

**ROADWAYS**

**DIVISION 300**

THE PRINCIPAL ARTERIAL SYSTEM SHOULD SERVE THE MAJOR CENTERS OF ACTIVITY OF A METROPOLITAN AREA, THE HIGHEST TRAFFIC VOLUME CORRIDORS, AND THE LONGEST TRIPS. THE PRINCIPAL ARTERIAL SYSTEM SHOULD CARRY A HIGH PROPORTION OF THE TOTAL URBAN AREA TRAVEL ON A MINIMUM OF MILEAGE.

THE MINOR ARTERIAL STREET SYSTEM CONTAINS FACILITIES THAT PLACE MORE EMPHASIS ON LAND ACCESS THAN THE PRINCIPAL ARTERIAL SYSTEM AND OFFER A LOWER LEVEL OF TRAFFIC MOBILITY. SUCH FACILITIES MAY CARRY LOCAL BUS ROUTES AND PROVIDE INTRACOMMUNITY CONTINUITY, BUT IDEALLY SHOULD NOT PENETRATE IDENTIFIABLE NEIGHBORHOODS.

THE COLLECTOR STREET SYSTEM PENETRATES NEIGHBORHOODS DISTRIBUTING TRIPS FROM THE ARTERIALS THROUGH THE AREA TO THE ULTIMATE DESTINATION WHICH MAY BE ON A LOCAL OR COLLECTOR STREET. CONVERSELY, THE COLLECTOR STREET ALSO COLLECTS TRAFFIC FROM LOCAL STREETS IN THE NEIGHBORHOOD AND CHANNELS IT INTO THE ARTERIAL SYSTEM.

THE LOCAL STREET SYSTEM COMPRISES ALL FACILITIES NOT ON ONE OF THE HIGHER SYSTEMS. IT SERVES PRIMARILY TO PROVIDE DIRECT ACCESS TO ADJUTING LAND AND ACCESS TO THE HIGHER ORDER SYSTEMS. SERVICE TO THROUGH TRAFFIC MOVEMENT USUALLY IS DELIBERATELY DISCOURAGED.

AVERAGE DAILY TRAFFIC GUIDELINES

VEHICLES PER DAY\*

	<u>PRINCIPAL ARTERIAL</u>	<u>MINOR ARTERIAL</u>	<u>COLLECTOR STREET</u>	<u>LOCAL STREET</u>
<u>VOLUME LEVELS</u>				
4 LANES	225,000	15,000	5,000-10,000	LOW <2000
6 LANES	230,000	25,000	5,000-10,000	HIGH <5000
			HIGH 10,000-20,000	
			COMM/IND 10,000-20,000	

\*ALL VOLUMES INCLUDE TRAFFIC FROM BOTH DIRECTIONS.

PRINCIPAL ARTERIAL -

MINOR ARTERIAL -

COLLECTOR STREET -

LOCAL STREET -

## RECOMMENDED STANDARD STREET DIMENSIONS

STREET FUNCTIONAL CLASSIFICATION **	Minimum Lane Width	Parking *	Minimum Sidewalk Width *	Bikeway	Buffer	Median Including Left Bay	Back/Bac k Curb	Subtotal	Row Minimum Width
LOCAL (Low Volume)	2 of 10 20	2 of 7 14	2 of 4 8	(1)	2 of 3.5 7	NONE	35	50	50
LOCAL (High Volume)	2 of 11 22	2 of 9 18	2 of 5 10	(1)	2 of 4.5 9	NONE	41	60	60
COLLECTOR (Low Volume)	2 of 11 22	2 of 9 18	2 of 5 10	(2)	2 of 7.5 15	NONE	41	66	66
COLLECTOR (Medium Volume)	4 of 11 44	NONE	2 of 5 10	(2)	2 of 7.5 15	NONE	45	70	70
COLLECTOR (High Volume)	4 of 11 44	NONE	2 of 5 10	(2)	2 of 7.5 15	10 Min. Painted	55	80	80
COLLECTOR (Industrial/Commercial)	4 of 12 48	NONE	2 of 5 10	(3)	2 of 7.5 15	14 Min. 16 Max.	65	90	90
MINOR ARTERIAL	4 of 12 48	NONE	2 of 5 10	(3)	2 of 7 14	14 Min. 18 Max.	2 of 26 52	90	90
PRINCIPAL ARTERIAL (Low Volume - 4 Lanes)	6 of 12 72	NONE	2 of 5 10	(3)	2 of 10 20	14 Min. 20 Max.	2 of 38 76	120	120
PRINCIPAL ARTERIAL (High Volume - 6 Lanes)									

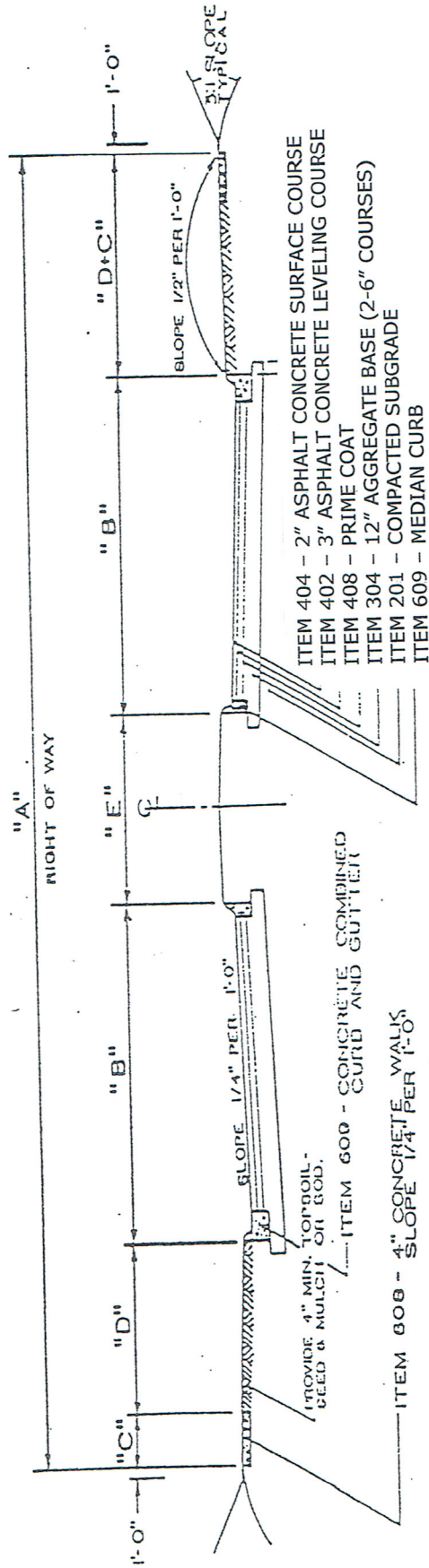
\* - PARKING AND SIDEWALKS ON BOTH SIDES. PARKING AND BIKEWAYS CAN BE INTERCHANGED.

- (1) CLASS 3 - SHARE ROADWAY WITH AUTOMOBILE
- (2) CLASS 2 - IN BUFFERZONE OR ON PAVEMENT ADJACENT TO ROADWAY.
- (3) CLASS 1 - EXCLUSIVE FACILITY; PARALLEL TO ROADWAY.

\*\* THE RECOMMENDED STANDARD STREET DIMENSIONS ARE ESTABLISHED FOR TWO-WAY MOVEMENT.

# PRINCIPAL ARTERIAL STREET TYPICAL SECTION

## ASPHALT CONCRETE PAVEMENT AGGREGATE BASE



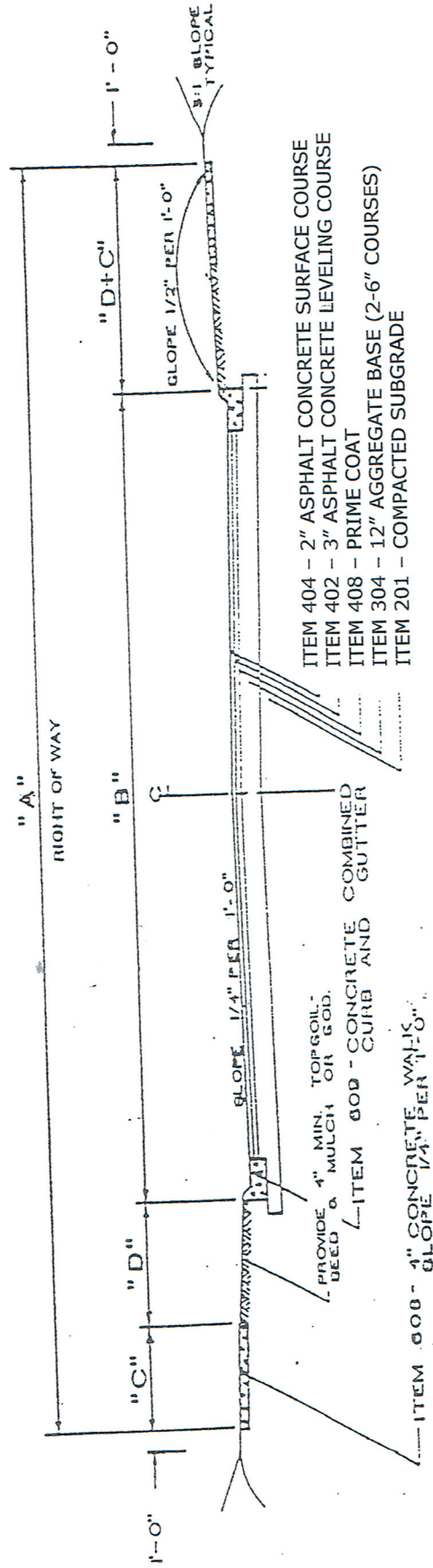
	4 LANES	6 LANES
A	90'	120'
B	26'	38'
C	5'	5'
D	7' - 9'	7' - 10'
E	14' - 18'	14' - 20'
D+C	12' - 14'	12' - 15'

RECOMMENDED STANDARD DIMENSION

# MINOR ARTERIAL STREET TYPICAL SECTION

## ASPHALT CONCRETE PAVEMENT

### AGGREGATE BASE



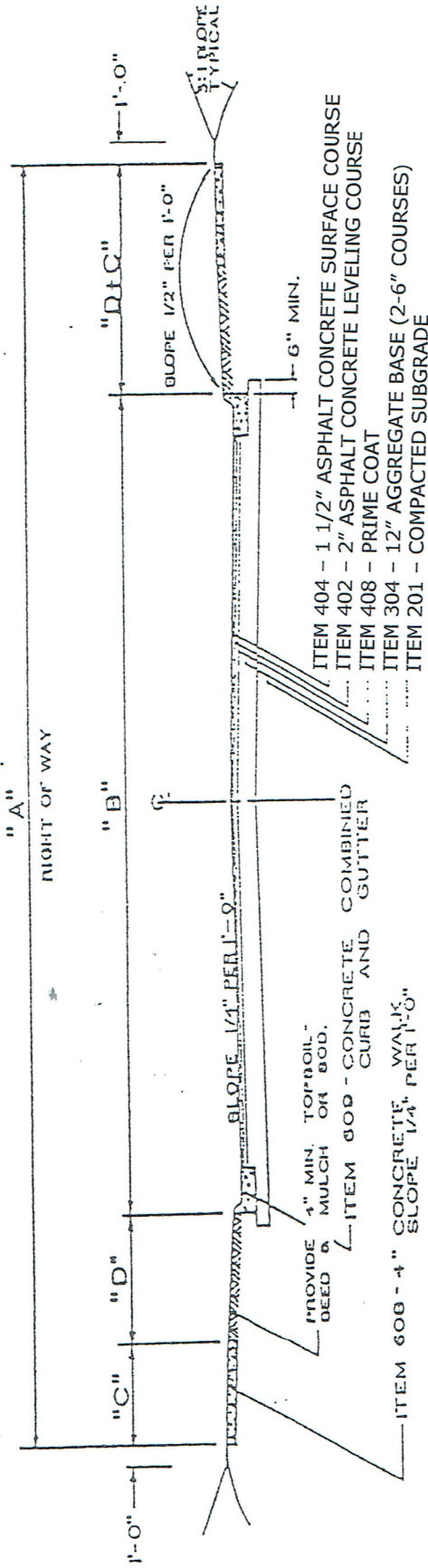
	HIGH	COMM / INDUS #
A	9'0"	8'0"
B	6'5"	6'5"
C	5'	5'
D	7'5"	7'5"
D+C	12'5"	12'5"

RECOMMENDED STANDARD DIMENSION

# PROVIDE A MIN. THICKNESS OF  
2" OF ITEM 404, 3" OF ITEM 403,  
AND 12" OF ITEM 304 FOR COMMERCIAL  
AND INDUSTRIAL PAVEMENTS

# COLLECTOR STREET TYPICAL SECTION

## ASPHALT CONCRETE PAVEMENT AGGREGATE BASE



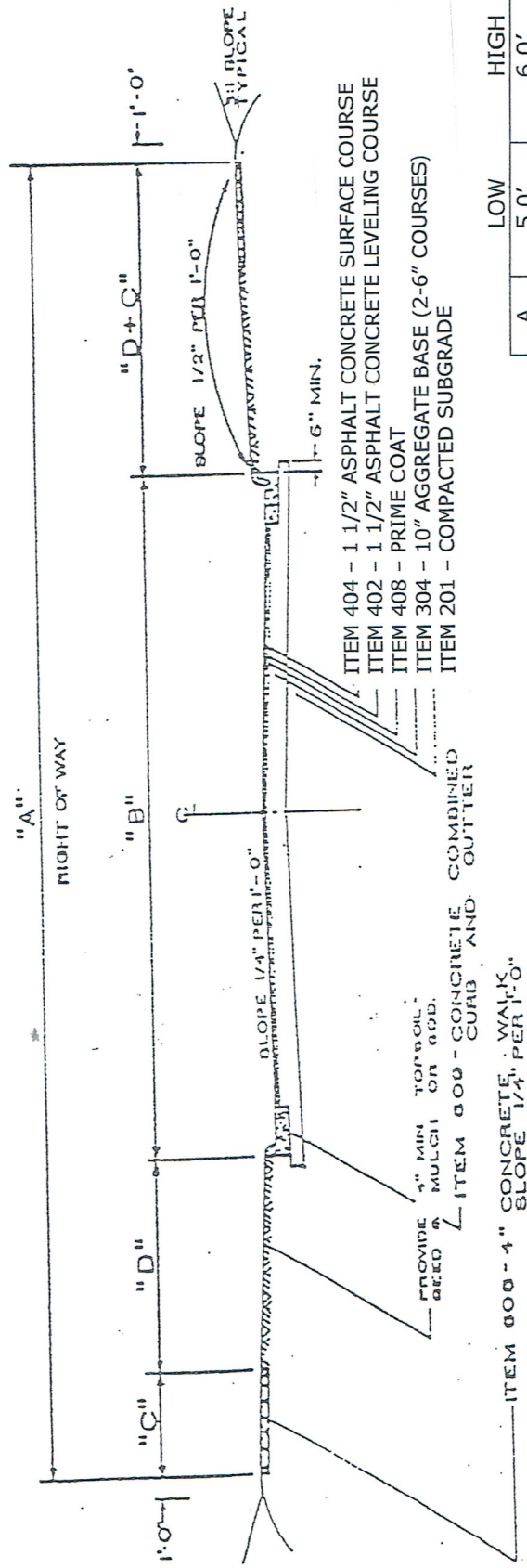
	LOW	MED.	HIGH	COMM / INDUS #
A	60'	66'	70'	8.0'
B	41'	41'	45'	5.5'
C	5'	5'	5'	5'
D	4.5'	7.5'	7.5'	7.5'
D+C	9.5'	12.5'	12.5'	12.5'

RECOMMENDED STANDARD DIMENSION

# PROVIDE A MIN. THICKNESS OF  
2" OF ITEM 404, 3" OF ITEM 403,  
AND 12" OF ITEM 304 FOR COMMERCIAL  
AND INDUSTRIAL PAVEMENTS

# LOCAL STREET TYPICAL SECTION

## ASPHALT CONCRETE PAVEMENT AGGREGATE BASE



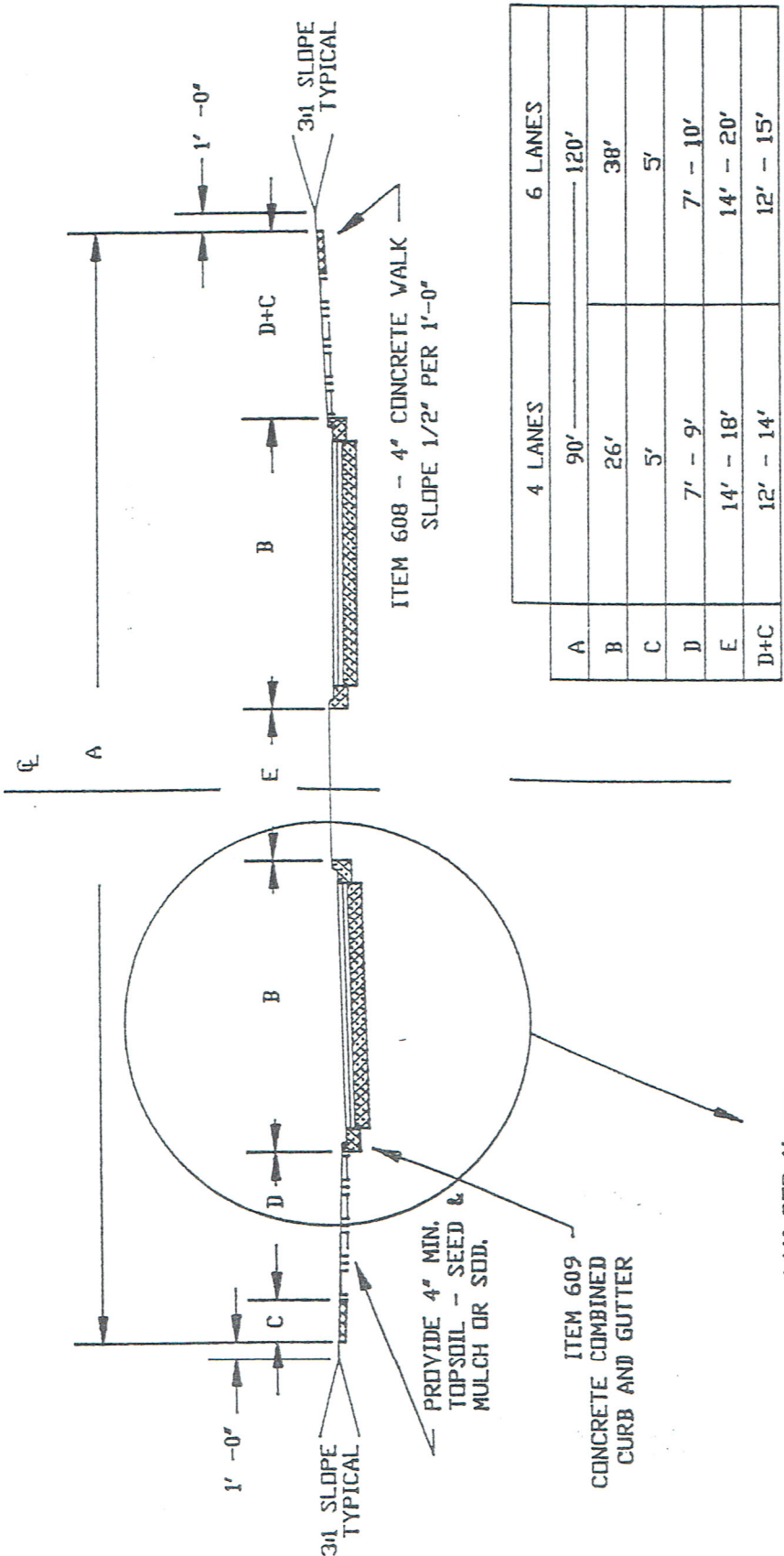
	LOW	HIGH
A	5.0'	6.0'
B	3.5'	4.1'
C	4'	5'
D	3.5'	4.5'
D+C	7.5'	9.5'

RECOMMENDED STANDARD DIMENSION

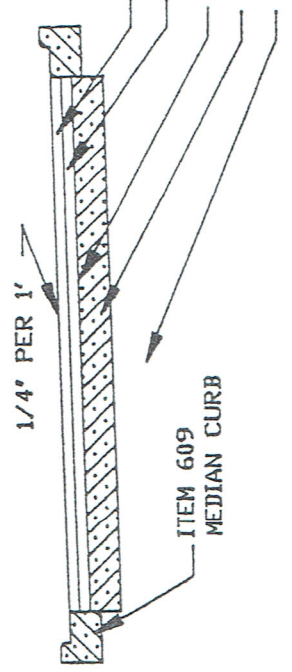
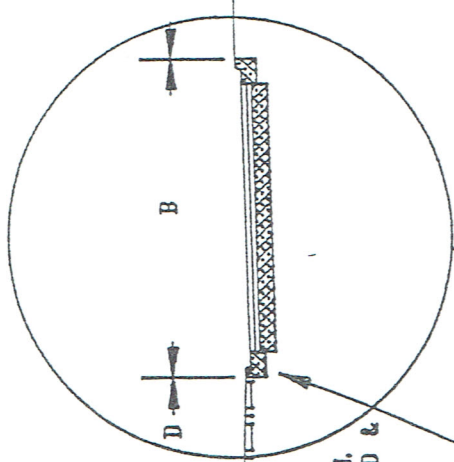
# PROVIDE A MIN. THICKNESS OF  
2" OF ITEM 404, 3" OF ITEM 403,  
AND 12" OF ITEM 304 FOR COMMERCIAL  
AND INDUSTRIAL PAVEMENTS

# PRINCIPAL ARTERIAL STREET TYPICAL SECTION

## ASPHALT CONCRETE PAVEMENT ASPHALTIC CONCRETE BASE



	4 LANES	6 LANES
A	90'	120'
B	26'	38'
C	5'	5'
D	7' - 9'	7' - 10'
E	14' - 18'	14' - 20'
D+C	12' - 14'	12' - 15'



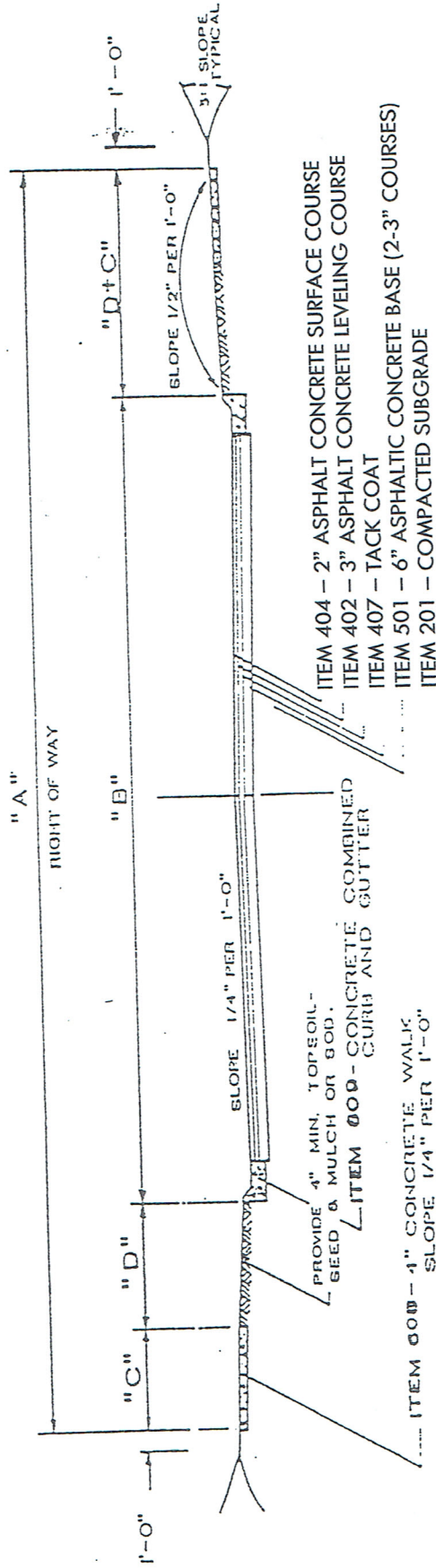
- ITEM 404 - 2" ASPHALT CONCRETE SURFACE COURSE
- ITEM 403 - 3" ASPHALT CONCRETE LEVELING COURSE
- ITEM 407 - TACK COAT
- ITEM 301 - 6" ASPHALTIC CONCRETE BASE (2-3" COARSE)
- ITEM 201 - COMPACTED SUBGRADE



# MINOR ARTERIAL STREET TYPICAL SECTION

## ASPHALT CONCRETE PAVEMENT

### ASPHALTIC CONCRETE BASE



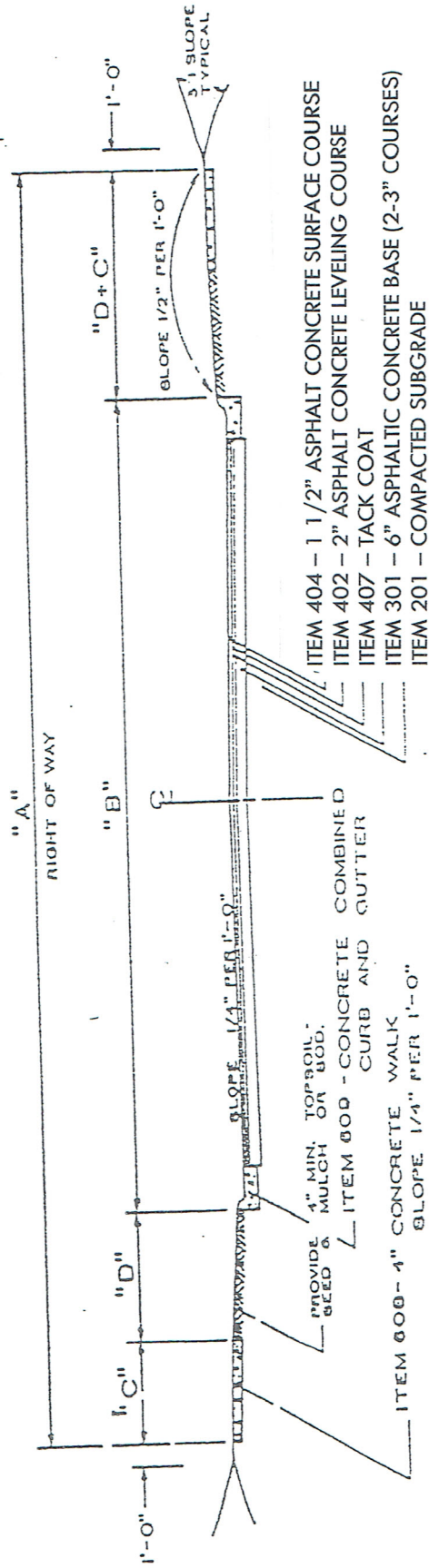
	HIGH	COMM/INDUS	#
A	9.0'		9.0'
B	6.5'		6.5'
C	5'		5'
D	7.5'		7.5'
D+C	12.5'		12.5'

RECOMMENDED STANDARD DIMENSIONS

# PROVIDE A MIN. THICKNESS OF 2" OF ITEM 404, 3" OF ITEM 402, AND 6" OF ITEM 301 FOR COMMERCIAL AND INDUSTRIAL PAVEMENTS.

# COLLECTOR STREET TYPICAL SECTION

## ASPHALT CONCRETE PAVEMENT ASPHALTIC CONCRETE BASE



	LOW	MED.	HIGH	COMM/INDUS	#
A	6'0"	6'6"	7'0"	8'0"	8'0"
B	4'1"	4'1"	4'5"	5'5"	5'5"
C	5"	5"	5"	5"	5"
D	4.5'	7.5'	7.5'	7.5'	7.5'
D+C	9.5'	12.5'	12.5'	12.5'	12.5'

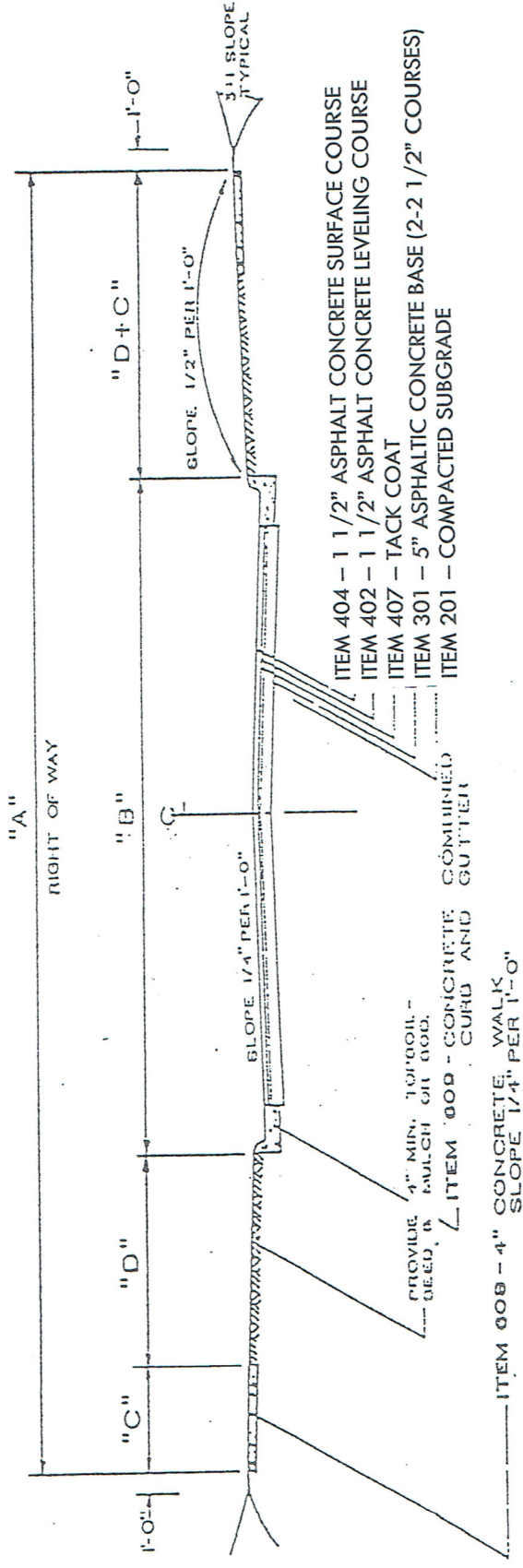
RECOMMENDED STANDARD DIMENSIONS

# PROVIDE A MIN. THICKNESS OF 2" OF ITEM 404, 3" OF ITEM 402, AND 6" OF ITEM 301 FOR COMMERCIAL AND INDUSTRIAL PAVEMENTS.

# LOCAL STREET TYPICAL SECTION

## ASPHALT CONCRETE PAVEMENT

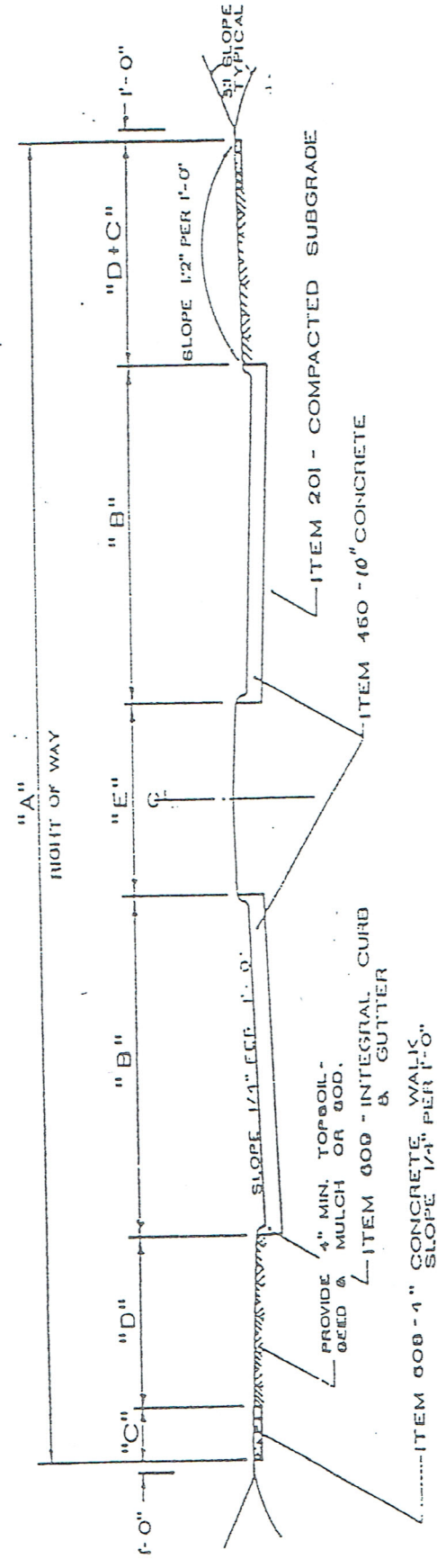
### ASPHALTIC CONCRETE BASE



	LOW	HIGH
A	5'0"	6'0"
B	3'5"	4'1"
C	4'	5'
D	3'5"	4'5"
D+C	7'5"	9'5"

RECOMMENDED  
STANDARD DIMENSIONS

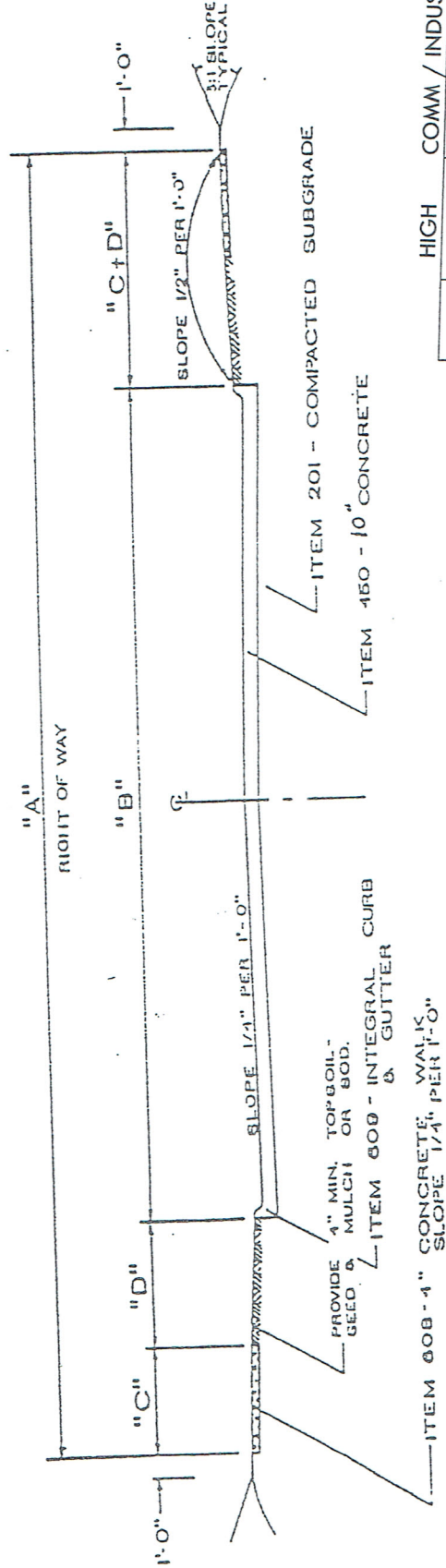
# PRINCIPAL ARTERIAL STREET TYPICAL SECTION CONCRETE PAVEMENT



4 LANES		6 LANES	
A	90'	----- 120'	
B	26'	41'	
C	5'	5'	
D	7'-9"	7'-10"	
E	14'-18"	14'-20"	
D+C	12'-14'	12'-15'	

RECOMMENDED  
STANDARD DIMENSIONS

# MINOR ARTERIAL STREET TYPICAL SECTION CONCRETE PAVEMENT

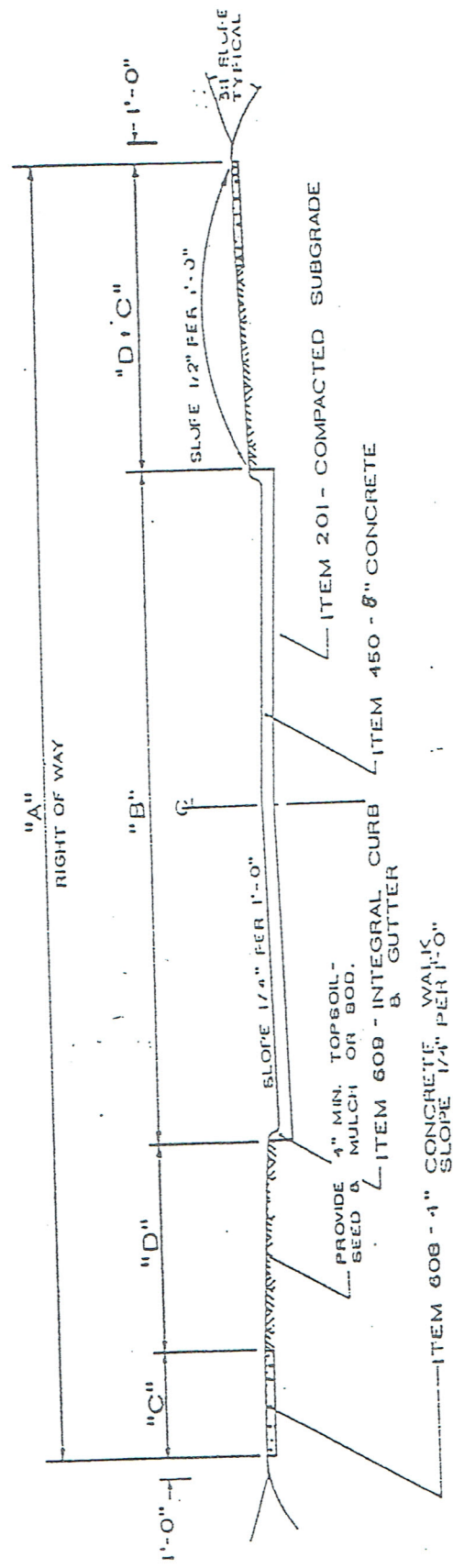


	HIGH	COMM / INDUS.	#
A	9'0"	9'0"	
B	6'5"	6'5"	
C	5'	5'	
D	7'5"	7'5"	
D+C	12'5"	12'5"	

RECOMMENDED  
STANDARD DIMENSIONS

# PROVIDE A MIN. "B" CONCRETE PAVEMENT ITEM 450 FOR COMMERCIAL AND INDUSTRIAL PAVEMENTS.

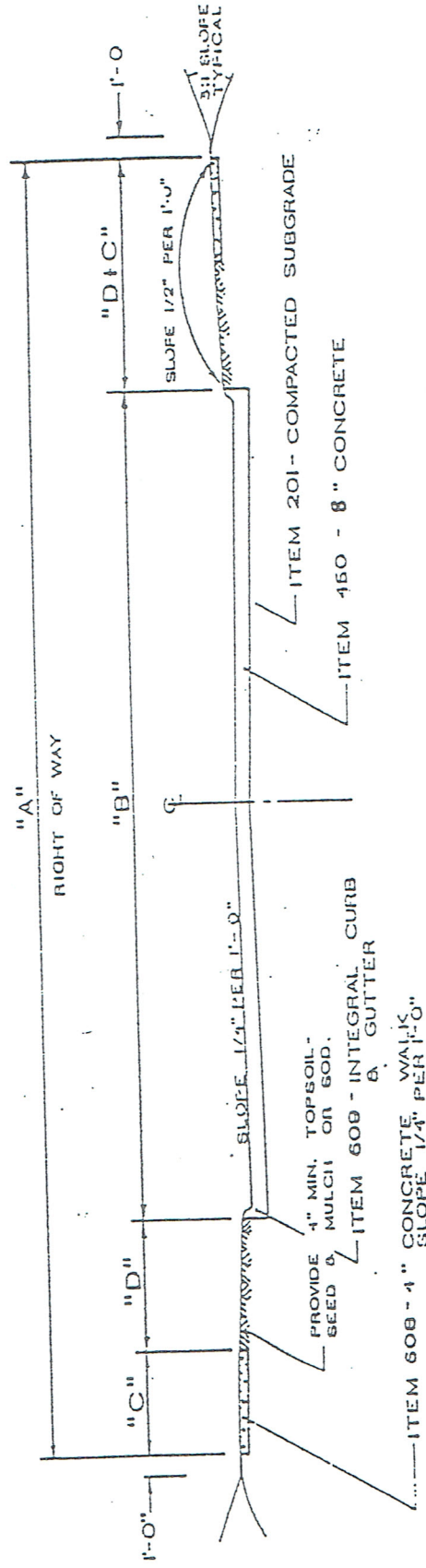
# LOCAL STREET TYPICAL SECTION CONCRETE PAVEMENT



	LOW	HIGH
A	5.0'	6.0'
B	3.5'	4.1'
C	4'	5'
D	3.5'	4.5'
D+C	7.5'	9.5'

RECOMMENDED  
STANDARD DIMENSIONS

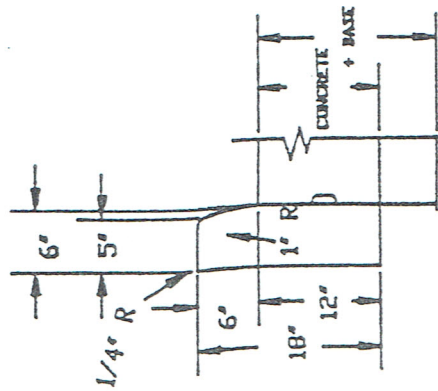
# COLLECTOR STREET TYPICAL SECTION CONCRETE PAVEMENT



	LOW	MED	HIGH	COMM / INDUS. #
A	6'0"	6'6"	7'0"	9'0"
B	4'	4'1"	4'5"	5'5"
C	5'	5'	5'	5'
D	4.5'	7.5'	7.5'	7.5'
D+C	9.5'	12.5'	12.5'	12.5'

RECOMMENDED  
STANDARD DIMENSIONS

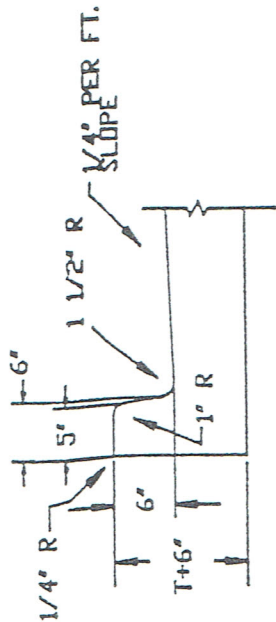
# PROVIDE A MIN. "B" CONCRETE PAVEMENT ITEM 450 FOR COMMERCIAL AND INDUSTRIAL PAVEMENTS.



TYPE "D"  
MEDIAN CURB

NOTE:

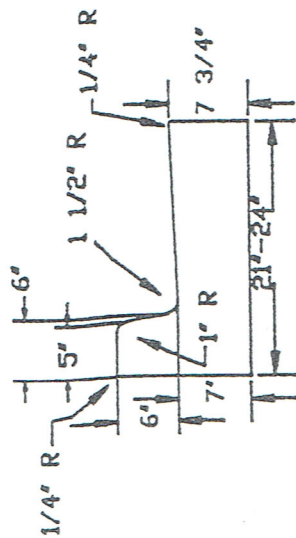
1. USE AROUND ALL MEDIAN SECTIONS.
2. WHEN USED WITH CONCRETE PAVEMENTS, CURB SHALL BE KEYPED AND NOT BE INTEGRALLY Poured.



TYPE "C"  
INTEGRAL CURB & GUTTER

NOTE:

1. USE IN BUSINESS AND INDUSTRIAL AREAS.
2. TRANSVERSE JOINTS SHALL BE EXTENDED THRU THE CURB.



TYPE "B"  
COMBINED CURB & GUTTER

NOTE:

1. USE WITH ALL ASPHALT PAVEMENTS.
2. 1/4" PREMOLDED EXPANSION JOINTS SHALL BE CONSTRUCTED EACH SIDE OF DRIVEWAY APPROACH SECTIONS AND AT P.C. POINTS AT INTERSECTIONS. BUT THE MAXIMUM SPACING SHALL NOT EXCEED 100'.

GENERAL NOTES:

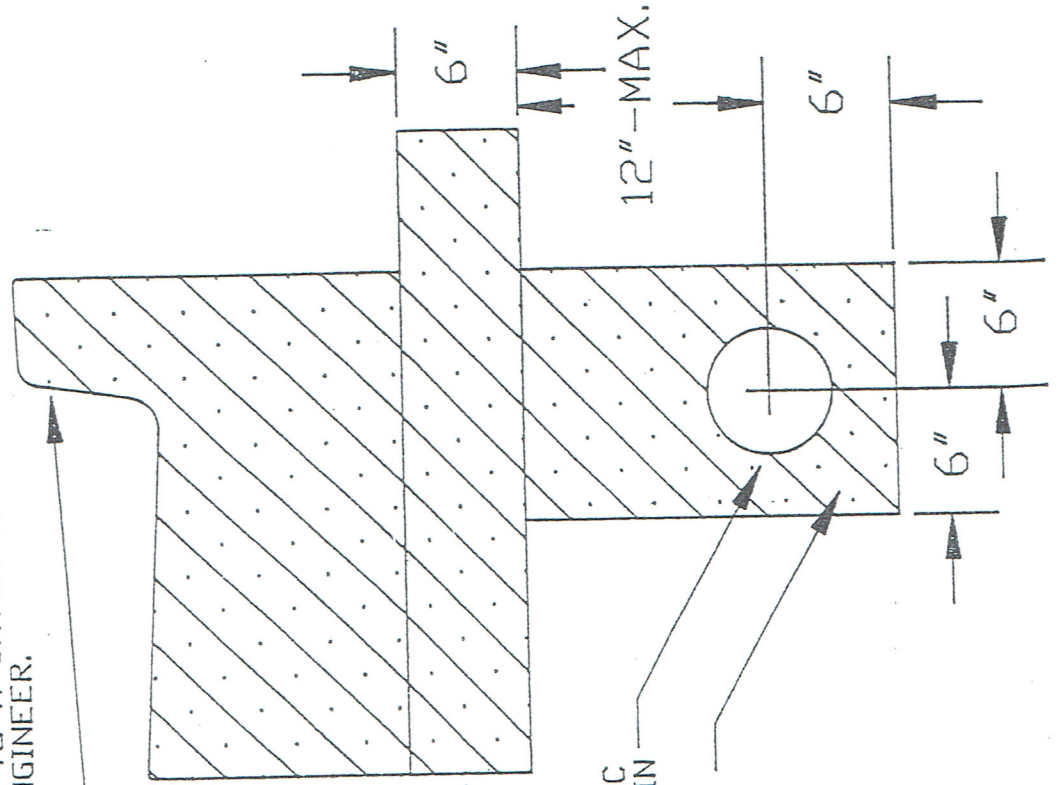
1. CONCRETE SHALL MEET THE REQUIREMENTS SET FORTH IN ITEM 609-CURBING.
2. WHEN USED WITH ASPHALT PAVEMENTS, TYPE "B, D & E" CURBING SHALL HAVE CONTRACTION JOINTS EVERY 10'. WHEN TYPE "D" CURBING IS USED WITH CONCRETE PAVEMENTS, CONTRACTION JOINTS SHALL BE PLACED OPPOSITE CONTRACTION JOINTS IN THE PAVEMENT.
3. SIX (6) INCHES OF 304 SHALL BE PLACED UNDER TYPE "B, D & E" CURBING WHEN IN A FILL AREA OR AS DIRECTED BY THE ENGINEER.
4. CURBING SHALL BE BACKFILLED IMMEDIATELY AFTER FORMS ARE REMOVED.
5. IN ONE FOOT OR MORE OF FILL PROVIDE REINFORCING STEEL IN CURB SECTION 3 - #4 BARS @ 8" O.C.
6. PROVIDE BROOM FINISH AND EDGING TO ALL EXPOSED SURFACES.



# TYPICAL CURB DRAIN DETAIL

## GENERAL NOTES:

1. DOWNSPOUTS AND FOUNDATION DRAINS ARE TO BE CONNECTED TO CURB UNDERDRAIN, UNLESS OTHER DRAINAGE METHODS ARE APPROVED BY THE ENGINEER.
2. DRAINAGE THROUGH THE CURB IS PROHIBITED.
3. UNDERDRAIN SHALL BE CONNECTED TO A CATCH BASIN OR TO A NATURAL DRAINAGE-WAY IN MANNER APPROVED BY THE ENGINEER.



COMBINED CURB & GUTTER (TYP.)

ITEM 304 6" AGGREGATE BASE,  
AS DIRECTED BY THE ENGINEER.

6" PERFORATED PLASTIC  
CURB UNDERDRAIN

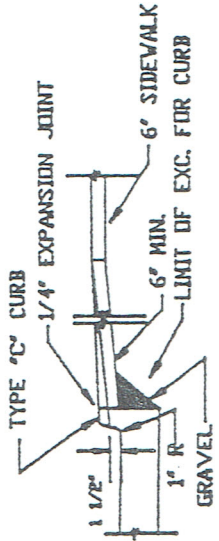
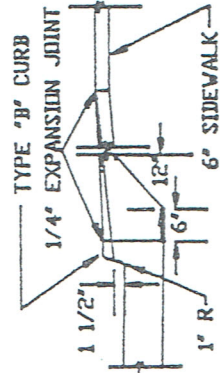
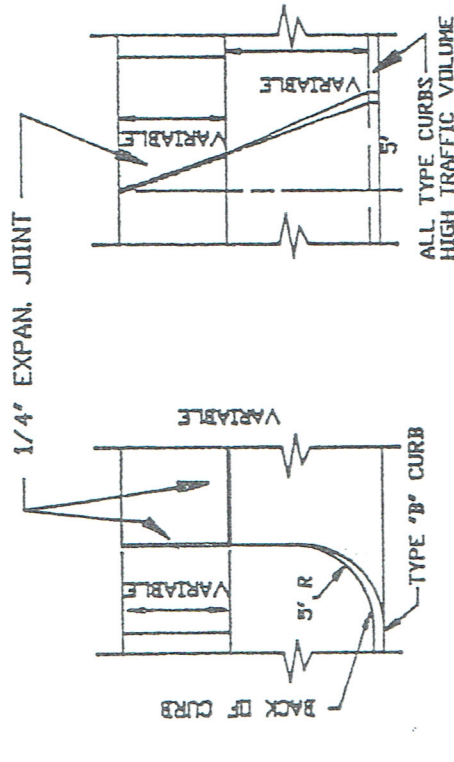
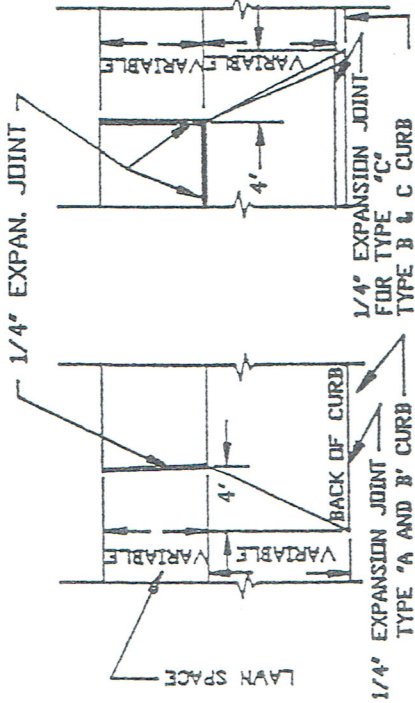
BEDDED IN #57 AGGREGATE

# SECTIONS

## GENERAL NOTES:

1. DRIVE APPROACHES SHALL MEET THE REQUIREMENTS OF ITEM 500 - CAST IN PLACE CONCRETE.
2. ROLL CURBS SHALL NOT BE DEPRESSED EXCEPT FOR HIGH TRAFFIC VOLUME DRIVE APPROACHES.
3. DRIVE APPROACHES SHALL NOT BE POURED MONOLITHICALLY WITH TYPE "B" CURB.
4. MAXIMUM JOINT SPACING SHALL BE 12' LONGITUDINALLY AND TRANSVERSELY.
5. DRIVE APPROACHES SHALL BE KEYS AT ALL CONSTRUCTION JOINTS.
6. EXPANSION MATERIAL SHALL BE 1/4" PREMOULDED.
7. 6" OF GRAVEL SHALL BE PLACED UNDER DRIVE APPROACHES IF DETERMINED NECESSARY BY THE ENGINEER.
8. PROVIDE BROOM FINISH AND EDGING TO ALL EXPOSED SURFACES.
9. CONCRETE SHALL BE 4000 PSI MIX.

### PLAN VIEWS



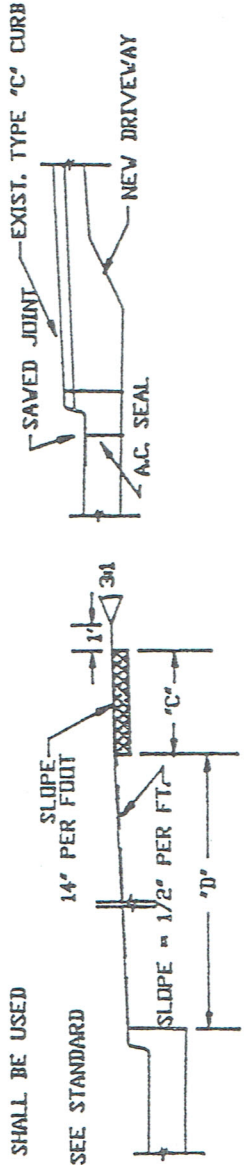
SEE TYPICAL ROADWAY SECTIONS FOR STANDARD VALUES

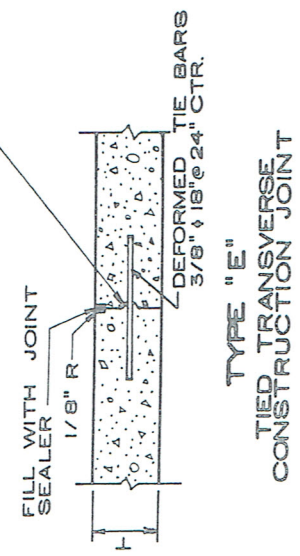
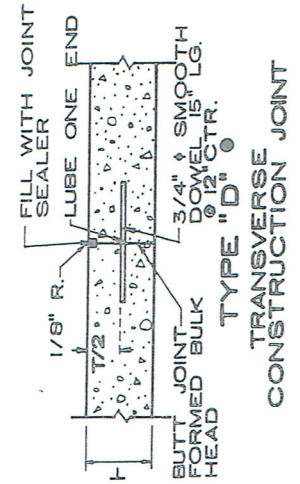
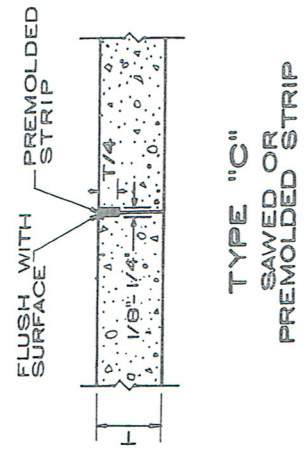
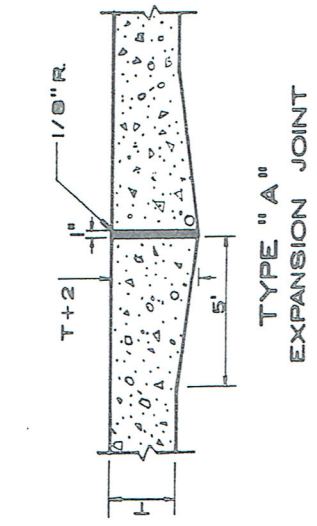
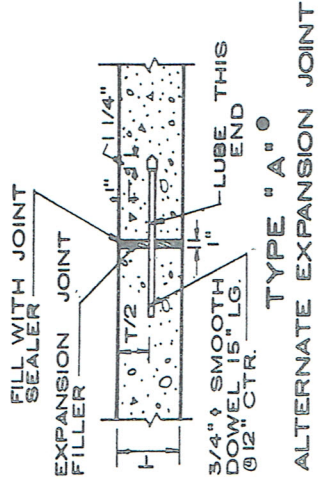
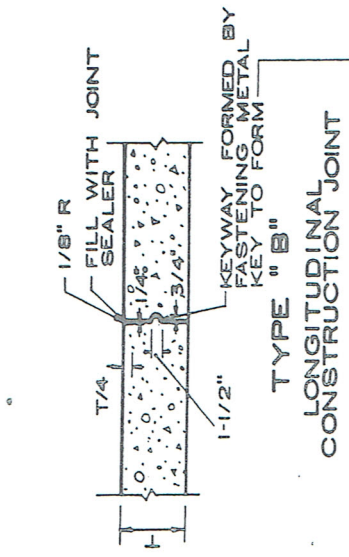
### NOTES

1. WHERE TYPE "C" CURB HAS NOT PREVIOUSLY BEEN DROPPED AT DRIVE APPROACHES, REMOVE AND REPLACE AS SHOWN IN SECTION.
2. WHERE TYPE "B" CURB HAS NOT BEEN DROPPED AT DRIVE APPROACHES, IT SHALL BE ENTIRELY REMOVED AND REPLACED AS SHOWN IN SECTION.
3. WHERE ASPHALTIC CONCRETE PAVEMENT IS DISTURBED, THE ASPHALT SHALL BE REPLACED AS DIRECTED BY THE ENGINEER.

### NOTE:

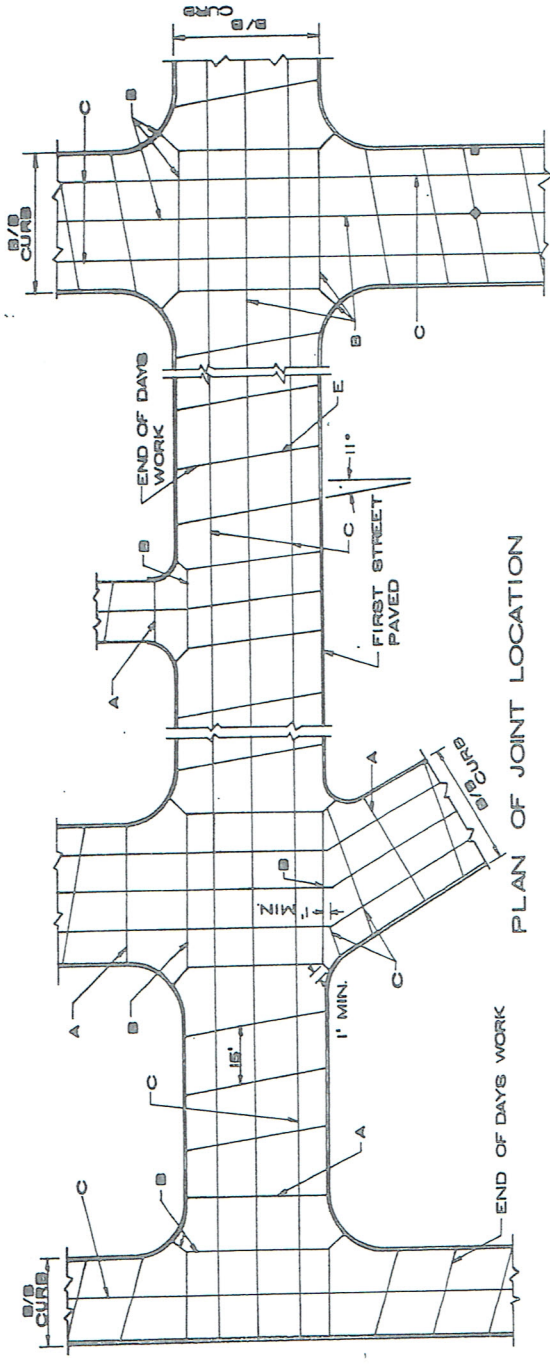
1. HIGH TRAFFIC VOLUME DRIVE APPROACHES SHALL BE USED ONLY WITH THE APPROVAL OF THE ENGINEER.
2. THE DRIVE APPROACH FLARES SHOWN ABOVE SHALL BE USED ONLY WITH THE TYPE OF CURB INDICATED.
3. FOR COMMERCIAL SERVICE DRIVE ENTRANCE, SEE STANDARD DRAWING.



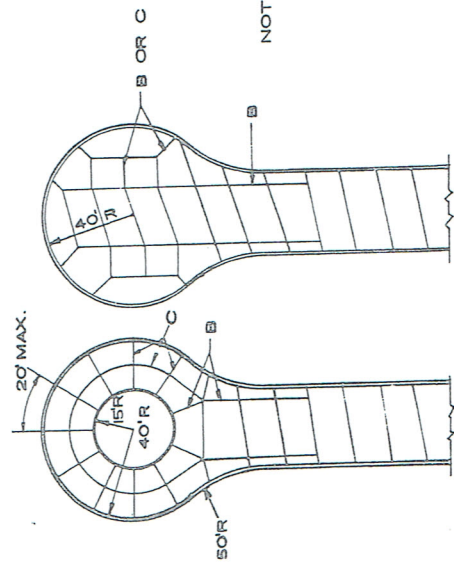


NOTE: THESE DOWELLED JOINTS MUST BE CONSTRUCTED PERPENDICULAR TO THE CENTERLINE OF PAVEMENT.

# CONCRETE PAVEMENT JOINT DETAILS



PLAN OF JOINT LOCATION

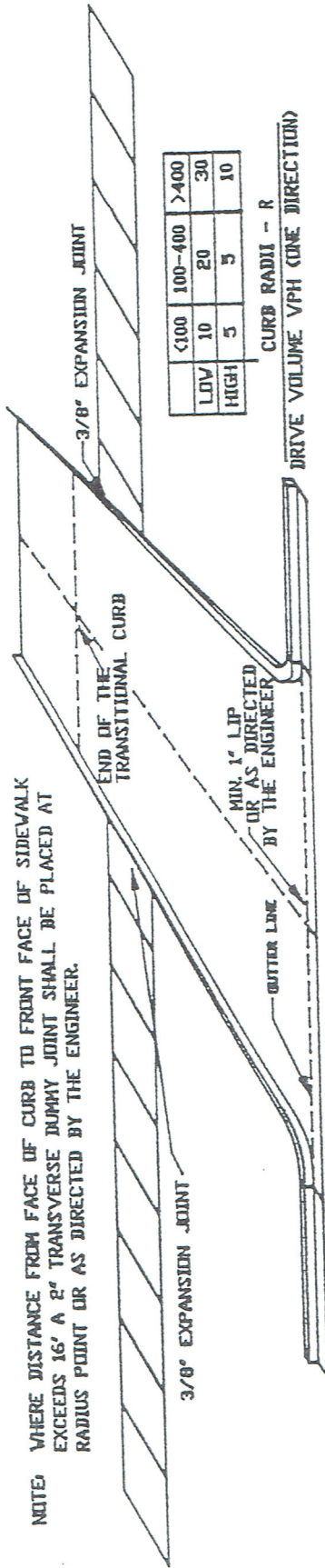


NOTE: SEE STD. DRAWING FOR CONCRETE PAVEMENT JOINT DETAILS.

CUL DE SAC OPEN CENTER  
CUL DE SAC FULLY PAVED

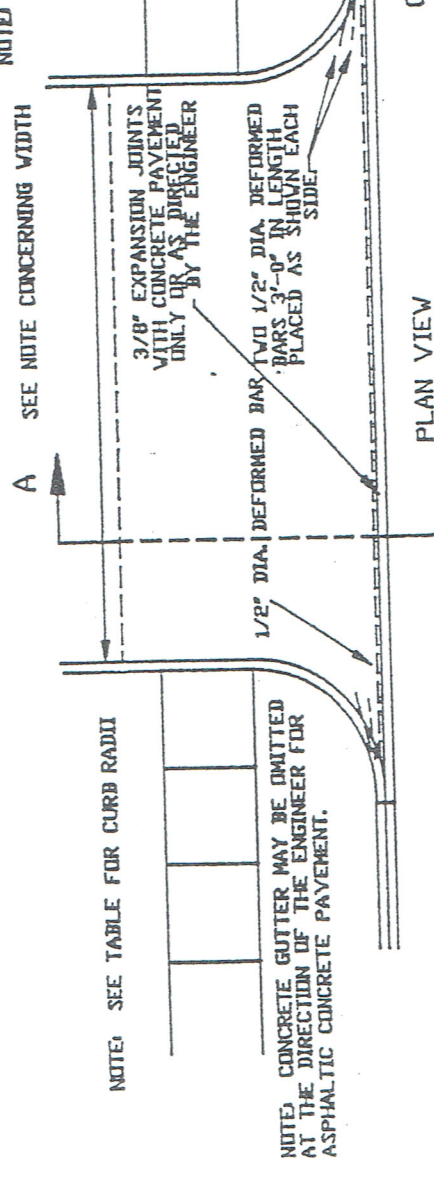
CONCRETE PAVEMENT CONSTRUCTION JOINTS

# COMMERCIAL SERVICE DRIVE APPROACH



## PERSPECTIVE VIEW

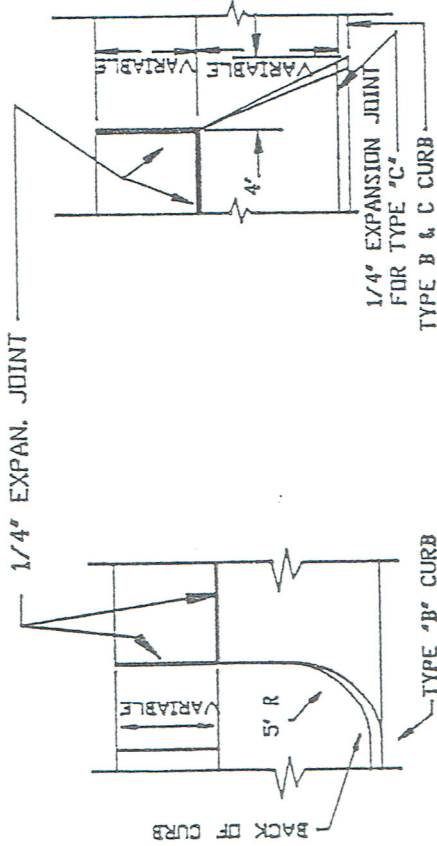
NOTE: MINIMUM WIDTH FOR ONE-VAY TRAFFIC IS 16'-0"  
 MINIMUM WIDTH FOR TWO-VAY TRAFFIC IS 25'-0"  
 MAXIMUM WIDTH IS 30'-0" UNLESS OTHERWISE APPROVED BY THE ENGINEER.



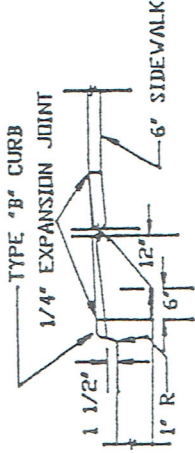
## GENERAL NOTES

JOINTS SHALL BE CLEANED AND EDGED BY A 1/4" RADIUS EDGER. LONGITUDINAL JOINTS SHALL BE AS DIRECTED BY THE ENGINEER. EXPANSION JOINTS SHALL BE OF SUCH DIMENSIONS AS SHOWN ON STANDARD DRAWINGS FOR CONSTRUCTION JOINTS. MATERIAL SHALL MEET THE REQUIREMENTS OF THESE SPECIFICATIONS. DRIVEWAY APPROACH RADIUS SHALL BE DETERMINED BY DIRECTOR OF PUBLIC WORKS OR A DESIGNATED ASSIGNEE.

PLAN VIEWS



SECTIONS

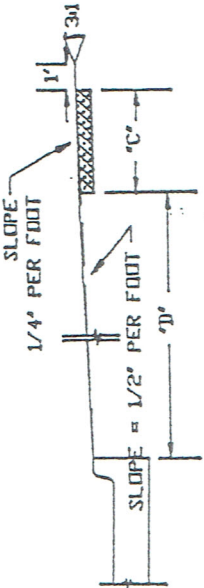


GENERAL NOTES

1. DRIVE APPROACHES SHALL MEET THE REQUIREMENTS OF CONCRETE NOTES ON THIS SHEET.
2. DRIVE APPROACHES SHALL NOT BE POURED MONOLITHICALLY WITH TYPE "B" CURB.
3. MAXIMUM JOINT SPACING SHALL BE 12 FEET BOTH WAYS.
4. DRIVE APPROACHES SHALL BE KEYED AT ALL CONSTRUCTION JOINTS.
5. EXPANSION MATERIAL SHALL BE 1/4 INCH PREMOULDED.
6. 3 INCHES OF GRAVEL SHALL BE PLACED UNDER DRIVE APPROACHES IF DETERMINED NECESSARY BY THE ENGINEER.
7. WHERE TYPE "B" CURB HAS NOT BEEN DROPPED AT DRIVE APPROACHES, IT SHALL BE ENTIRELY REMOVED AND REPLACED AS SHOWN IN SECTION.
8. WHERE ASPHALTIC CONCRETE PAVEMENT IS DISTURBED, THE ASPHALT SHALL BE REPLACED AS DIRECTED BY THE ENGINEER.

NOTES

1. ALL SIDEWALKS & RAMPS TO BE CONCRETE 4000 PSI COMPRESSIVE STRENGTH AT 28 DAYS. NO ASPHALT TO BE USED.
2. ALL CONCRETE TO HAVE 5% TO 6% AIR TO SUPPLIER.  
(A) IF READY-MIX, SPECIFY 5% TO 6% AIR TO SUPPLIER.  
(B) IF JOB MIX, USE BAGS OF AIR-ENTRAINMENT TYPE CEMET.
3. ALL CONCRETE TO BE KEPT WET FOR 4 OR 5 DAYS AFTER REPLACEMENT.
4. RECOMMEND USE OF MESH REINFORCEMENT. 6X6 #10/10 (21 LB. MESH).
5. ALL SUBGRADE TO BE WELL-COMPACTED. RECOMMEND ADDITION OF 2-INCH THICK (MINIMUM) GRANULAR BASE, COMPACTED.
6. PROVIDE BROOM FINISH TO ALL EXPOSED SURFACES. KEEP WORKING OF SURFACES TO ABSOLUTE MINIMUM.
7. PROVIDE A MINIMUM OF 2 INCHES EDGING AROUND ALL EXPOSED SURFACES.

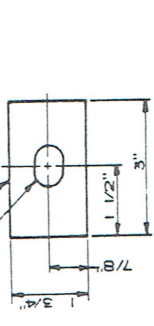
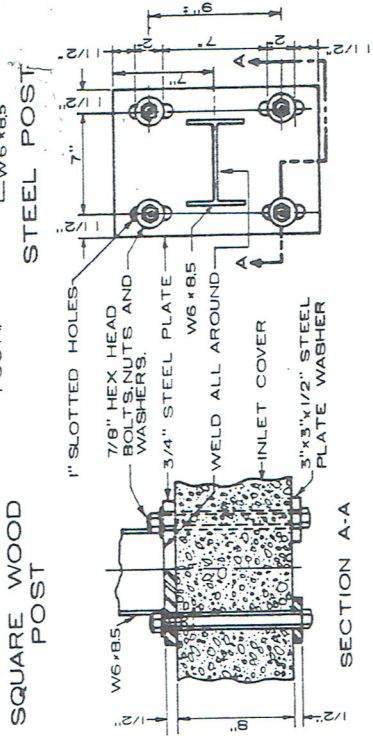
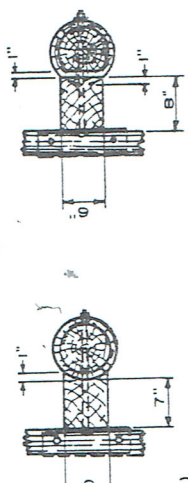
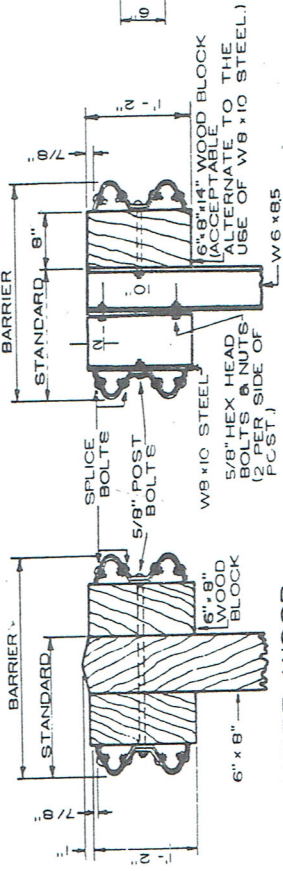
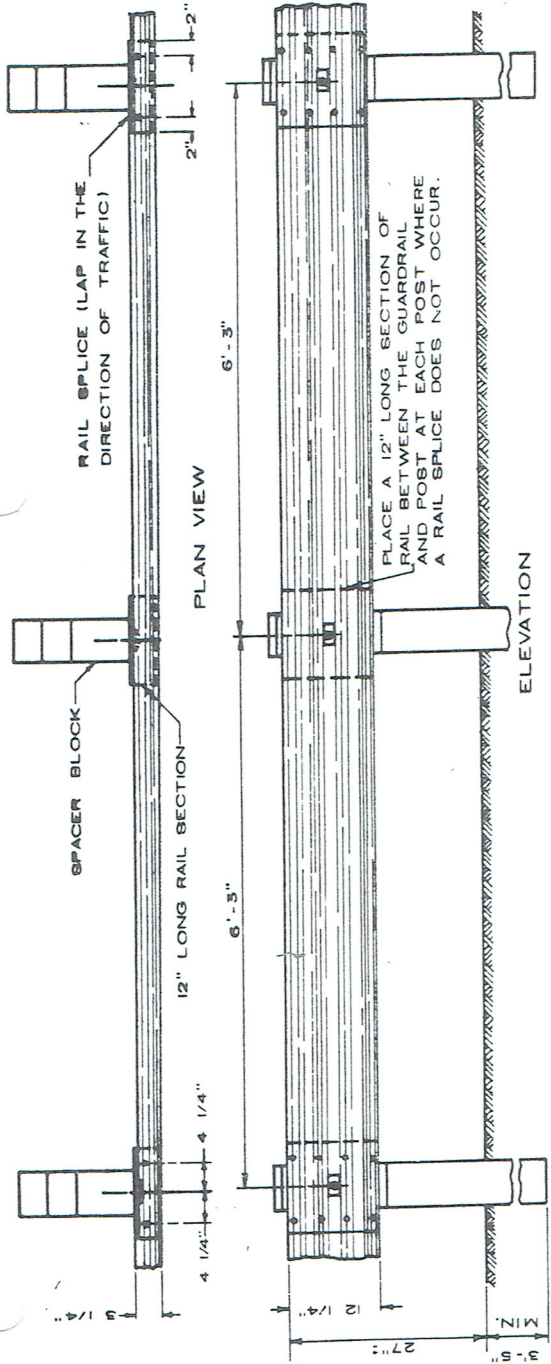


\* SEE TYPICAL ROADWAY SECTIONS FOR STANDARD VALUES.

RESIDENTIAL DRIVEWAY APPROACH

**NOTES**

POSTS MAY BE ROUND (SINGLE RAIL ONLY) OR 6" x 8" SQUARE - SAWED PRESURE - TREATED WOOD OR W6 x 85 GALVANIZED STEEL. THE SAME TYPE POST SHALL BE USED THROUGHOUT THE LENGTH OF PROJECT UNLESS OTHERWISE REQUIRED BY THE PLANS OR PERMITTED BY THE ENGINEER. ROUND POST SHALL BE 8" PLUS OR MINUS 1/8" IN DIAMETER AT THE TOP AND NOT MORE THAN 1" AT THE BUTT WITH UNIFORM TAPER FROM TOP TO BUTT.



NOTE: PLACE ONE RECTANGULAR WASHER BETWEEN BOLT HEAD OR NUT AND THE FACE OF RAIL. ALL OTHER WASHERS ARE STANDARD.

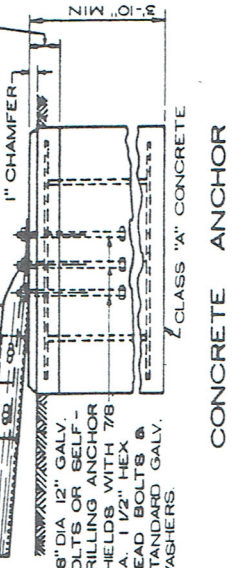
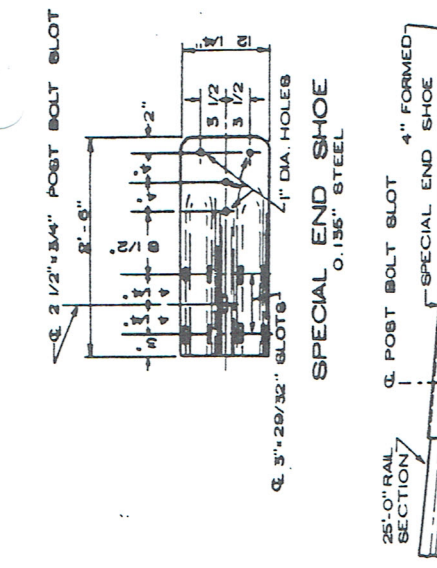
**POST BOLT WASHER**

**METHOD 2**  
NOTE: ALTERNATE METHODS OF PLACING THE SPACER BLOCKS ON THE ROUND POSTS MAY BE SUBMITTED FOR CONSIDERATION AND APPROVAL BY THE ENGINEER.

**INLET MOUNTED POST**

**ROUND WOOD POST**

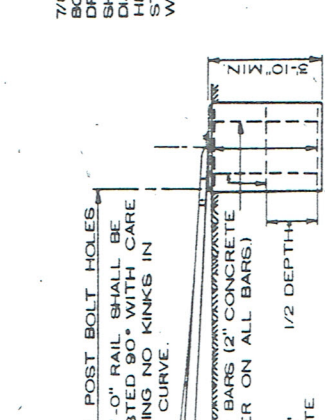
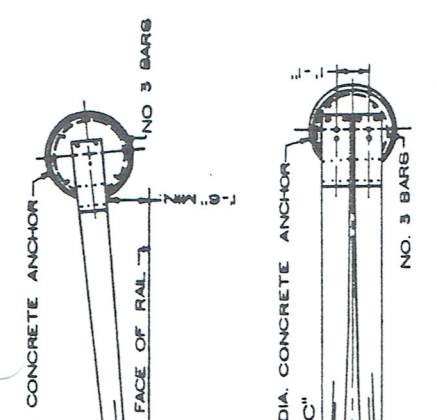
# GUARDRAIL DETAIL



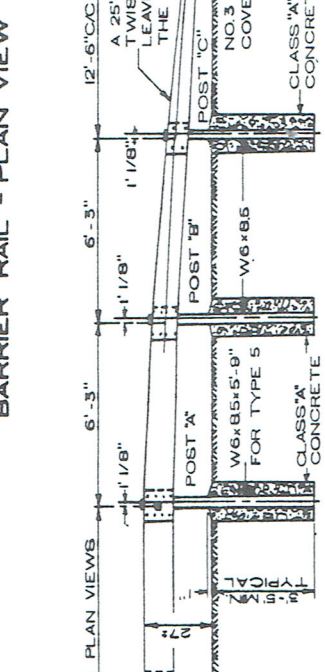
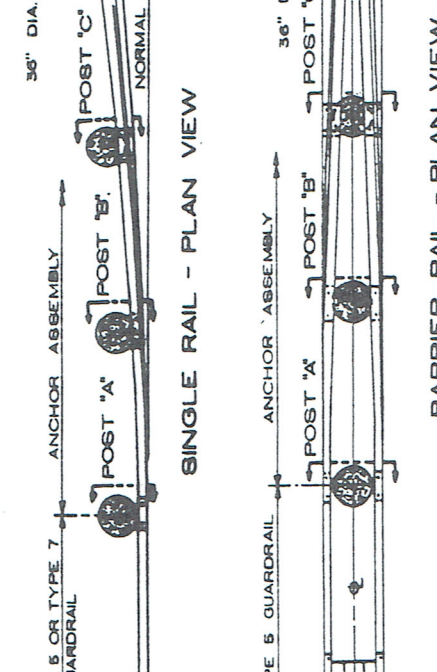
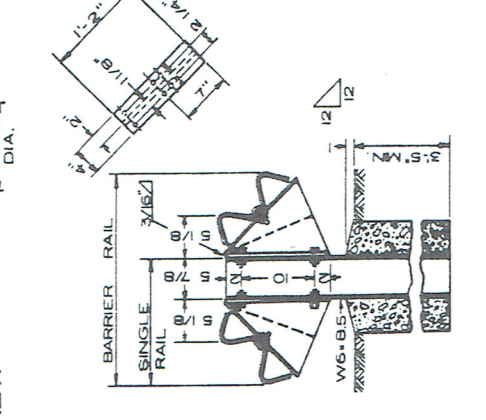
CONCRETE ANCHOR

NOTES

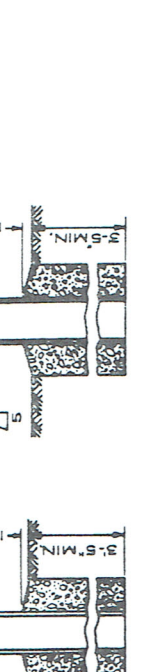
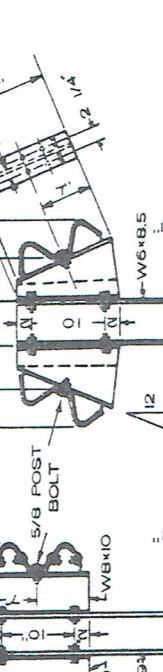
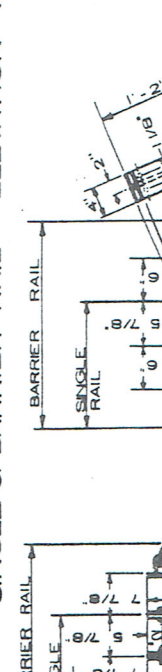
ANCHOR ASSEMBLY SHALL BE USED AT EACH FREE END OF TYPE 5 GUARD OR BARRIER RAIL.  
FORM TOP 4" OF ANCHOR AND SLOPE THE TOP TO CONFORM TO SLOPE OF THE ADJACENT GROUND. THE 36" DIA. ANCHOR MAY BE REPLACED BY A 2.6" SQUARE ANCHOR AT THE CONTRACTOR'S OPTION.  
SPACERS FOR POSTS B AND C SHALL BE MADE OF 3/8" STEEL PLATE OR TWO SECTIONS OF W6x85 OR W8x10 CUT IN THE WEB (SEE DASHED LINE) AND WELDED TOGETHER ON BOTH SIDES.  
ALL STEEL SPACERS AND POSTS MAY BE PROVIDED WITH ADDITIONAL BOLT HOLES SO THAT THESE ITEMS WILL NOT BE REQUIRED TO BE MADE RIGHT ANGLE LEFT HANDED.  
SPACER SHALL BE FASTENED TO THEIR POSTS WITH STANDARD BOLTS AND NUTS WITH STANDARD WASHERS ON BOTH SIDES.  
PLACE ONE RECTANGULAR WASHER BETWEEN POST BOLT HEAD OR NUT AND THE FACE OF RAIL.  
ALL OTHER WASHERS INDICATED ON THIS DRAWING ARE STANDARD GALVANIZED STEEL OF THE APPROPRIATE SIZE.  
CONCRETE: ALL CONCRETE SHALL BE CLASS A. MINIMUM POST ENGAGEMENT SHALL BE 4".



SINGLE & BARRIER RAIL - ELEVATION VIEW

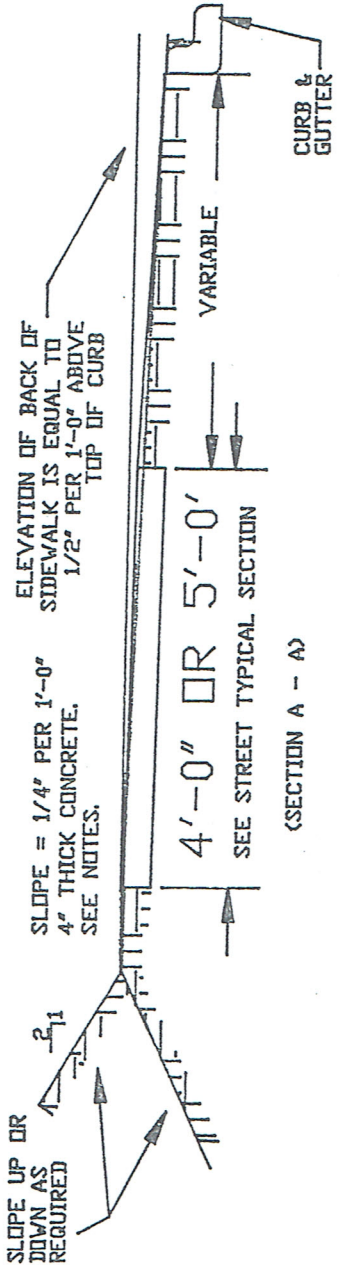


POST A



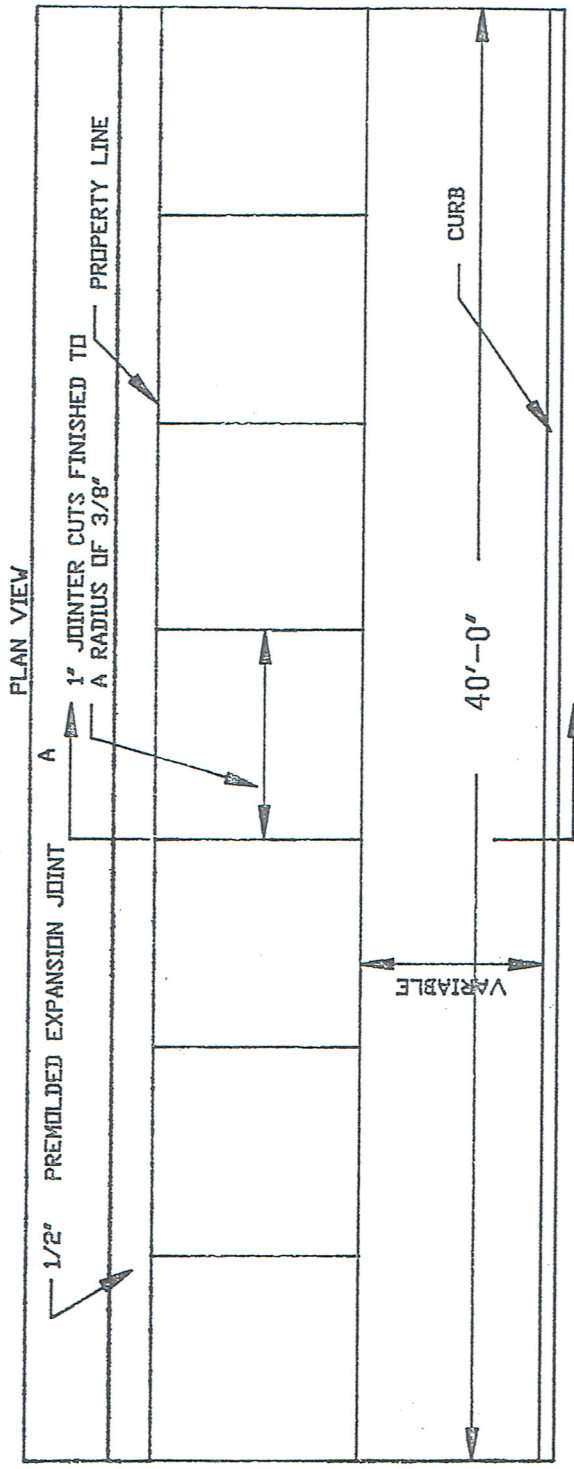
GUARDRAIL ANCHOR ASSEMBLY





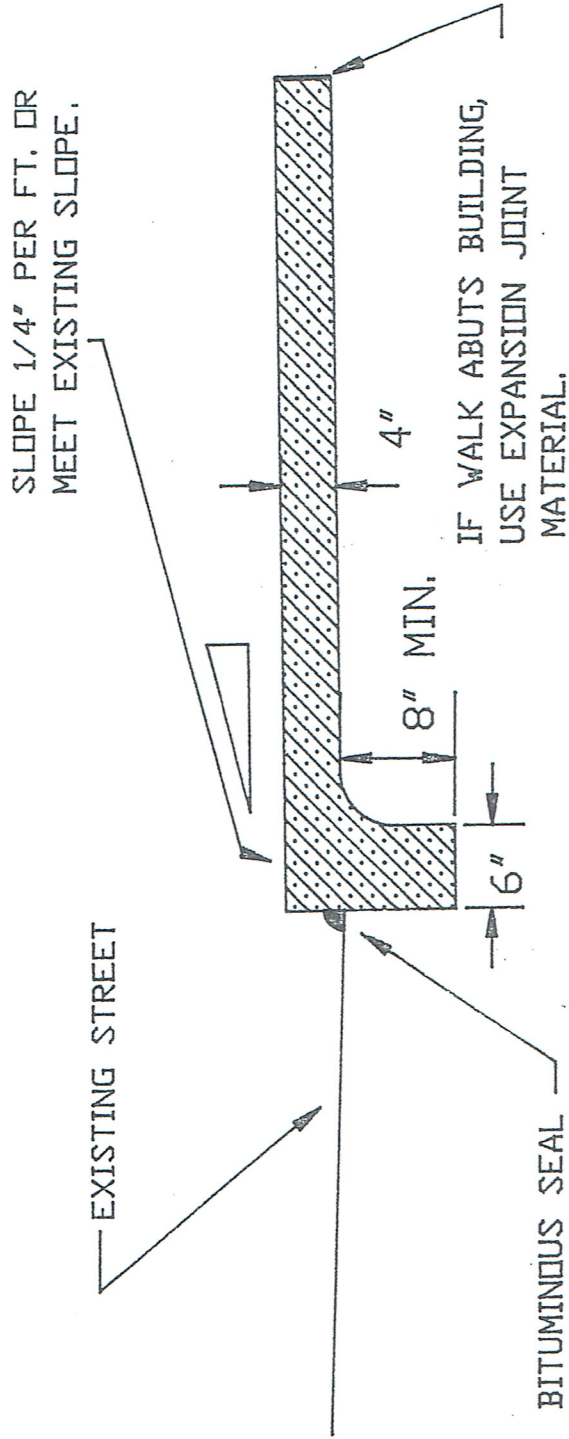
NOTES

1. ALL SIDEWALKS & RAMPS TO BE CONCRETE, 4000 PSI COMPRESSIVE STRENGTH AT 28 DAYS. NO ASPHALT TO BE USED.
2. RESIDENTIAL SIDEWALKS TO BE MINIMUM OF 4' WIDTH. COMMERCIAL AND DOWNTOWN SIDEWALKS TO BE A MINIMUM OF 6' WIDTH.
3. ALL CONCRETE TO HAVE 5% TO 6% AIR ENTRAINMENT, PROVIDED BY,
  - (A) IF READY-MIX, SPECIFY 5% TO 6% AIR TO SUPPLIER
  - (B) IF JOB MIX, USE BAGS OF AIR-ENTRAINMENT TYPE CEMENT
4. ALL CONCRETE TO BE KEPT WED FOR 4 OR 5 DAYS AFTER PLACEMENT.
5. RECOMMEND USE OF MESH REINFORCEMENT, 6X6 = 10/10 (21 LB. MESH).
6. ALL SUBGRADE TO BE WELL-COMPACTED. RECOMMEND ADDITION 4-INCH THICK (MINIMUM) GRANULAR BASE, COMPACTED.
7. PROVIDE BROOM FINISH TO ALL EXPOSED SURFACES. KEEP WORKING OF SURFACES TO ABSOLUTE MINIMUM.
8. PROVIDE A MINIMUM OF 2-INCHES EDGING AROUND ALL EXPOSED SURFACES.



CONCRETE SIDEWALK DETAIL

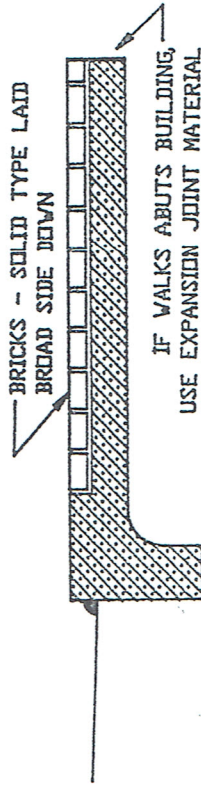
# SIDEWALK SPECIFICATIONS



## NOTES

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8. PROVIDE A MINIMUM OF 2-INCHES EDGING AROUND ALL EXPOSED SURFACES.

SLOPE 1/4" PER FOOT OR  
MEET EXISTING SLOPE



1. BRICKS MUST BE SOLID - PERFORATED BRICK SHALL NOT BE USED.
2. PLAN VIEW: BRICKS MAY BE PLACED IN ARCHITECTURAL PATTERNS AS DESIRED
3. CONCRETE SLAB SHOULD NOT USE EXPANSION JOINTS.
4. ALL DIMENSIONS SUCH AS WIDTH, SLOPE AND DISTANCE FROM CURB SHALL BE TO CITY STANDARDS.
5. DOWNTOWN SIDEWALKS SHALL BE 6' MINIMUM WIDTH.
6. BRICKS MUST BE EVENLY PLACED TO GRADE TO PRESENT A GOOD WALKING SURFACE, AND MORTAR MUST NOT EXTEND HIGHER THAN WALKING SURFACE.

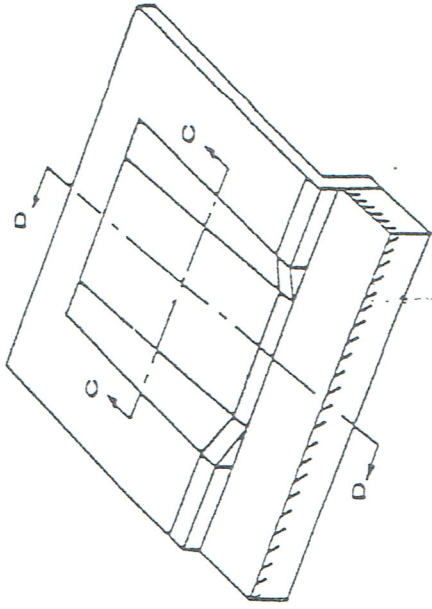
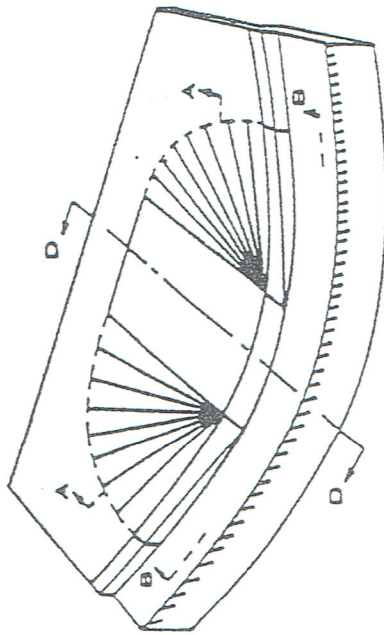
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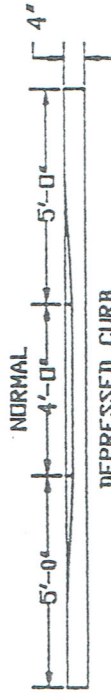
#### SIDEWALK SPECIFICATIONS

(OPTIONAL BRICK)  
DOWNTOWN AREAS

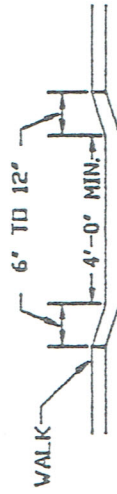
# CURB RAMPS



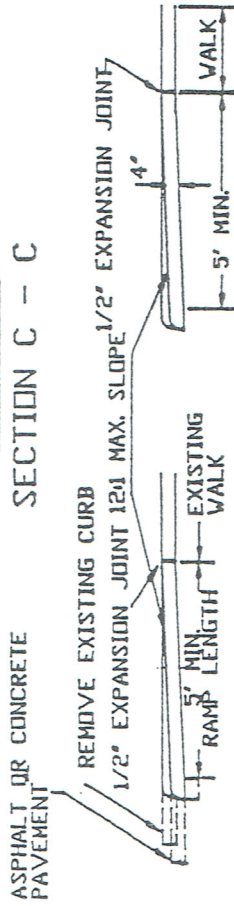
SECTION A - A



SECTION B - B



SECTION C - C



SURFACE TEXTURE SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES AND SHALL BE ROUGHER THAN ADJACENT WALK.

JOINTS SHALL BE PROVIDED IN THE CURB RAMP AS EXTENSIONS OF WALK JOINTS AND CONSISTENT WITH REQUIREMENTS FOR NEW CONCRETE WALK.

A 1/2" EXPANSION JOINT FILLER SHOULD BE PROVIDED AROUND THE EDGE OF RAMPS BUILT IN EXISTING CONCRETE WALK.

ANY COMBINATION OF SIDE SLOPES ON OPPOSITE SIDES OF A RAMP MAY BE USED TO BEST FIT THE SITE CONDITIONS .

THE MINIMUM RAMP LENGTH IS 5' FROM BACK OF A 6" CURB AND MAY BE INCREASED WHERE FEASIBLE TO OBTAIN A FLATTER RAMP LSLOPE OR TO BETTER BLEND WITH THE WALK CONFIGURATION.

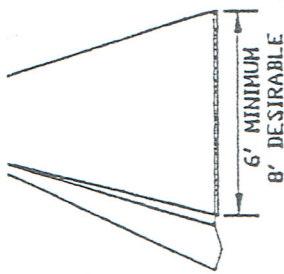
WALK THICKNESS IN THE RAMP SLOPES SHALL BE 4" MINIMUM OR THICKER AS NECESSARY TOP MATCH ADJACENT WALK THICKNESS.

**BIKEWAY CLASSIFICATION**

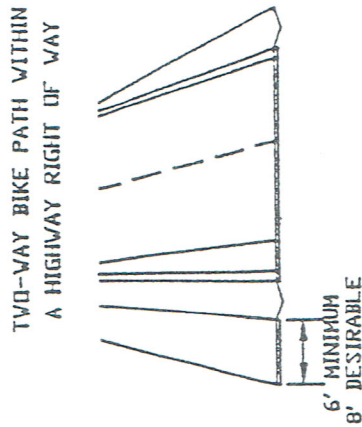
**CLASS I - BIKE PATH -** A COMPLETELY SEPARATED RIGHT-OF-WAY DESIGNATED FOR THE EXCLUSIVE USE OF BICYCLES. CROSS-FLOWS BY PEDESTRIANS AND MOTORISTS ARE MINIMIZED.

**CLASS II - BIKE LANE -** A RESTRICTED RIGHT-OF-WAY DESIGNATED FOR THE EXCLUSIVE USE OF BICYCLES, THROUGH TRAVEL BY MOTOR VEHICLES OR PEDESTRIANS IS NOT ALLOWED. HOWEVER, VEHICLE PARKING MAY BE ALLOWED. CROSS FLOWS BY MOTORISTS, FOR EXAMPLE, TO GAIN ACCESS TO DRIVEWAYS OR PARKING FACILITIES, IS ALLOWED. PEDESTRIANS CROSS FLOWS, FOR EXAMPLE, TO GAIN ACCESS TO PARKED VEHICLES OR BUS STOPS OR ASSOCIATED LAND USE, IS ALLOWED.

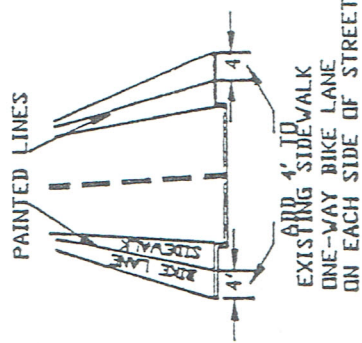
**CLASS III - BIKE ROUTE -** A SHARED RIGHT-OF-WAY DESIGNATED AS SUCH BY SIGNS PLACED ON VERTICAL POSTS OR STENCILED ON THE PAVEMENT. ANY BIKEWAY WHICH SHARES IT'S THROUGH-TRAFFIC RIGHT-OF-WAY WITH EITHER MOVING MOTOR VEHICLES OR PEDESTRIANS IS CONSIDERED A CLASS III BIKEWAY.



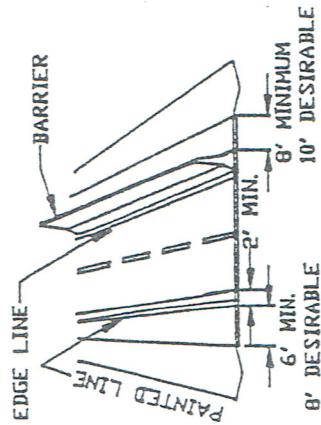
TWO-WAY BIKE PATH INDEPENDENT OF OTHER FACILITIES



NOTE: EITHER PAINTED LINES OR PHYSICAL BARRIERS MAY BE USED TO SEPARATE LANES.



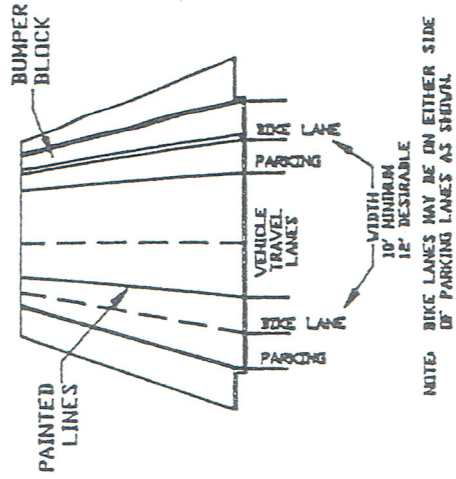
EXISTING SIDEWALK  
ONE-WAY BIKE LANE  
ON EACH SIDE OF STREET



NOTES:

WHERE BIKEWAY IS ON EXISTING PAVEMENT THE EXISTING PAVEMENT THICKNESS IS SUFFICIENT.  
FOR INDEPENDENT BIKE PATHS SEE STANDARD DRAWINGS FOR TYPICAL CROSS SECTIONS.

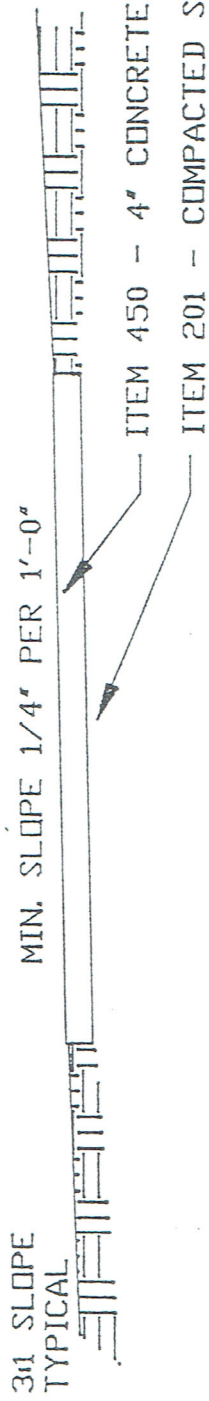
MIN. OVERHEAD CLEARANCE IS 8'.



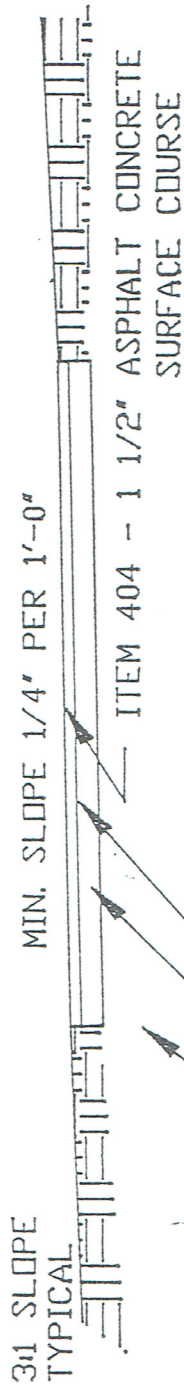
NOTE: BIKE LANES MAY BE ON EITHER SIDE OF PARKING LANES AS SHOWN.

**DESIGN DATA FOR BIKEWAYS**

# TYPICAL CROSS SECTIONS-DEPENDENT BIKEWAYS

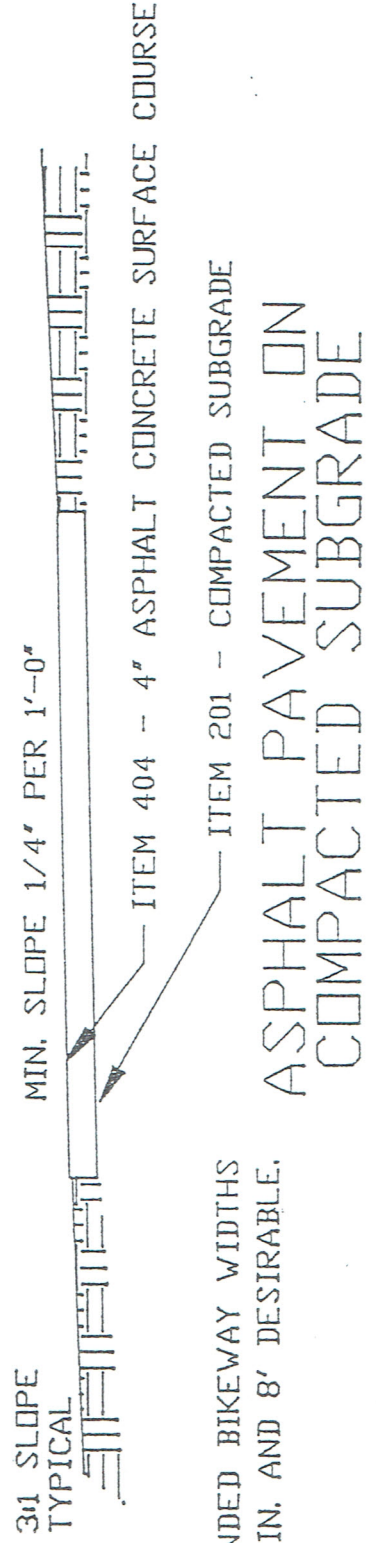


## CONCRETE PAVEMENT



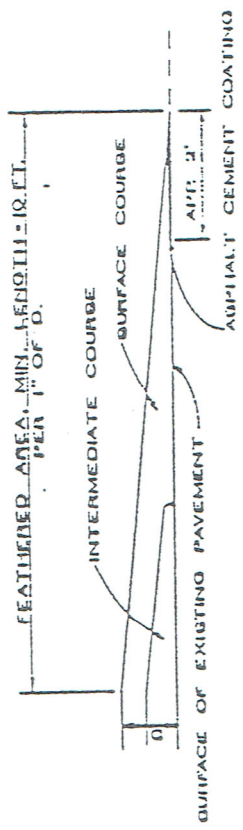
NOTE: WHERE BIKEWAY IS ON EXISTING PAVEMENT, THE EXISTING PAVEMENT THICKNESS IS SUFFICIENT.

## ASPHALT PAVEMENT WITH BITUMINOUS AGGREGATE BASE

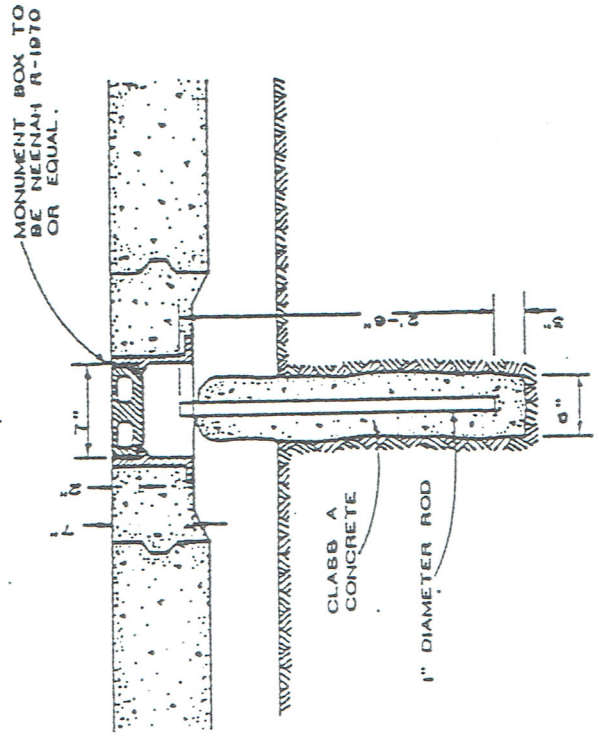
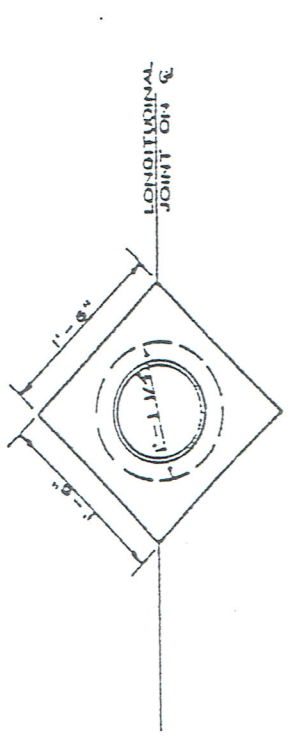


RECOMMENDED BIKEWAY WIDTHS ARE 6' MIN. AND 8' DESIRABLE.

## ASPHALT PAVEMENT ON COMPACTED SUBGRADE



FEATHERING DETAIL



SURVEY MONUMENT DETAIL

MISCELLANEOUS ROADWAY DETAILS