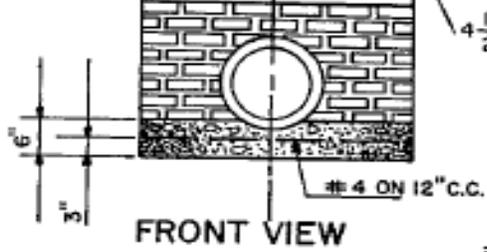
STANDARD DETAIL RI-6

SPECIAL INLET DETAILS

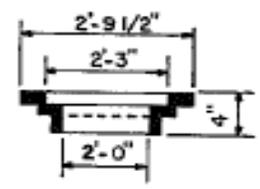
PLAN & SECTION



NOTE: ADD PEDESTAL AT CURB LINE FOR DOUBLE INLET

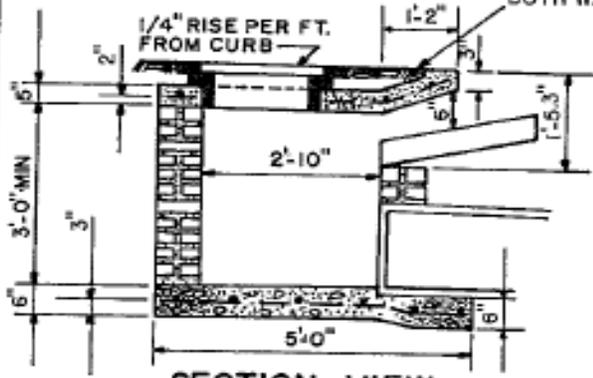


FRONT VIEW



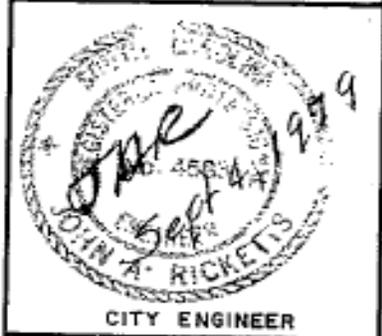
RING & COVER

CASTING FOR THE RING AND COVER SHALL BE SUMTER MACHINERY CO. MF 1342 AND MC 1342 OR EQUAL.



SECTION VIEW

FRAME 136 #
COVER 120 #
TOTAL 256 #



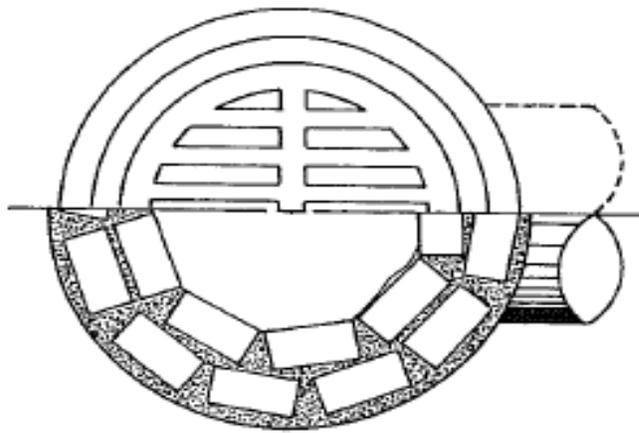
CITY ENGINEER

DATE:

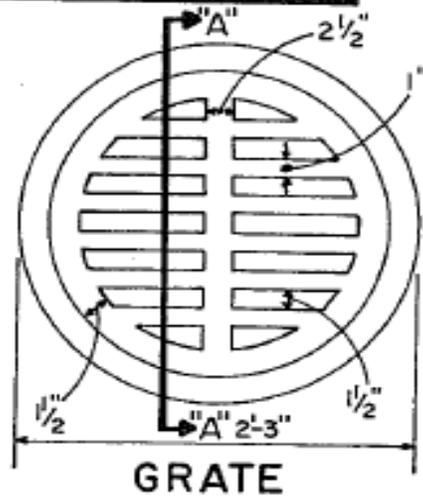
COLUMBIA ENGINEERING DEPARTMENT

STANDARD DETAIL RI-8 (REVISED)

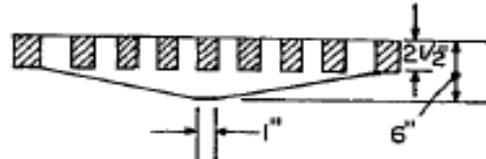
STANDARD ROUND TOP INLET



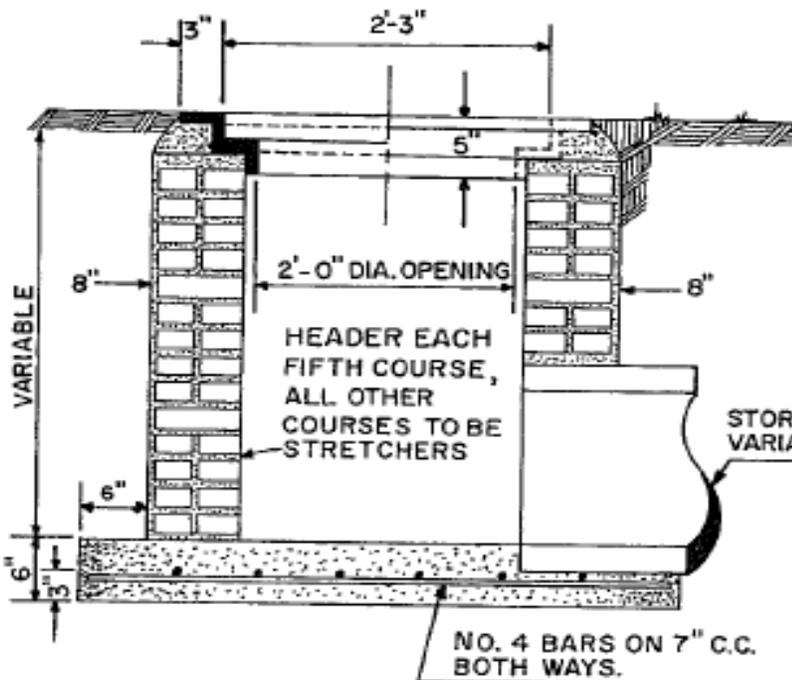
PLAN & SECTION



GRATE



SECTION "AA"



CASTINGS FOR THE
 FRAME AND GRATE TO
 BE SUMTER MACHINERY
 CO. MF-23 AND MG-23
 OR EQUAL
 FRAME WEIGHT 215 #
 GRATE WEIGHT 240 #
 ASSEMBLED WEIGHT 455 #

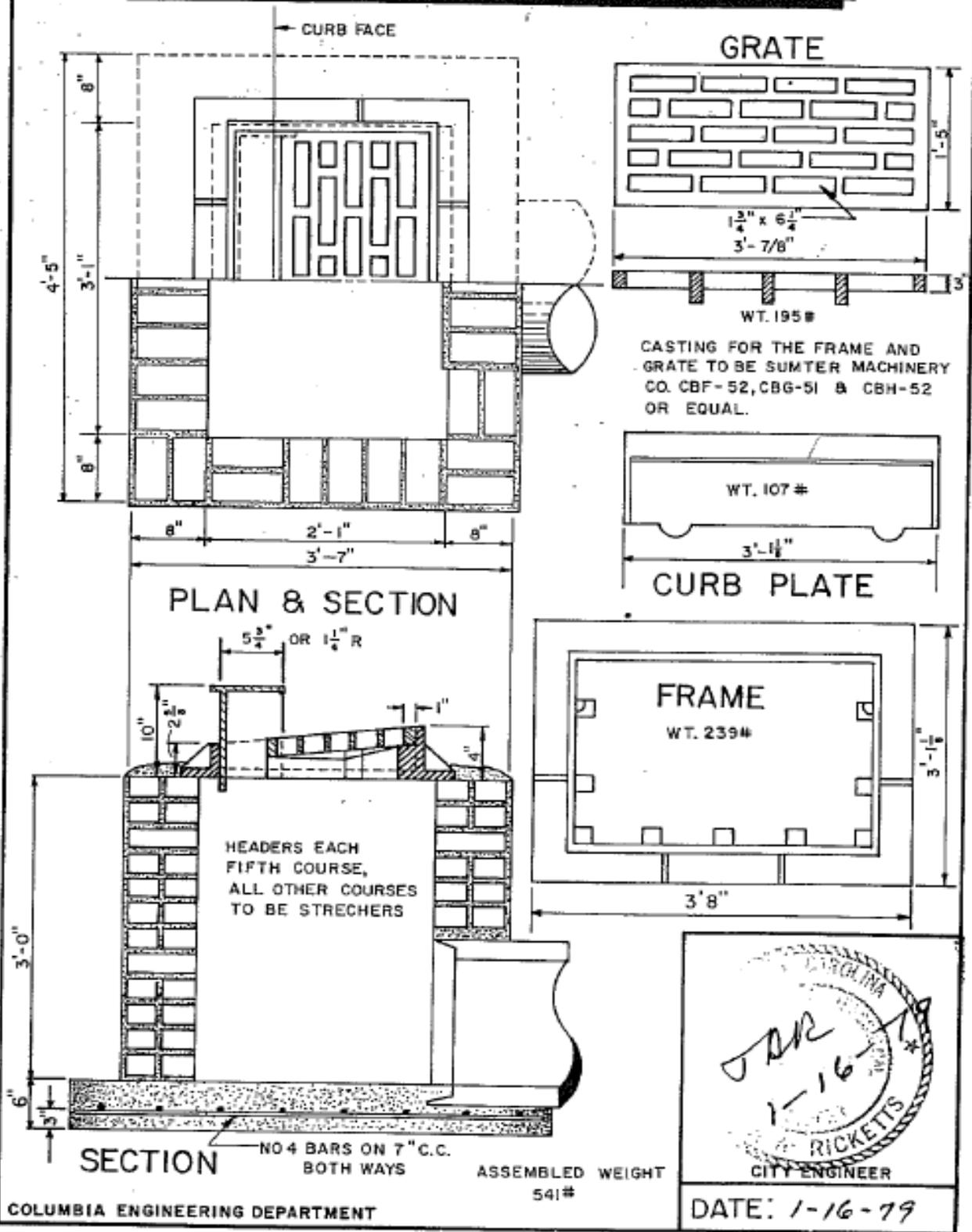
JPR
 1-16-79
 RICKETTS
 CITY ENGINEER

DATE: 1-16-79

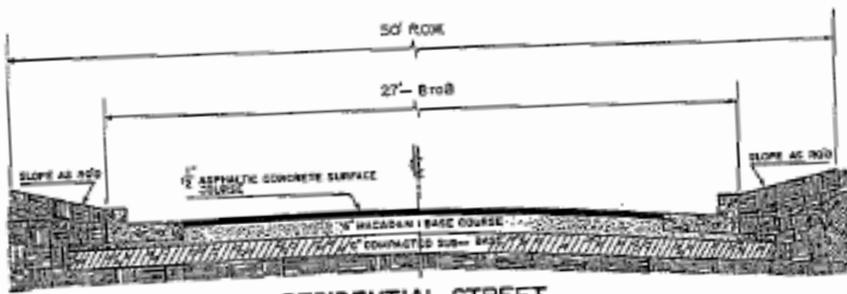
COLUMBIA ENGINEERING DEPARTMENT

STANDARD DETAIL RI-9

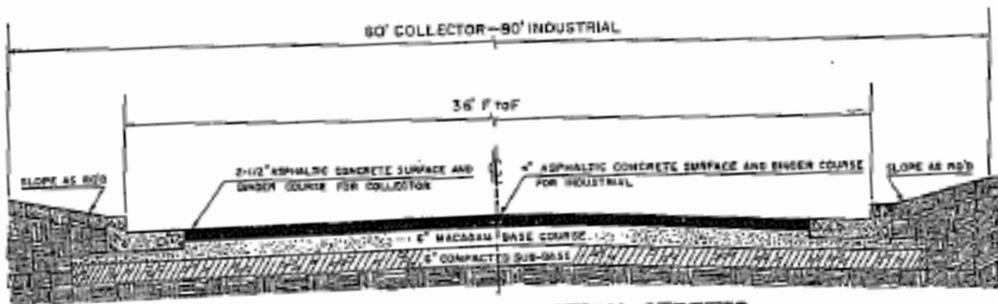
STANDARD CURB INLET



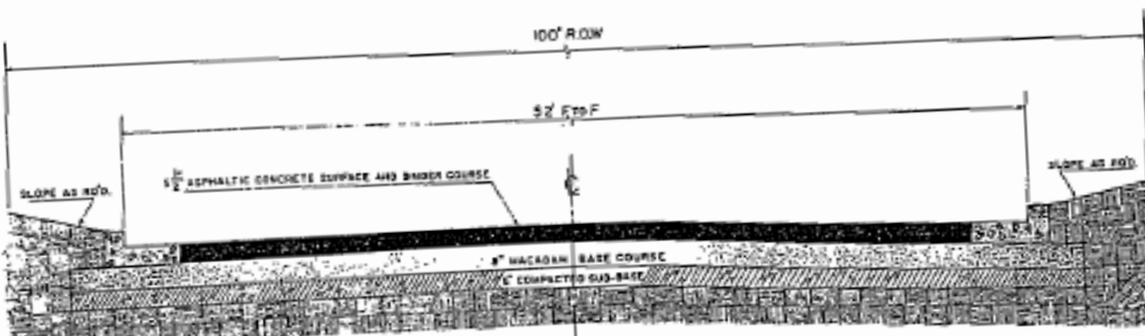
STANDARD DETAIL RI-10



RESIDENTIAL STREET



COLLECTORS AND INDUSTRIAL STREETS



ARTERIAL STREET

General Notes

- 1 THE ABOVE SECTIONS INDICATE MINIMUM REQUIREMENTS.
- 2 MATERIALS OF EQUAL STRENGTH, IN THEIR RESPECTIVE THICKNESSES REQUIRED, MAY BE SUBSTITUTED IN LIEU OF THE MINIMUM. SEE THE ROAD DESIGN STANDARDS, CITY OF COLUMBIA, FOR THE PROCEDURE.
- 3 CONSTRUCTION OF ROAD SECTIONS TO BE IN ACCORDANCE WITH THE ROAD CONSTRUCTION SPECIFICATIONS.
- 4 THESE SECTIONS APPLY TO FLEXIBLE PAVEMENT.
- 5 BARRIER OR ROLL TYPE CURBING IS ACCEPTABLE.

EQUIVALENT THICKNESS REQUIRED TO MAKE ONE INCH OF HOT LAID ASPHALTIC CONCRETE (1)			
HOT LAID ASPHALTIC CONCRETE SURFACE	1.00	OLD SURFACING	0.80
HOT LAID ASPHALTIC CONCRETE BINDER	1.20	OLD ASPHALTIC CONCRETE SURFACE	0.80
BITUMINOUS SURFACING	1.20	OLD ASPHALTIC CONCRETE BINDER	0.80
EARTH TYPE BASE (90% M.T.L.)	4.00	OLD SAND ASPHALT	0.50
EARTH TYPE BASE (80% M.T.L.)	3.75	BITUMINOUS SURFACING	0.50
MACADAM BASE	2.00	OTHER, 10% OF THE ORIGINAL VALUE	0.50
CEMENT STABILIZED EARTH BASE	1.50	OLD BASES	
HOT LAID SAND ASPHALT BASE	1.50	70% OF THE ORIGINAL VALUE	
STABILIZED AGGREGATE BASE	1.20	OLD SUB-BASES	
HOT LAID ASPHALT AGGREGATE BASE	1.20	80% OF THE ORIGINAL VALUE	
CEMENT STABILIZED AGGREGATE BASE	0.80		
OLD PAVEMENT	0.10		
EARTH TYPE SUB-BASE (90% M.T.L.)	5.80		
EARTH TYPE SUB-BASE (80% M.T.L.)	4.40		
SOL. AGGREGATE SUB-BASE	4.40		
CEMENT STABILIZED EARTH SUB-BASE	2.30		



CITY OF COLUMBIA
DEPARTMENT OF ENGINEERING
COLUMBIA, SOUTH CAROLINA

SCALE: NONE APPROVED BY: _____
DATE: MAY 19, 1977 DESIGN ENGINEER: _____

STANDARD ROAD SECTIONS

DRAWING NUMBER: _____