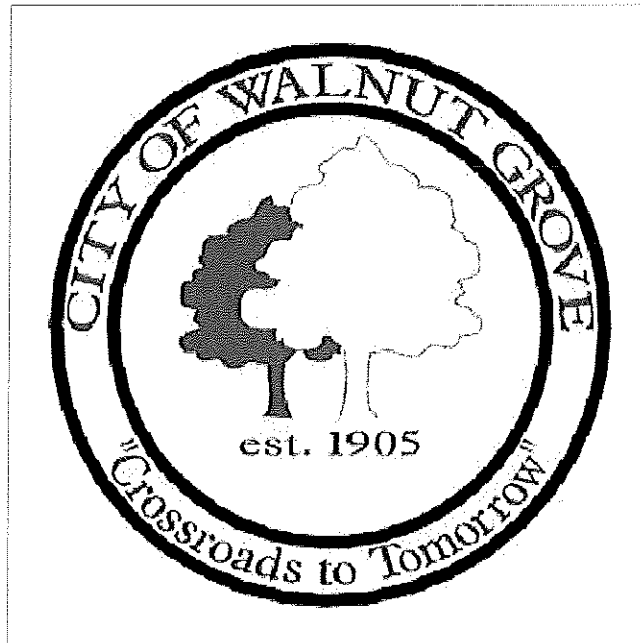
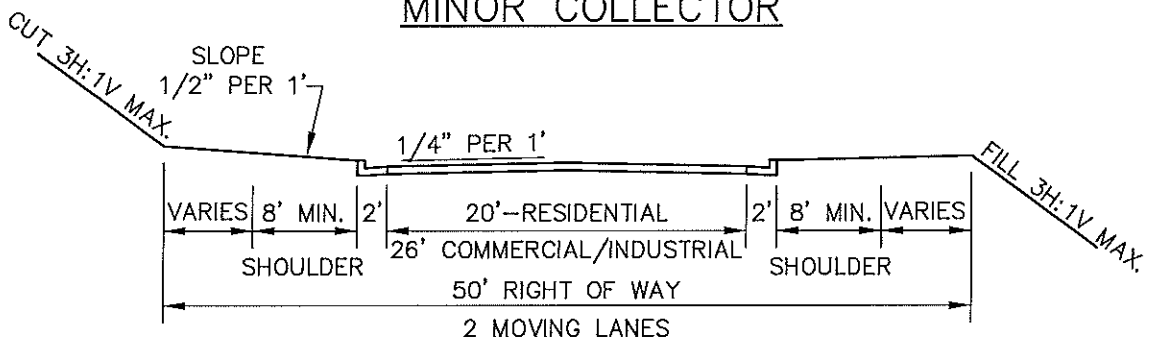
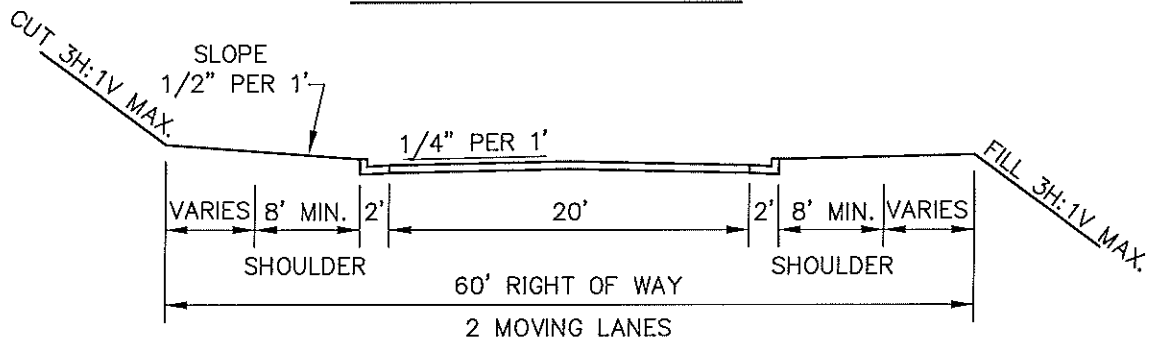
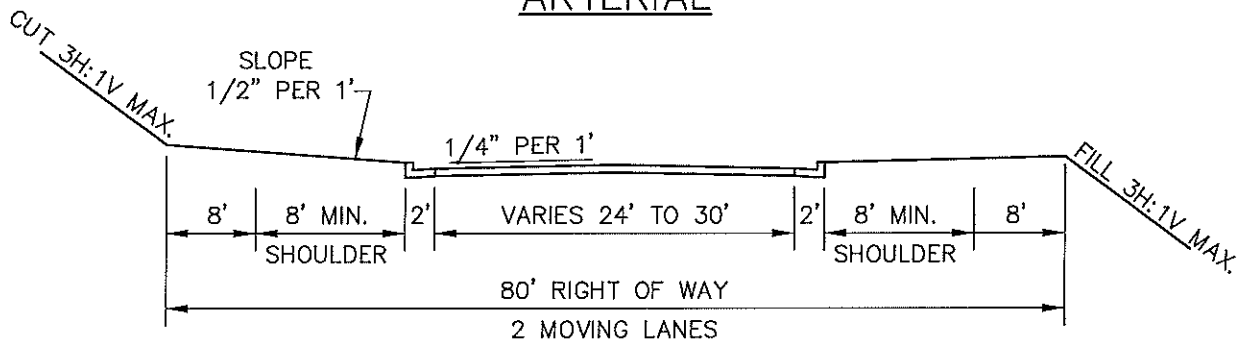
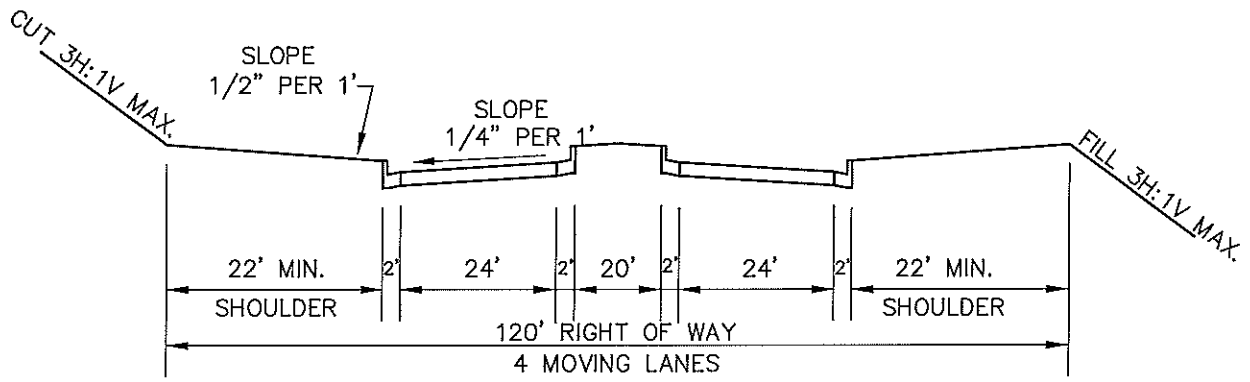


DIVISION 3
STREET IMPROVEMENTS



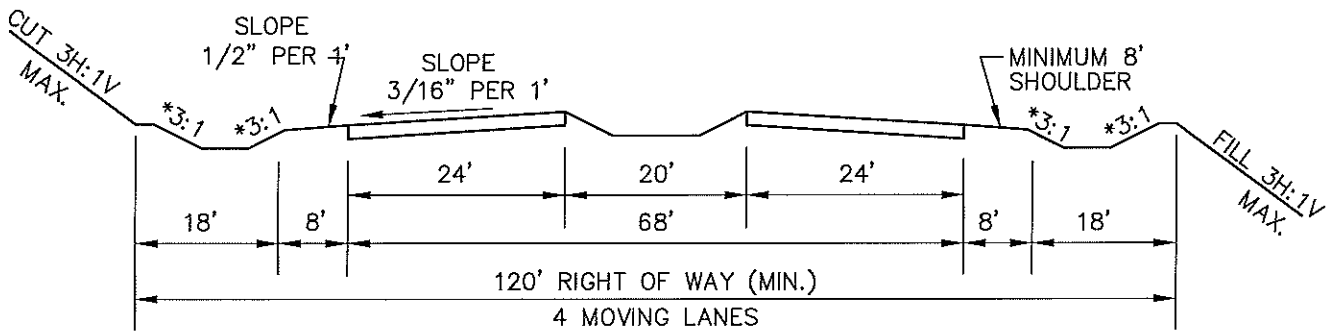


CITY OF
WALNUT GROVE

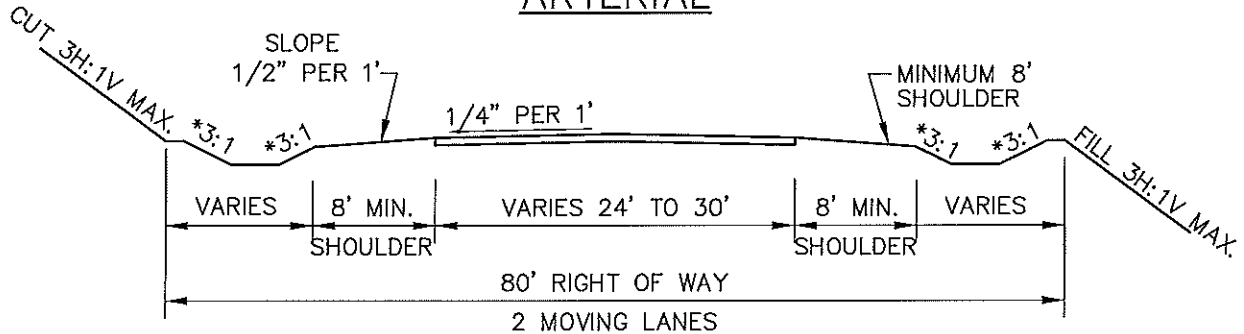
STANDARD DESIGN &
CONSTRUCTION DETAILS

TYPICAL STREET
CROSS SECTIONS - URBAN

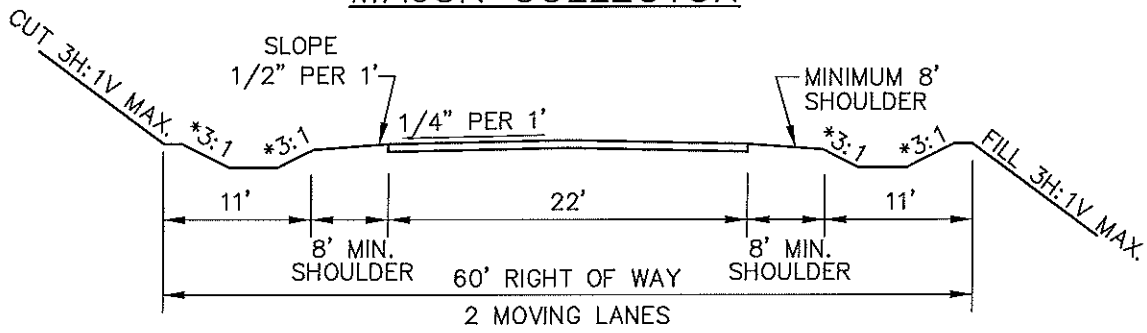
3.01



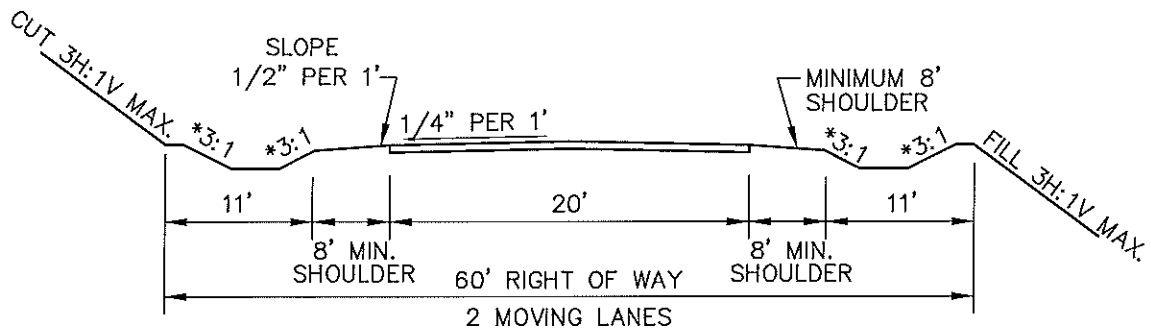
ARTERIAL



MAJOR COLLECTOR

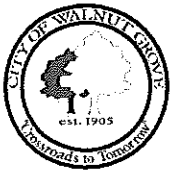


MINOR COLLECTOR



LOCAL STREET

* STEEPER SLOPE TO BE REVIEWED AND APPROVED BY CITY ENGINEER



CITY OF
WALNUT GROVE

STANDARD DESIGN &
CONSTRUCTION DETAILS

TYPICAL STREET
CROSS SECTIONS - RURAL

3.02

MINIMUM STREET DESIGN STANDARDS:

	ARTERIAL ¹	MAJOR COLLECTOR	MINOR COLLECTOR	LOCAL STREET
AVERAGE DAILY TRIPS	10,000 OR MORE	2,501 TO 9,999	251 TO 2,500	250 OR LESS
MINIMUM RIGHT-OF-WAY, IN FEET	100	64/80 ⁶	50 ² 60 ³	50 ² 60 ³
MINIMUM PAVEMENT WIDTH, IN FEET ²	48	24/30	20	20
MAXIMUM GRADE	6%	8%	8%	8%
MINIMUM STOPPING SIGHT DISTANCE, IN FEET	550	450	250	200
DESIGN SPEED, IN MPH	55	45	35	30
MINIMUM CENTERLINE RADIUS, IN FEET	885	500	420	300
MINIMUM LENGTH OF TANGENT, BETWEEN REVERSE CURVES, IN FEET	300	200	100	100
PAVEMENT RADIUS AT INTERSECTIONS, IN FEET	30	30	25	10
MINIMUM FINISHED GRADE	1%	1%	1%	1%

FOOTNOTES:

- 1 GEOMETRICAL DESIGN STANDARDS OF THE GEORGIA DEPARTMENT OF TRANSPORTATION SHALL REPRESENT MINIMUM REQUIREMENTS FOR ARTERIAL STREET DESIGN AND CONSTRUCTION. ALL OTHER STREET CLASSIFICATIONS SHALL ADHERE TO CURRENT AASHTO STANDARDS RELATING TO DESIGN SPEED, STOPPING SIGHT DISTANCE, VERTICAL AND HORIZONTAL CONTROLS.
- 2 ALL CURB AND GUTTER STREETS = 50' MINIMUM.
- 3 ALL UN-CURBED STREETS = 60' OR MORE.
- 4 PAVEMENT WIDTH DOES NOT INCLUDE CURB AND GUTTER.
- 5 SEE SECTION 3.3.6 FOR "PRIVATE ACCESS DRIVES".
- 6 VARIES 64' TO 80' BASED ON MORGAN COUNTY.

REQUIRED BASE AND PAVEMENT THICKNESSES:

	ARTERIAL	MAJOR COLLECTOR	MINOR COLLECTOR	LOCAL STREET
GRADED AGGREGATE BASE	8"	8"	6"	6"
BLACK BASE	4"	2"		
BINDER	3" TYPE B	3" TYPE B	3" TYPE B	2" TYPE B
SURFACE	2" TYPE F	2" TYPE F	1-1/2" TYPE E	1-1/2" TYPE E

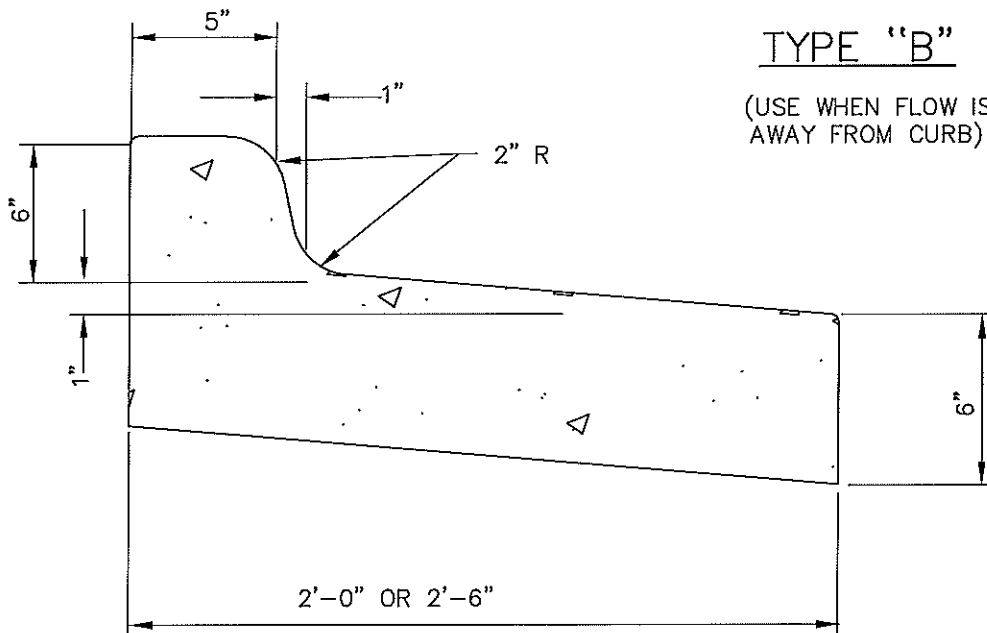
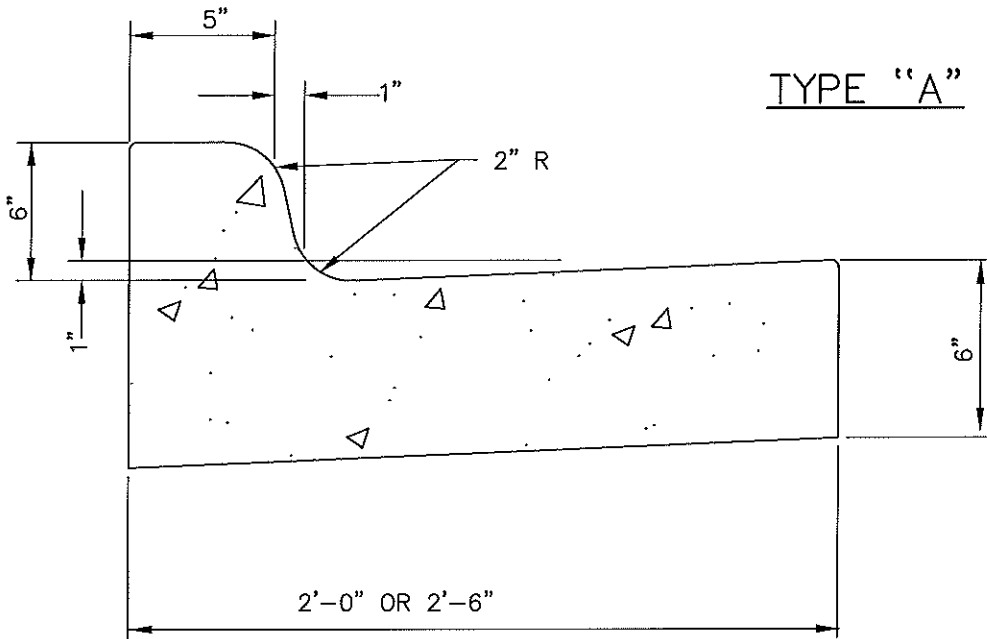


CITY OF
WALNUT GROVE

STANDARD DESIGN &
CONSTRUCTION DETAILS

STREET DESIGN
PARAMETERS

3.03



STANDARD

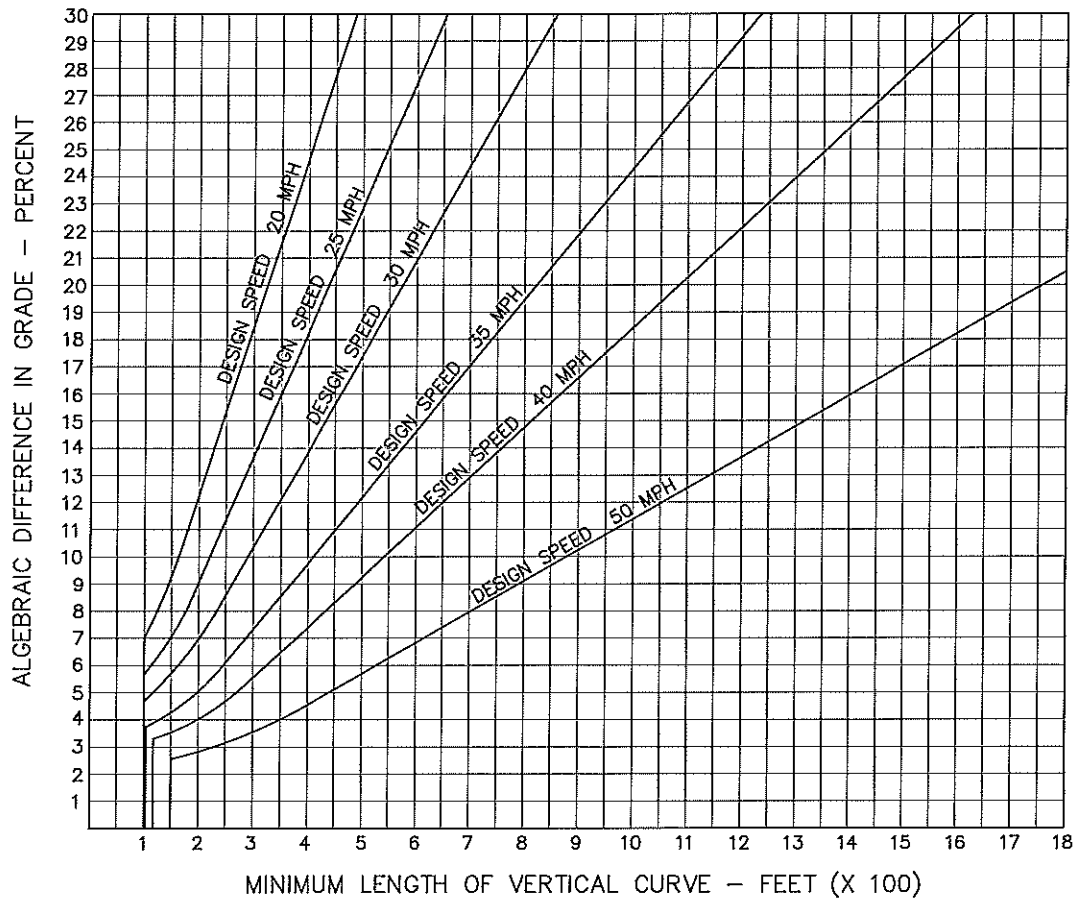


CITY OF
WALNUT GROVE

STANDARD DESIGN &
CONSTRUCTION DETAILS

CURB AND GUTTER

3.04



BASIC FORMULAS FOR LENGTH OF A PARABOLIC CURVE IN TERMS OF ALGEBRAIC DIFFERENCE GRADE AND SIGHT DISTANCE ARE;

WHEN S LESS THAN L

$$L = \frac{AS^2}{1398}$$

WHEN S GREATER THAN L

$$L = \frac{25-1398}{A}$$

WHERE L = LENGTH OF VERTICAL CURVE, FT.
 S = SIGHT DISTANCE, FT.
 A = ALGEBRAIC DIFFERENCE IN GRADE, %

CONSTANT FACTORS USED ARE:

- HEIGHT OF EYE : 3.75 FT.
- HEIGHT OF OBJECT: 6 IN.
- 20 MPH DESIGN= 150 FT. SIGHT DISTANCE
- 25 MPH DESIGN= 175 FT. SIGHT DISTANCE
- 30 MPH DESIGN= 200 FT. SIGHT DISTANCE
- 35 MPH DESIGN= 240 FT. SIGHT DISTANCE
- 40 MPH DESIGN= 275 FT. SIGHT DISTANCE
- 50 MPH DESIGN= 350 FT. SIGHT DISTANCE

MINIMUM ALLOWABLE VERTICAL CURVE = 3V
 BUT NOT LESS THAN 100 FT.

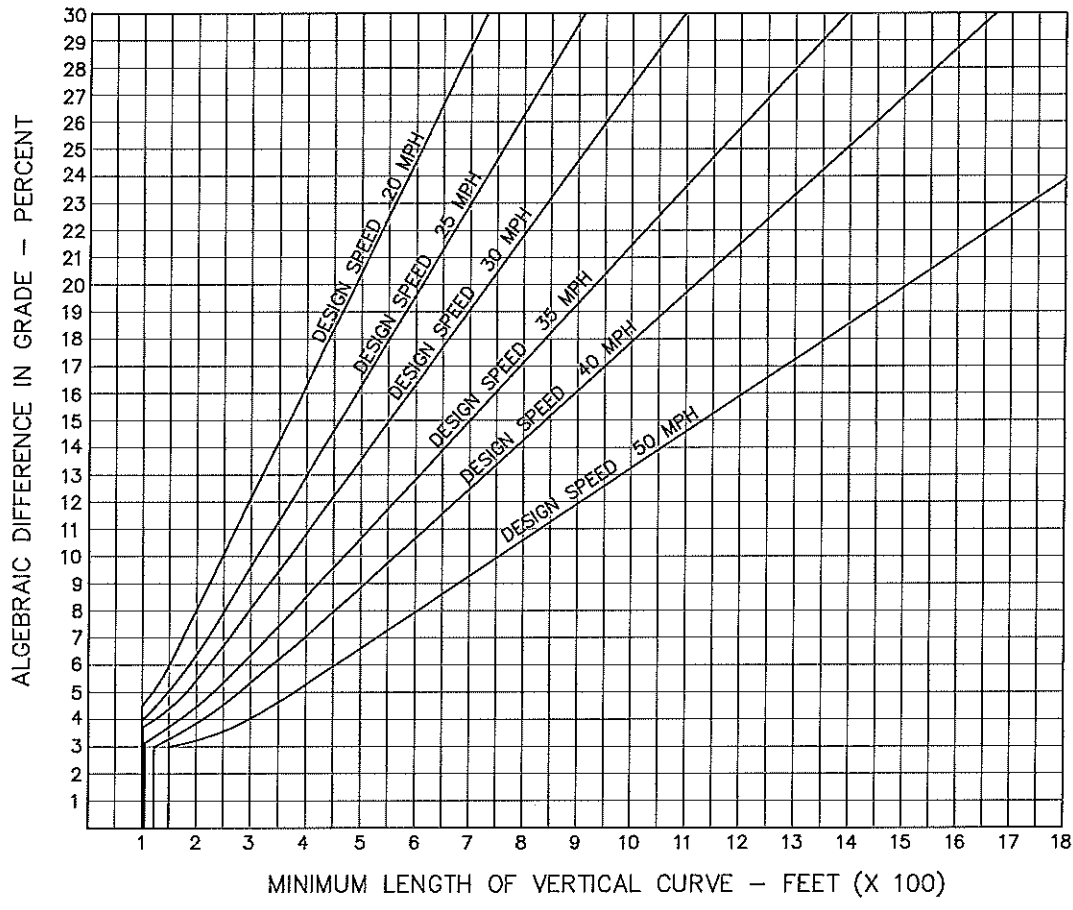


CITY OF WALNUT GROVE

STANDARD DESIGN & CONSTRUCTION DETAILS

MINIMUM LENGTH OF CREST VERTICAL CURVE

3.05



BASIC FORMULAS FOR LENGTH OF A PARABOLIC CURVE IN TERMS OF ALGEBRAIC DIFFERENCE IN GRADE AND SIGHT DISTANCE ARE;

WHEN S LESS THAN L

$$L = \frac{AS^2}{400 + 3.5 S}$$

WHEN S GREATER THAN L

$$L = \frac{2S - 400 + 3.5S}{A}$$

WHERE L = LENGTH OF VERTICAL CURVE, FT.
 S = SIGHT DISTANCE, FT.
 A = ALGEBRAIC DIFFERENCE IN GRADE, %

CONSTANT FACTORS USED ARE:

HEIGHT OF EYE : 4.5 FT.
 HEIGHT OF OBJECT: 4 IN.
 20 MPH DESIGN= 150 FT. SIGHT DISTANCE
 25 MPH DESIGN= 175 FT. SIGHT DISTANCE
 30 MPH DESIGN= 200 FT. SIGHT DISTANCE
 35 MPH DESIGN= 240 FT. SIGHT DISTANCE
 40 MPH DESIGN= 275 FT. SIGHT DISTANCE
 50 MPH DESIGN= 350 FT. SIGHT DISTANCE

MINIMUM ALLOWABLE VERTICAL CURVE = 3V
 BUT NOT LESS THAN 100 FT.

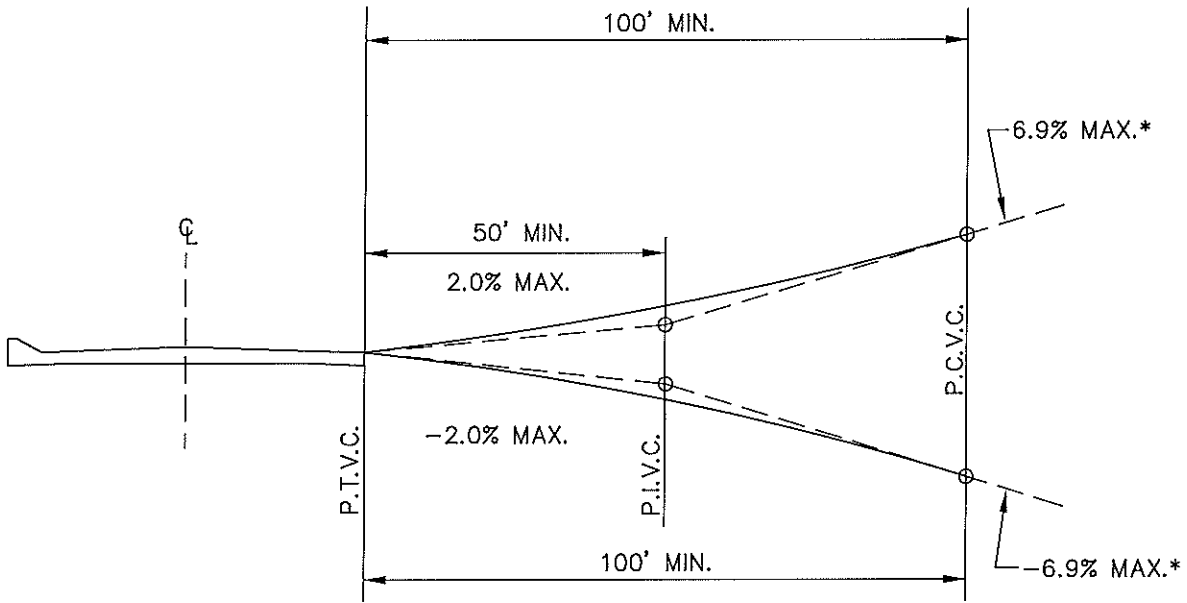


CITY OF
 WALNUT GROVE

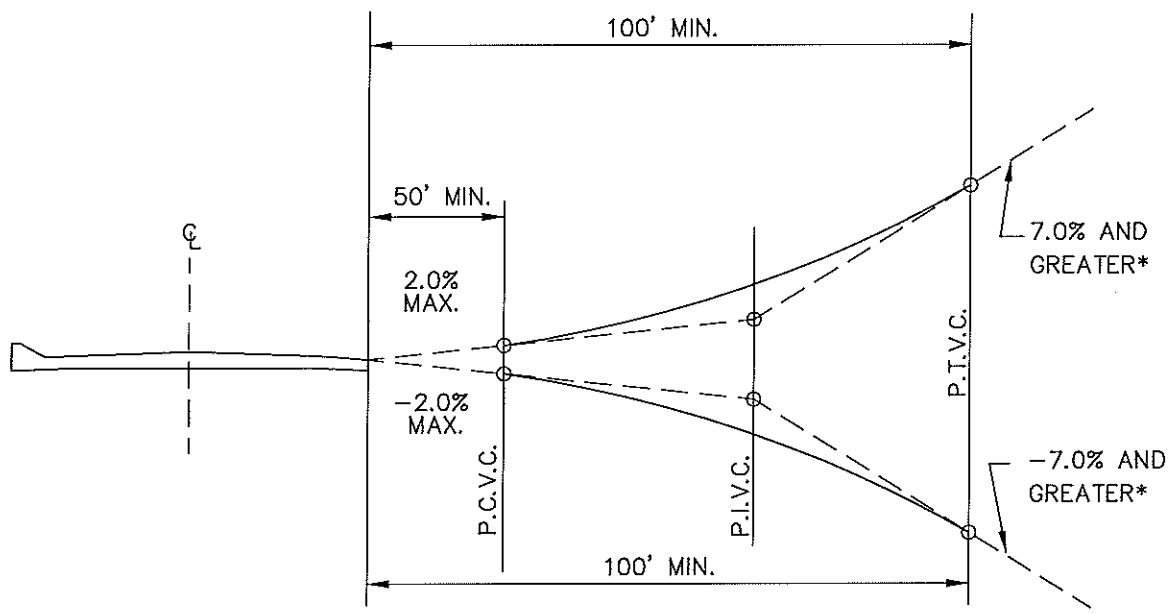
STANDARD DESIGN &
 CONSTRUCTION DETAILS

MINIMUM LENGTH OF SAG
 VERTICAL CURVE

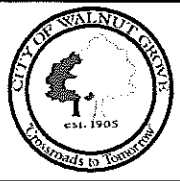
3.06



LANDING REQUIREMENTS FOR GRADES 7.0% OR LESS



LANDING REQUIREMENTS FOR GRADES 7.0% OR LARGER

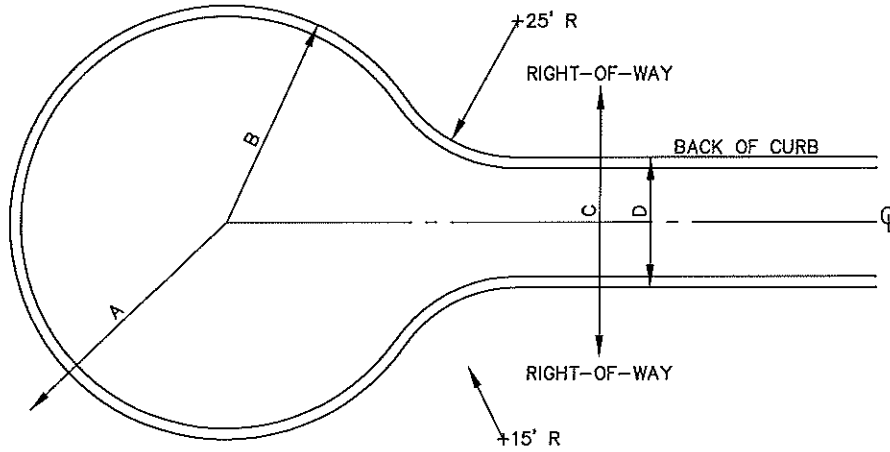


CITY OF
WALNUT GROVE

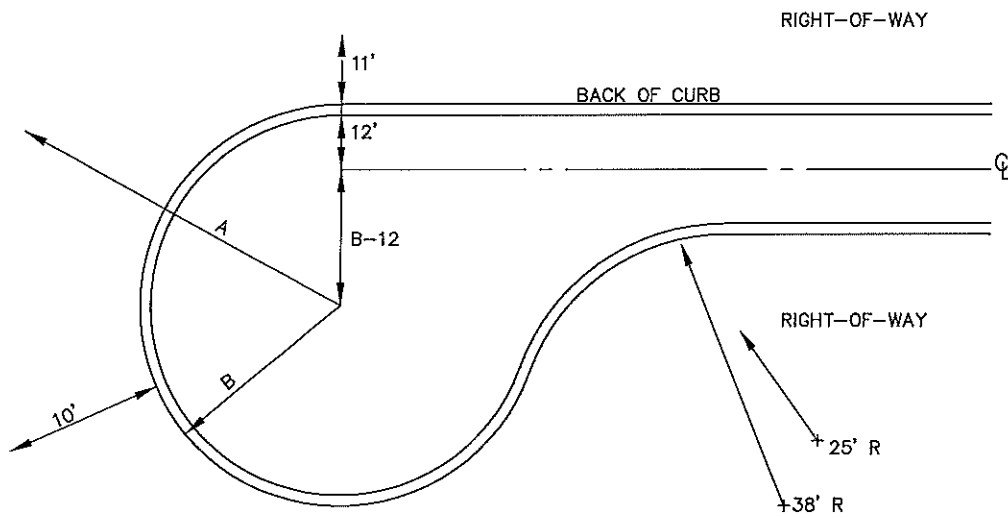
STANDARD DESIGN &
CONSTRUCTION DETAILS

LANDING REQUIREMENTS FOR
LOCAL RESIDENTIAL STREETS

3.07



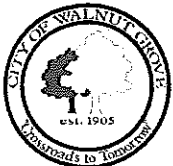
CENTERED



NOTE:
LEFT HAND OFFSET SHOWN
RIGHT HAND OFFSET OPPOSITE

OFFSET

MINIMUM WIDTHS/RADII	A	B	C	D
LOCAL RURAL STREETS	60'	40'	60'	20'
LOCAL URBAN STREETS	60'	45'	50'	24'
COMMERCIAL/INDUSTRIAL STREETS	65'	50'	60'	30'

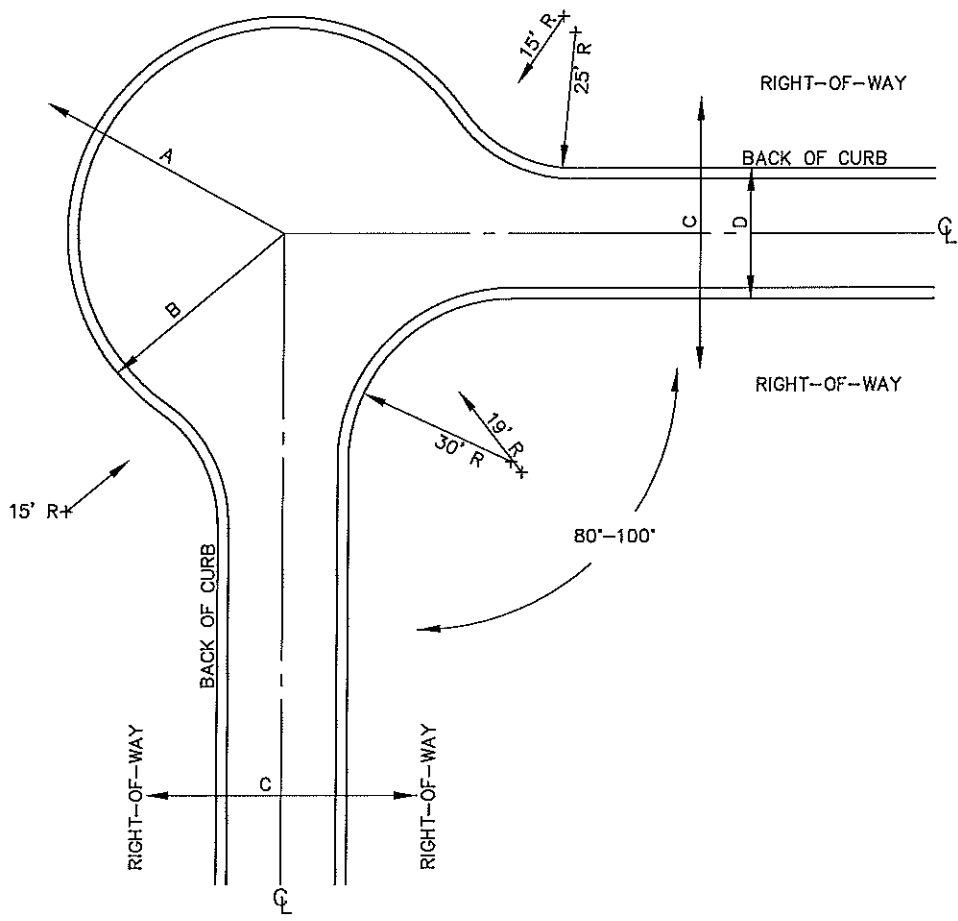


CITY OF
WALNUT GROVE

STANDARD DESIGN &
CONSTRUCTION DETAILS

STANDARD
CUL-DE-SACS

3.08



EYEBROW
LOCAL STREETS ONLY

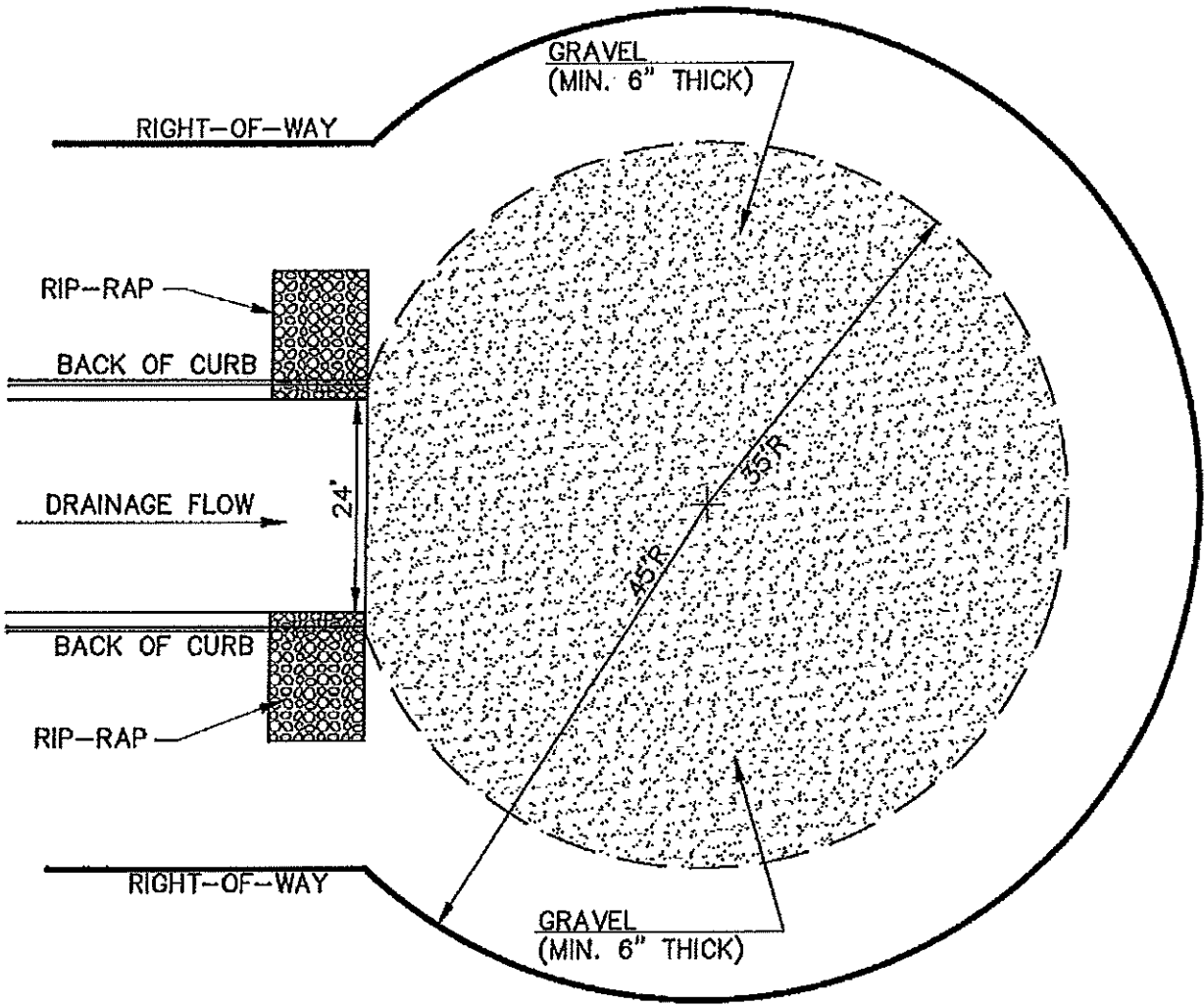


CITY OF
WALNUT GROVE

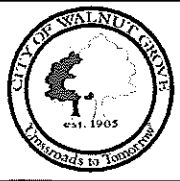
STANDARD DESIGN &
CONSTRUCTION DETAILS

STANDARD EYEBROW
CUL-DE-SAC

3.09



PLAN



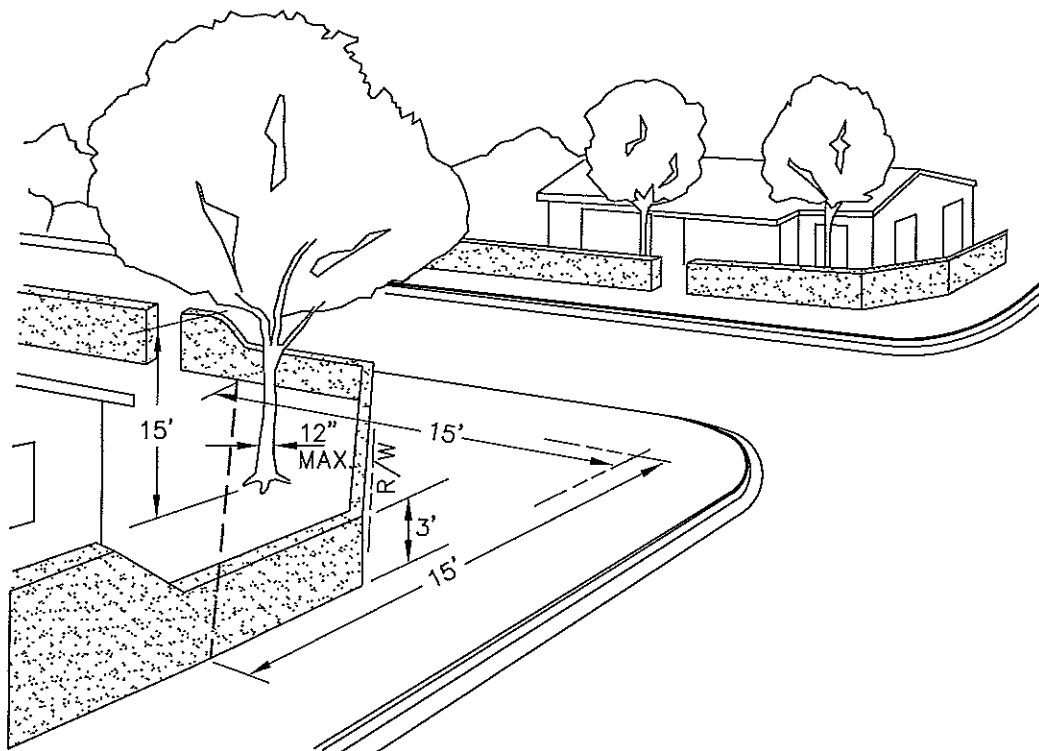
CITY OF
WALNUT GROVE

STANDARD DESIGN &
CONSTRUCTION DETAILS

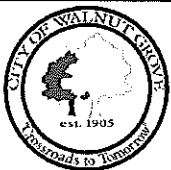
TEMPORARY VEHICULAR
TURNAROUND

3.10

ON A CORNER LOT THERE SHALL BE NO FENCE OR WALL OR HEDGE HIGHER THAN 3 FEET, NOR ANY OBSTRUCTION TO VISION OTHER THAN A POST OR COLUMN OR TREE NOT EXCEEDING ONE FOOT IN GREATEST CROSS-SECTIONAL DIMENSION BETWEEN A HEIGHT OF 3 FEET AND A HEIGHT OF 15 FEET ABOVE THE ESTABLISHED GRADE OF EITHER STREET WITHIN AN AREA FORMED BY THE LOT LINES ON THE STREET SIDES OF SUCH LOT AND A LINE JOINING THE POINTS ON SUCH LOT LINES LOCATED AT A DISTANCE OF 15 FEET FROM THE POINT OF THEIR INTERSECTION.



NOTE: MINIMUM INTERSECTION SIGHT DISTANCE REQUIREMENTS SHALL BE MET REGARDLESS OF BLOCK OUT ZONE.

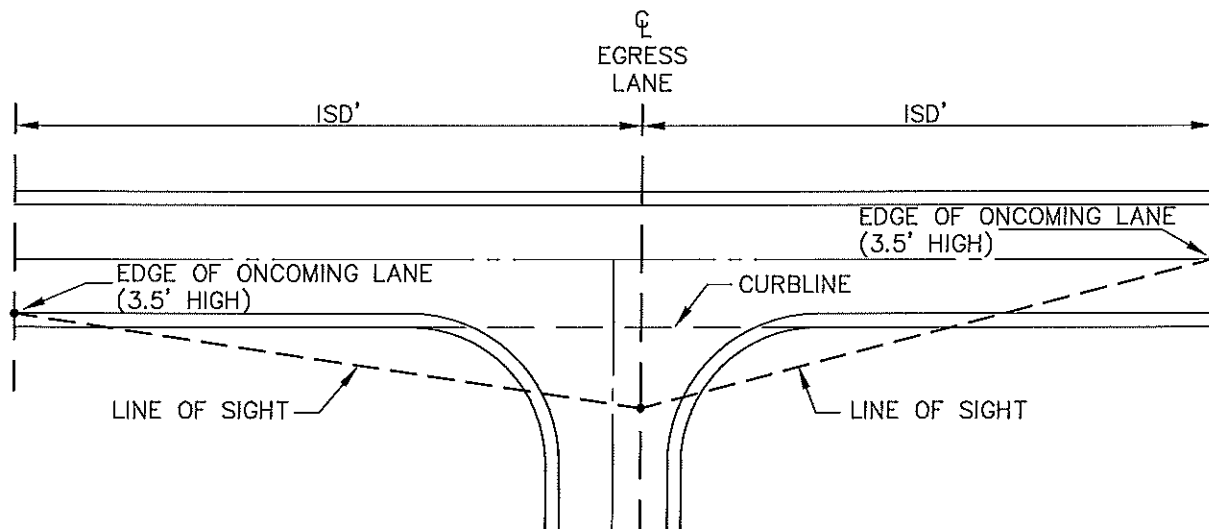


CITY OF
WALNUT GROVE

STANDARD DESIGN &
CONSTRUCTION DETAILS

OBSTRUCTING VISIBILITY
AT INTERSECTIONS

3.11



INTERSECTION SIGHT DISTANCE SHALL BE MEASURED FROM A POINT OF BEGINNING ESTABLISHED 10 FEET BEHIND THE BACK OF CURBLINE ON THE CENTERLINE OF THE EGRESS LANE, AT A HEIGHT OF 3.5 FEET ABOVE FINISH GRADE ELEVATION. THE LINE OF SIGHT IS THEN EXTENDED THE MINIMUM REQUIRED DISTANCE TO EITHER SIDE OF THE ABUTTING STREET ALONG THOROUGHFARE TO THE EDGE OF THE ONCOMING TRAFFIC LANE (LANE OF THREAT), TERMINATING AT A POINT 3.5 FEET ABOVE FINISH GRADE ELEVATION. MAINTAIN 0.5 FEET OF CLEARANCE FROM LINE OF SIGHT AND OBSTRUCTION.

STREET TYPE (THOROUGHFARE)	ISD - SIGHT DISTANCE (EACH WAY)
ARTERIAL	550.0'
MAJOR COLLECTOR	450.0'
MINOR COLLECTOR	350.0'
LOCAL	300.0'

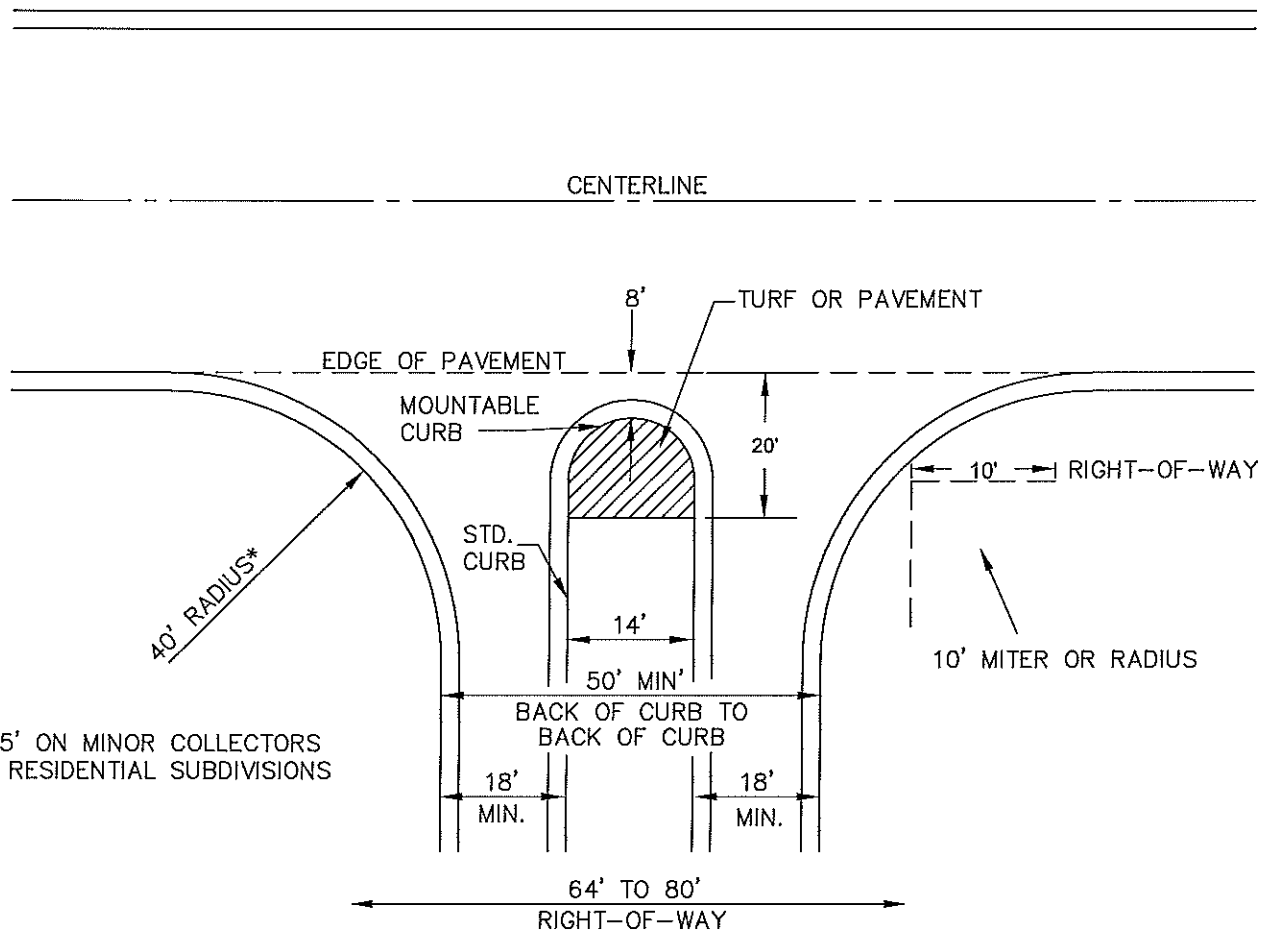


CITY OF
WALNUT GROVE

STANDARD DESIGN &
CONSTRUCTION DETAILS

INTERSECTION SIGHT
DISTANCE

3.12

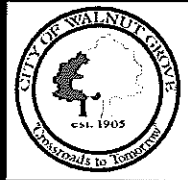


*25' ON MINOR COLLECTORS IN RESIDENTIAL SUBDIVISIONS

NOTE: NO MEDIAN WITH 60' R/W.

NOTES:

1. INSIDE OF ISLANDS ARE TO BE BACKFILLED WITH PORTLAND CEMENT CONCRETE, OR GRASSED, OR PLANTED WITH VEGETATION NOT EXCEEDING TWENTY-FOUR INCHES IN HEIGHT.
2. DEVELOPER TO MAINTAIN GRASSED OR PLANTED ISLAND
3. LARGER RADII FOR RIGHT-OF-WAY OR ROADWAY CONNECTIONS MAY BE REQUIRED FOR STREETS INTERSECTING AT ANGLES LESS THAN 90 DEGREES.
4. ISLANDS AT INTERSECTIONS ARE THE OPTION OF THE DEVELOPER, EXCEPT FOR GEORGIA D.O.T. CONTROLLED ROUTS.



**CITY OF
WALNUT GROVE**

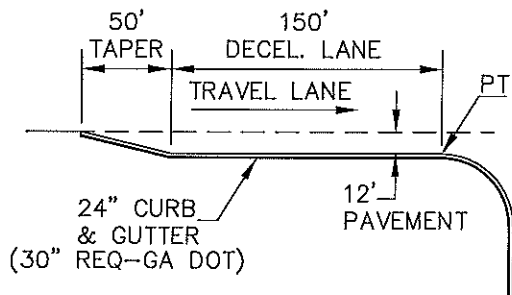
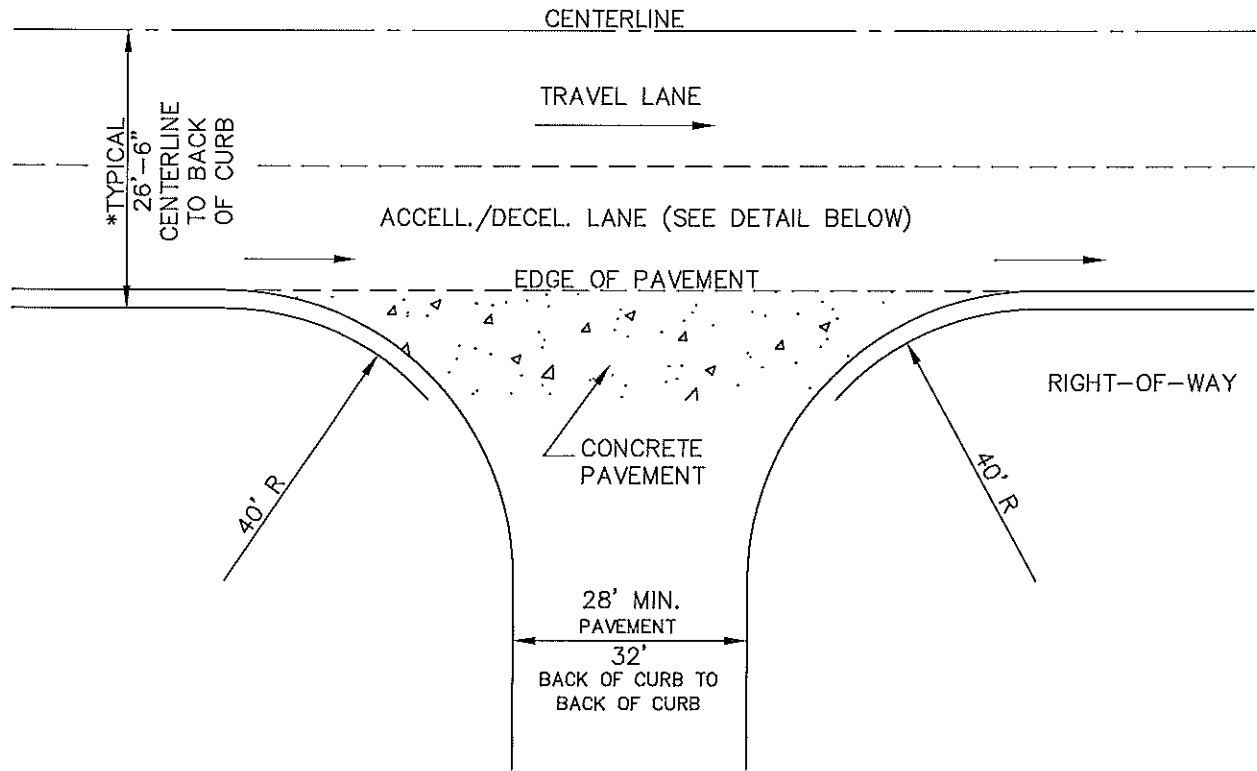
STANDARD DESIGN &
CONSTRUCTION DETAILS

"T" INTERSECTION -
COLLECTOR / ARTERIAL

3.13

DRIVEWAY FOR:

- SERVICE STATIONS
- COMMERCIAL SITES (OVER 80,000 SQ. FT.)
- OFFICE INSTITUTIONAL COMPLEXES (OVER 100,000 SQ.FT.)
- APARTMENT/CONDO COMPLEXES (OVER 200 UNITS)
- MOBILE HOME COMPLEXES (OVER 200 LOTS)



NOTE: DECEL. LANE SHOWN.
ACCELL LANE IS OPPOSITE.

ACCELL./DECEL. LANE

DRIVEWAY NOTES:

1. 28 FT. OF PAVEMENT WIDTH.
2. 8" X 30" X 14" @ 3000 PSI CURB AND GUTTER.
3. 40 FOOT RADII ON CURBS.
4. CONCRETE PAVEMENT - 8" THICK, 3500 PSI. OVER COMPACTED SUBGRADE

* ADDITIONAL WIDENING MAY BE REQUIRED.

ISLANDS AT INTERSECTIONS ARE AT THE OPTION OF THE DEVELOPER, EXCEPT FOR GEORGIA D.O.T. CONTROLLED ROUTES.



**CITY OF
WALNUT GROVE**

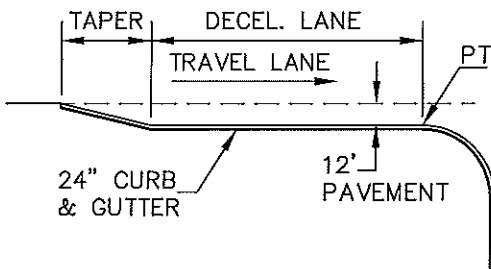
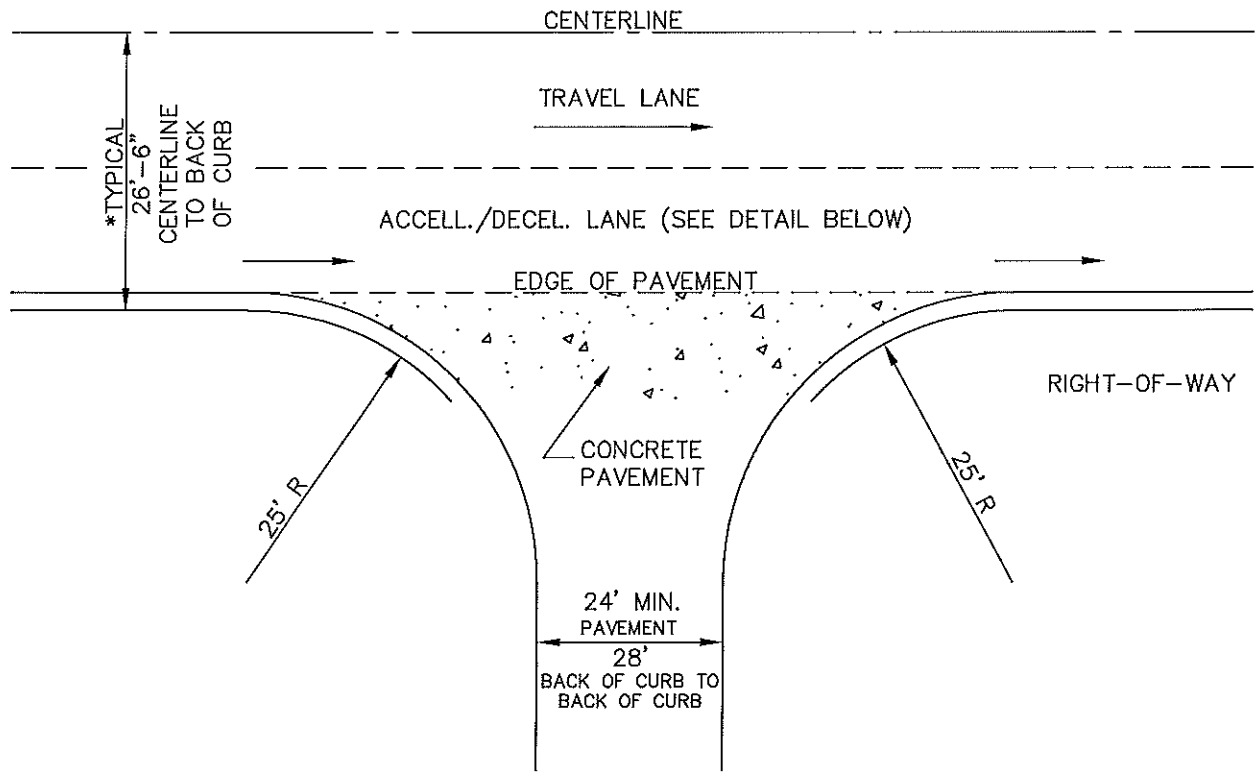
**STANDARD DESIGN &
CONSTRUCTION DETAILS**

**INDUSTRIAL
DRIVEWAY**

3.14

DRIVEWAY FOR:

COMMERCIAL SITES (80,000 SQ. FT. OR LESS)
 OFFICE INSTITUTIONAL COMPLEXES (100,000 SQ.FT. OR LESS)
 APARTMENT/CONDO COMPLEXES (200 UNITS OR LESS)
 MOBILE HOME COMPLEXES (200 LOTS OR LESS)



NOTE: DECEL. LANE SHOWN.
 ACCELL LANE IS OPPOSITE.

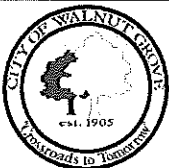
ACCELL/DECEL. LANE

DRIVEWAY NOTES:

1. 24 FT. OF PAVEMENT WIDTH.
2. 8" X 30" X 14" @ 3000 PSI CURB AND GUTTER.
3. 25 FOOT RADII ON CURBS.
4. CONCRETE PAVEMENT - 8" THICK, 3500 PSI. OVER COMPACTED SUBGRADE

* ADDITIONAL WIDENING MAY BE REQUIRED.

ISLANDS AT INTERSECTIONS ARE AT THE OPTION OF THE DEVELOPER, EXCEPT FOR GEORGIA D.O.T. CONTROLLED ROUTES.

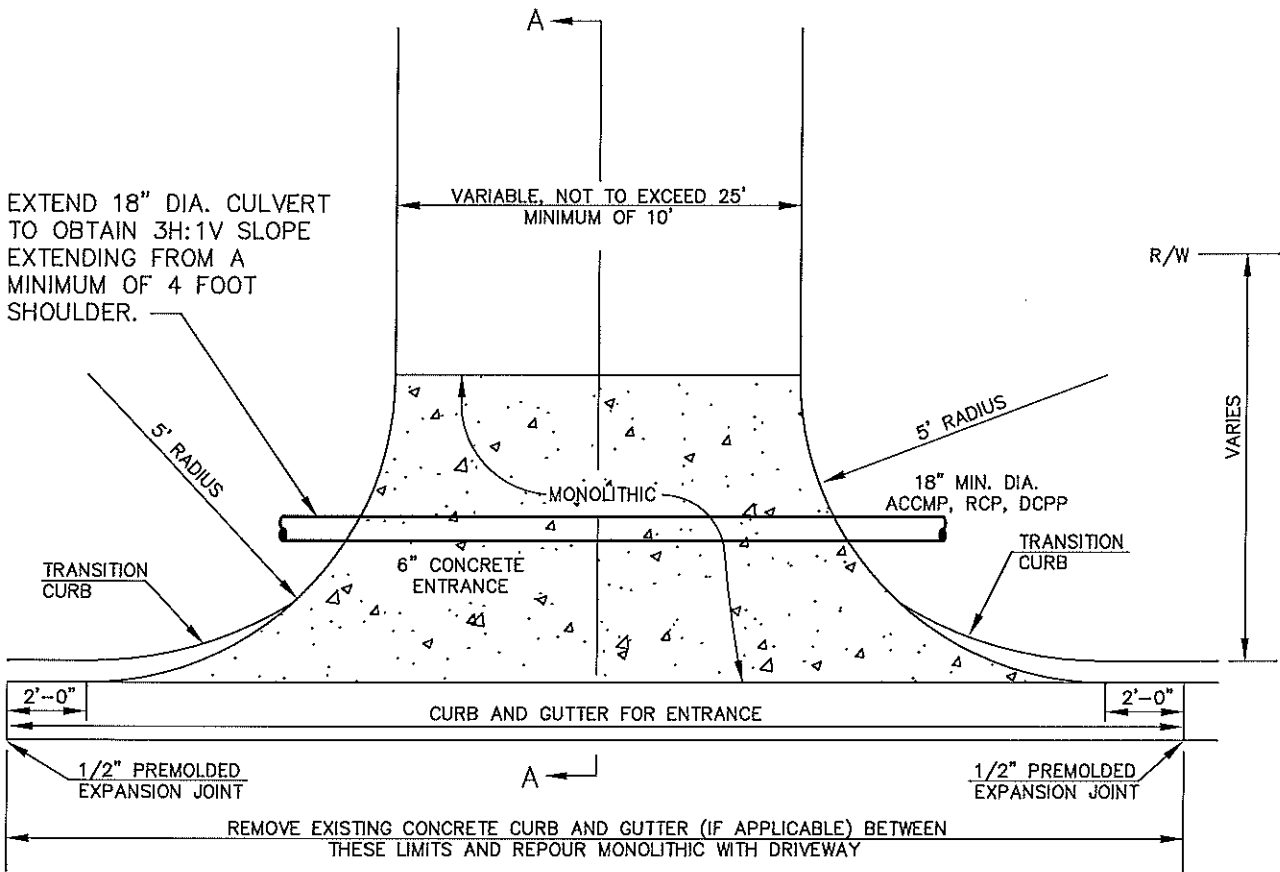


**CITY OF
 WALNUT GROVE**

**STANDARD DESIGN &
 CONSTRUCTION DETAILS**

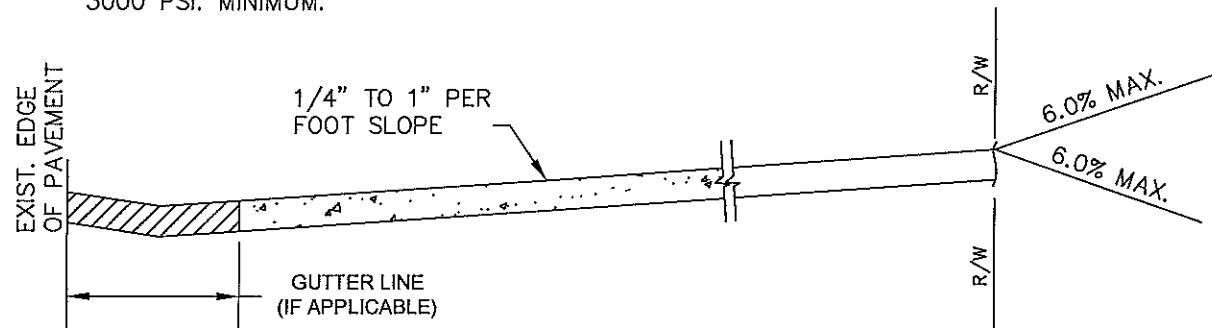
COMMERCIAL DRIVEWAY

3.15



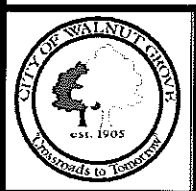
NOTE: ALL CONCRETE TO BE 3000 PSI. MINIMUM.

PLAN



SECTION A-A

NOTE: INSTALL MIN. 18" DIAMETER CULVERT AT LOW POINT OF DRIVEWAY, AS REQUIRED BY THE CITY OF WALNUT GROVE.

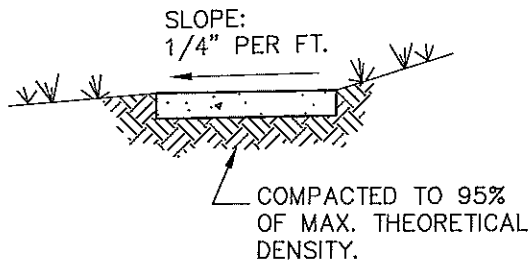
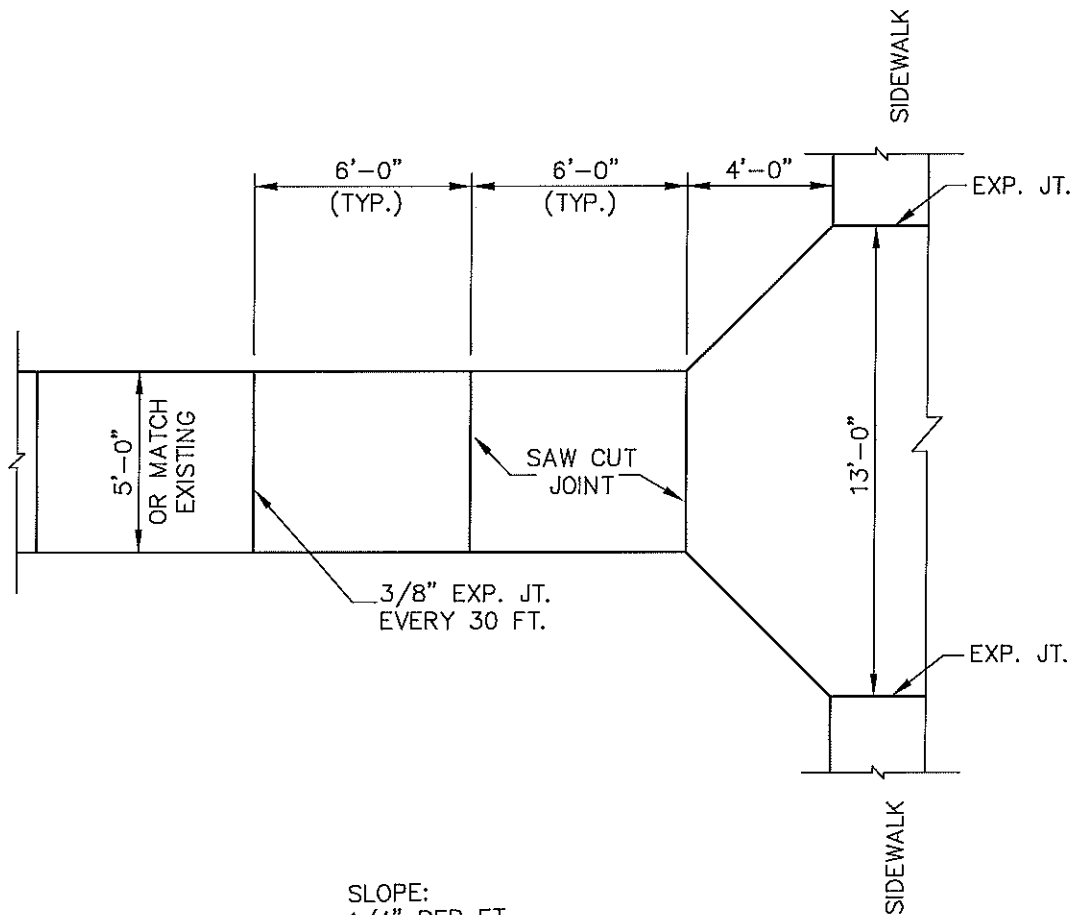


**CITY OF
WALNUT GROVE**

**STANDARD DESIGN &
CONSTRUCTION DETAILS**

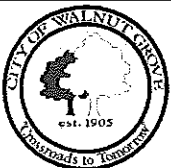
RESIDENTIAL DRIVEWAY

3.16



NOTES:

1. MIN. SLAB THICKNESS = 4".
2. PROVIDE 1/2" EXPANSION JOINT AT THE INTERSECTION OF SIDEWALK W/STRUCTURES UNLESS OTHERWISE NOTED.
3. SIDEWALK TO BE CONSTRUCTED OF 3000 PSI MIN.
© 28 DAYS.

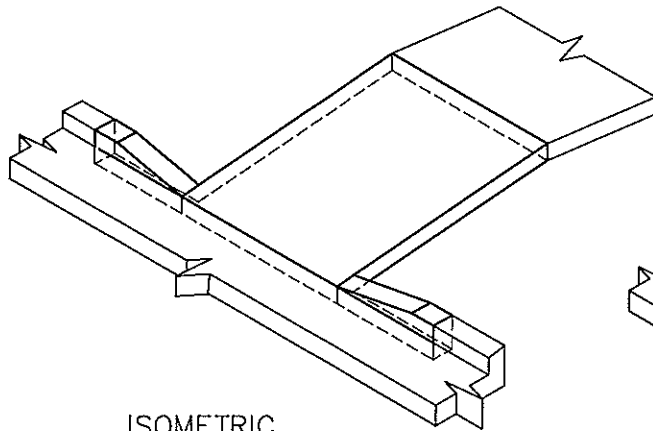


CITY OF
WALNUT GROVE

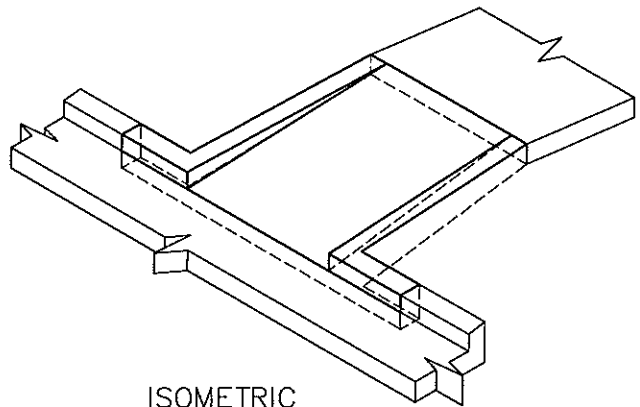
STANDARD DESIGN &
CONSTRUCTION DETAILS

TYPICAL CONCRETE
SIDEWALK

3.17

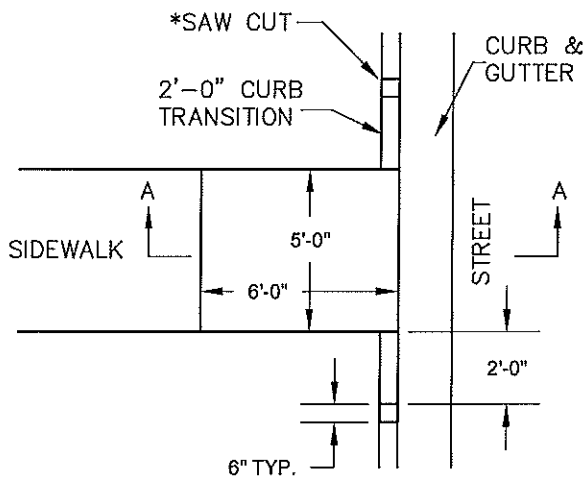


ISOMETRIC

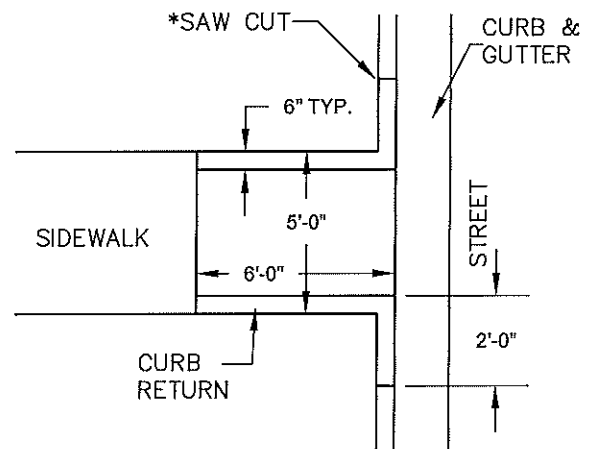


ISOMETRIC

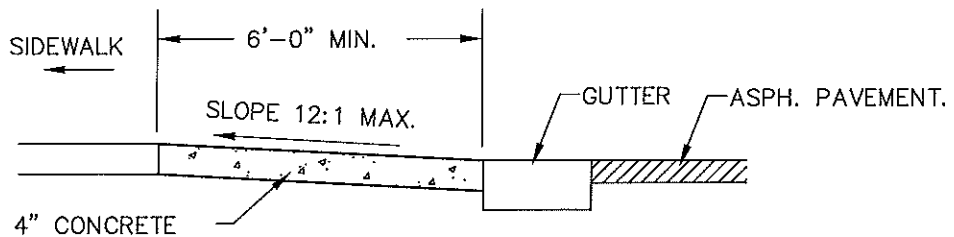
* SAW CUT EXISTING CURB & GUTTER WHEN CONNECTING NEW RAMP TO EXISTING CURB & GUTTER.



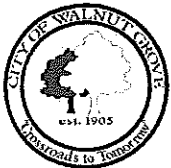
TYPE "A" - PLAN



TYPE "B" - PLAN



SECTION A-A



CITY OF
WALNUT GROVE

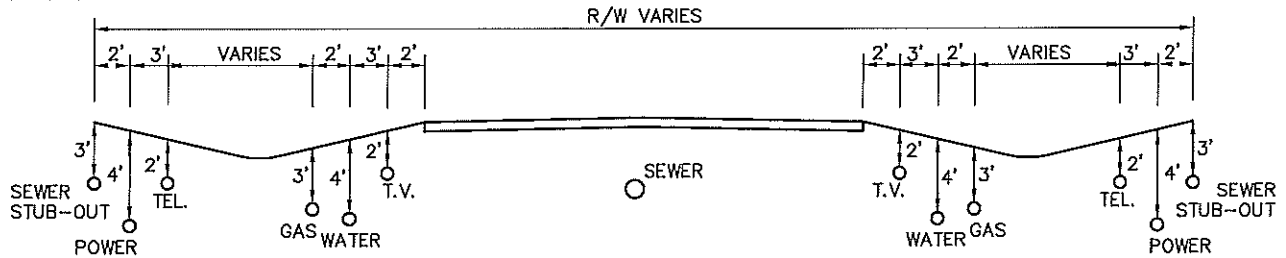
STANDARD DESIGN &
CONSTRUCTION DETAILS

WHEELCHAIR RAMP

3.18

NORTH OR
WEST SIDE

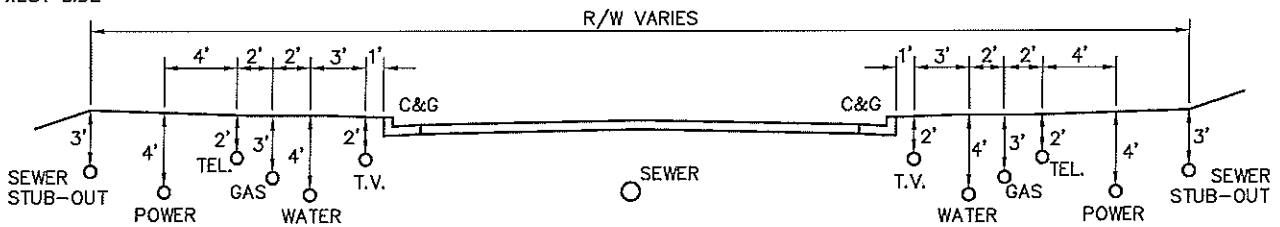
SOUTH OR
EAST SIDE



STREET WITH OPEN DITCH

NORTH OR
WEST SIDE

SOUTH OR
EAST SIDE



STREET WITH CURB & GUTTER



CITY OF
WALNUT GROVE

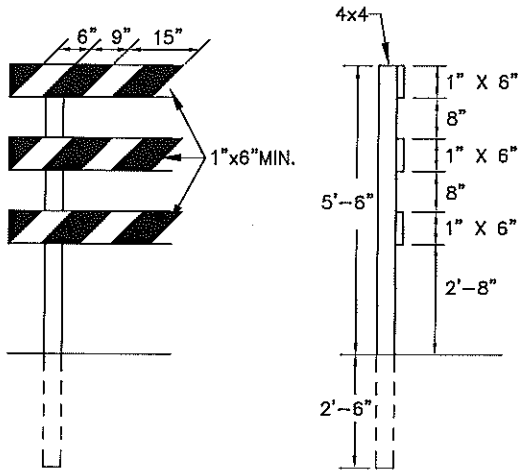
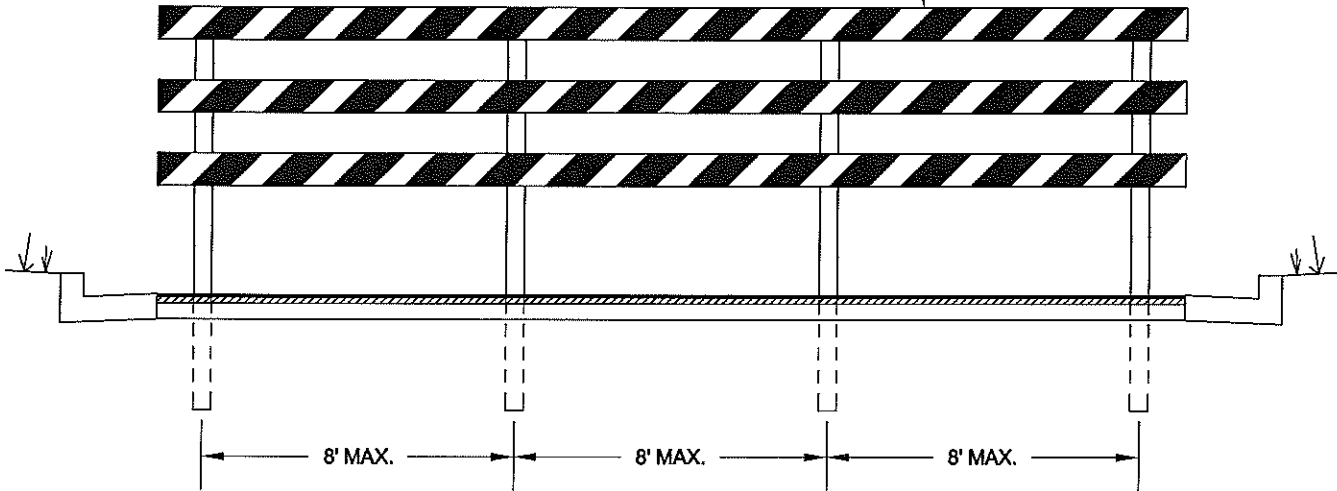
STANDARD DESIGN &
CONSTRUCTION DETAILS

LOCATION OF
STREET UTILITIES

3.19

POSTS AND PLANKS SHALL BE OF SOTHERN YELLOW PINE, FREE OF KNOTS AND SHAKES.

FOR BOARD SPACING SEE ILLUSTRATION BELOW



NOTE:

BARRICADES MAY BE OF VARIABLE LENGTH AS DETERMINED BY STREET WIDTH. THE CLASS "A" BARRICADE IS THE TYPE NORMALLY REQUIRED FOR MAJOR OPERATIONS, WHERE THE BARRICADE MUST REMAIN IN PLACE FOR EXTENDED PERIODS. HOWEVER, IN ANY LENGTH BARRICADE 10 FEET OR LONGER, VERTICAL UP-RIGHTS SHOULD NOT EXCEED A CENTER TO CENTER DIMENSION OF 8 FEET WITH ONE FOOT OVERHANG ON EACH END. THE DIRECTION OF STRIPES CANNOT ALWAYS SLANT DOWNWARD TOWARD THE SIDE ON WHICH THE TRAFFIC IS TO PASS, AS MANY BARRICADES MUST NOT BE PASSED ON EITHER SIDE. WHERE A BARRICADE EXTENDS ENTIRELY ACROSS A ROADWAY, IT IS SUGGESTED THAT THE STRIPING SLOPE DOWNWARD IN THE DIRECTION TOWARD WHICH TRAFFIC MUST TURN IN DETOURING. WHERE BOTH RIGHT AND LEFT TURNS ARE PROVIDED FOR, THE STRIPING SHOULD SLOPE DOWNWARD IN BOTH DIRECTIONS FROM THE CENTER. SLOPE ANGLE FOR THE STRIPES SHOULD ALWAYS BE 45°. ALL BARRICADES USED AT NIGHT SHALL BE EFFECTIVELY REFLECTORIZED.

COLORS TO BE BLACK ON WHITE OR WHITE ON BLACK.

FOR OTHER TRAFFIC CONTROL DEVICES, REFER TO THE LATEST VERSION OF "THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".

NOTE:

REFLECTING ELEMENTS OR MATERIAL PLACED ON 4' SPACING ACROSS BARRICADE.

NOTE:

ALL LUMBER (PLANKS AND BOARDS) TO BE OF TREATED MATERIAL, I.E. CHROMATED ZINC CHLORIDE (C.Z.C.) OR WOLMAN SALTS. "TREATED MATERIAL" TO BE CONSTRUED AS "PRESSURE TREATED".

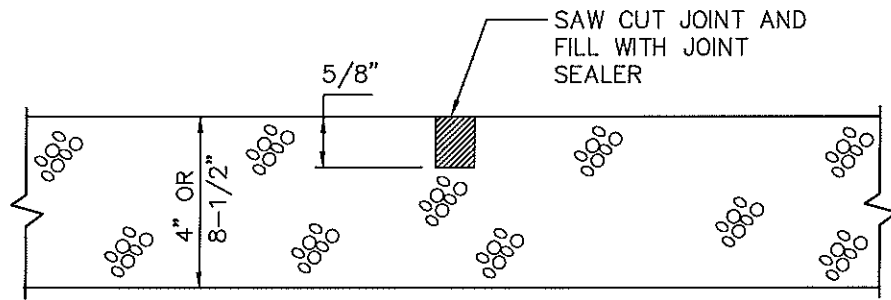


CITY OF
WALNUT GROVE

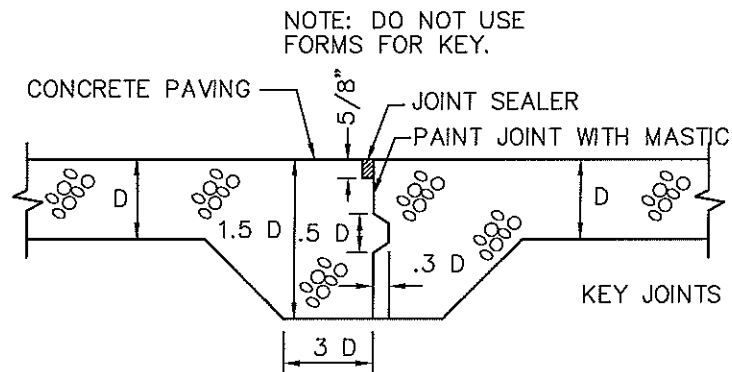
STANDARD DESIGN &
CONSTRUCTION DETAILS

STANDARD ROAD
BARRICADE

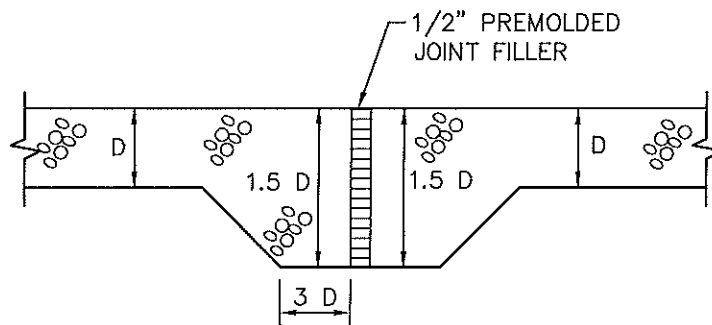
3.20



TYPICAL CONTRACTION JOINT



TYPICAL CONSTRUCTION JOINT



NOTE: EXPANSION JOINTS SHALL BE USED WHEN CONCRETE POUR ABUTTS ANOTHER POUR, CURB, SIDEWALK OR OTHER RIGID STRUCTURE.

TYPICAL EXPANSION JOINT



CITY OF
WALNUT GROVE

STANDARD DESIGN &
CONSTRUCTION DETAILS

CONCRETE JOINTS

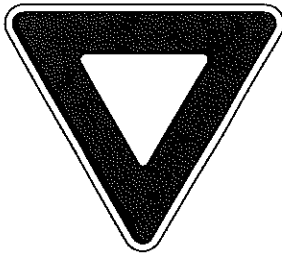
3.21



R2-1
24" X 30"



W14-1
30" X 30"

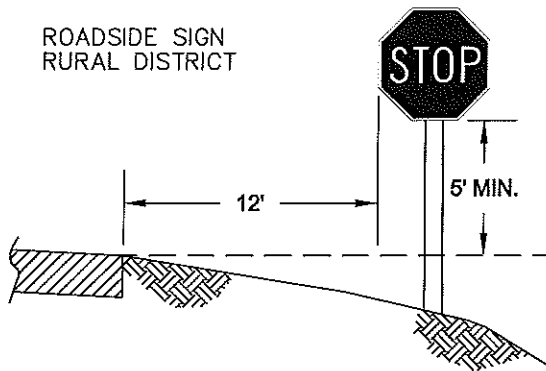


R1-2
36" X 36" X 36"

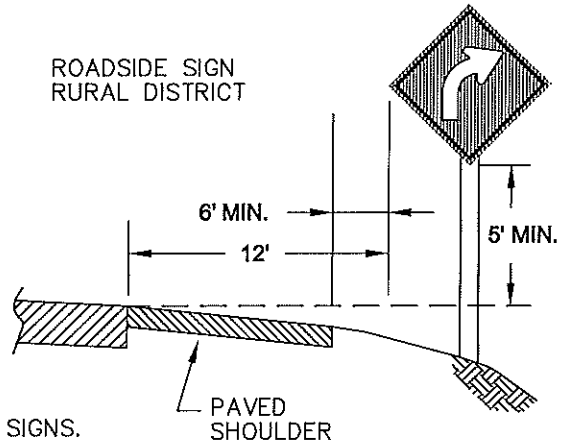


R1-1
30" X 30"

ROADSIDE SIGN
RURAL DISTRICT



ROADSIDE SIGN
RURAL DISTRICT



NOTE: THE ABOVE DETAILS REPRESENT A SAMPLE OF SIGNS. THE DEVELOPER/APPLICANT SHALL PROVIDE DETAILS FOR ALL REQUIRED SIGNS FOR REVIEW & APPROVAL. ALL SIGNS TO CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), LATEST EDITION GEORGIA DEPARTMENT OF TRANSPORTATION STANDARDS.



CITY OF
WALNUT GROVE

STANDARD DESIGN &
CONSTRUCTION DETAILS

STREET SIGNS

3.22

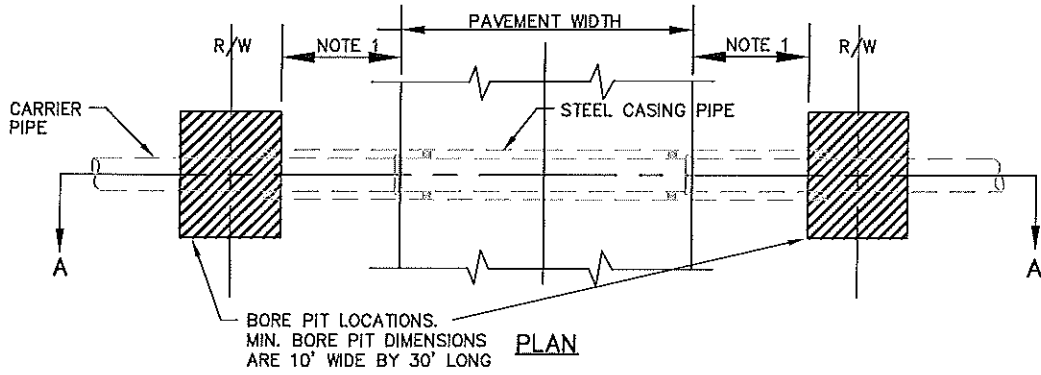


CITY OF
WALNUT GROVE

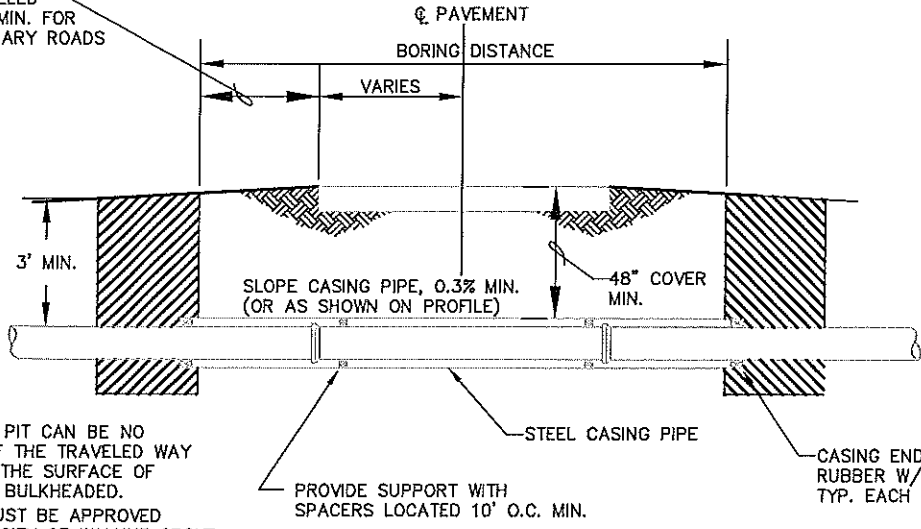
STANDARD DESIGN &
CONSTRUCTION DETAILS

SIGN POSTS

3.23



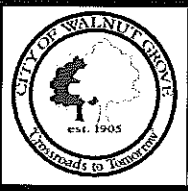
30' MIN. FOR CONTROLLED
ACCES ROADS & 10' MIN. FOR
PRIMARY AND SECONDARY ROADS
(SEE NOTE 1)



NOTES:

1. THE NEAR EDGE OF THE PIT CAN BE NO CLOSER TO THE EDGE OF THE TRAVELED WAY THAN ITS DEPTH BELOW THE SURFACE OF THE TRAVELWAY UNLESS BULKHEADED.
2. ALL ROAD CROSSINGS MUST BE APPROVED AND PERMITTED BY THE CITY OF WALNUT GROVE.

SECTION A-A



**CITY OF
WALNUT GROVE**

**STANDARD DESIGN &
CONSTRUCTION DETAILS**

**JACK AND BORE
CASING PIPE (UTILITIES)**

3.24