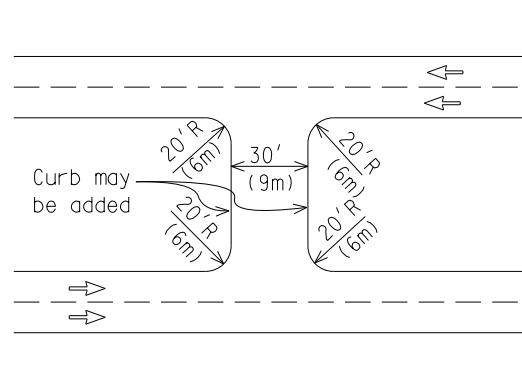


BI-DIRECTIONALS

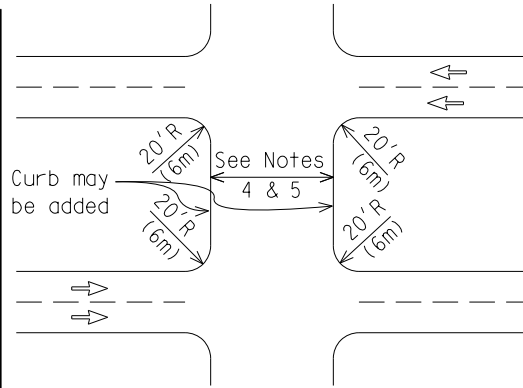
FREE-ACCESS

Dimensions may vary depending on design vehicle and turning movements. See GEO-650-Series for additional details.



Radii shall form a semicircle for median widths of 40' (12m) or less.
Also, see notes.

B-1



Radii shall form a semicircle for median widths of 40' (12m) or less.
Also, see notes.

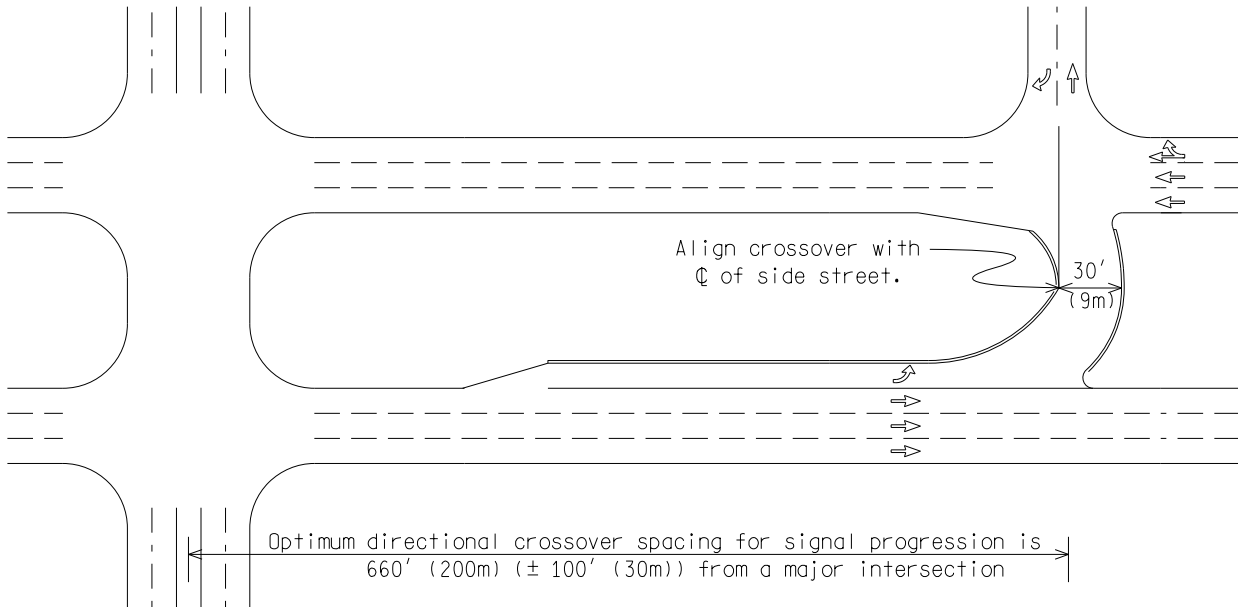
B-2

SPECIAL

Special situations, i.e., wide streets, one-way streets, or heavy left-turn movements may make other crossover widths desirable. Their details should be determined by the Geometric Review and Congestion Analysis Unit, Division of Operations. Also, see notes.

B-0

GENERAL PLACEMENT OF DIRECTIONAL CROSSOVERS



The number of crossovers per mile (km) is determined by need. Generally, 1/8 mile (0.2km) spacing is used in urban areas and 1/4 mile (0.4km) spacing is used in rural areas.

NOT TO SCALE



DRAWN BY: ECH
CHECKED BY: IRG

FILE:PW RD TS Geo/mdot traf GEO-670-E.dgn

REV.

GEOMETRIC DESIGN GUIDE FOR
CROSSOVERS

06/10/2014
PLAN DATE:

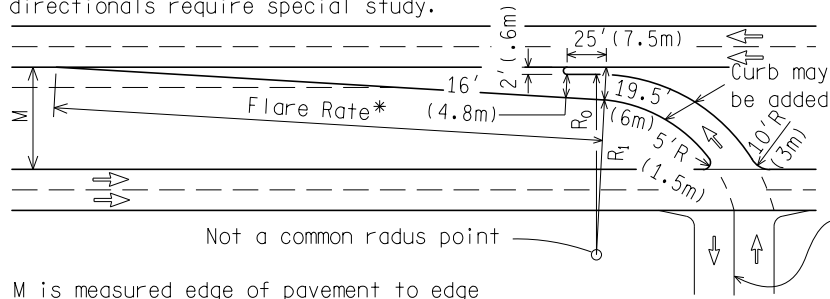
GEO-670-E

SHEET
1 OF 5

DIRECTIONALS

FREE-ACCESS

Cross-street directionals for median widths over 100' (30m) and less than 26' (8m) require special study. Rural cross-street directionals require special study.



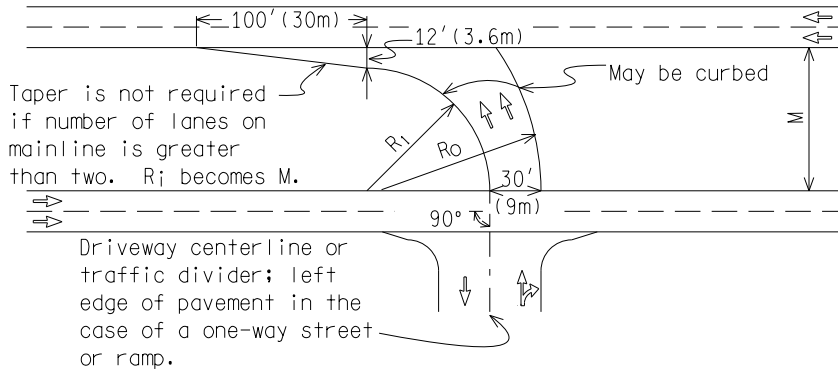
DETAIL	MEDIAN WIDTH, M	R_1	R_0
D-11U	100'-66' (30m-20m)	(1.4)(M)	(1.6)(M)
D-12U	65'-41' (20m-12m)	(1.4)(M)	(1.8)(M)
D-13U	40'-26' (12m-8m)	(1.8)(M)	(2.0)(M)
D-10	SPECIAL		

* Use GEO-100-Series and GEO-101-Series for desirable flare rates.

Driveway centerline or traffic divider; left edge of pavement in the case of a one-way street or ramp.

M is measured edge of pavement to edge of pavement.

D-10 THRU D-13U



DETAIL	MEDIAN WIDTH, M	R_1	R_0
D-21U	100'-30' (30m-9m)	M-12	(1.75)(M)
D-20	SPECIAL		

Median widths over 100' (30m) and less than 30' (9m) require special study.

Driveway centerline or traffic divider; left edge of pavement in the case of a one-way street or ramp.

D-20 AND D-21U

SPECIAL

Special situations may make other crossover details desirable. Their details should be determined by the Geometric Review and Congestion Analysis Unit.

Special study is required for directional crossovers with median widths less than 30' (9m) or greater than 120' (36m).

Loons may be required opposite crossover to accommodate turns in narrow medians.

D-0

AUXILIARY LANE TAPER TABLE

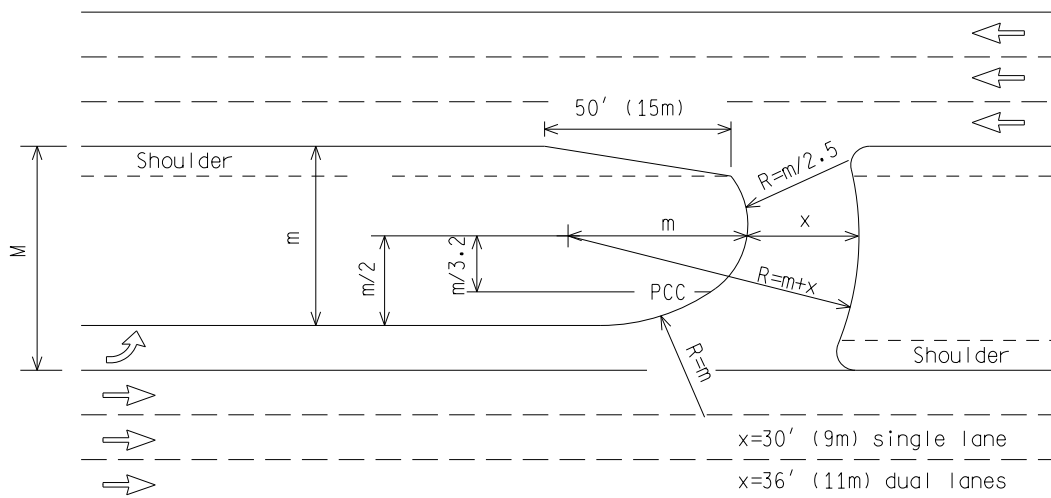
Not to be used for transitioning through traffic. The taper rate is the same for both curbed and uncurbed roadways.

POSTED SPEED MPH (kph)	AUXILIARY TAPER Ft (m)
≤ 35 (≤ 60)	75 (23)
40 (60)	100 (30)
45 (70)	130 (40m)
50 (80)	180 (55m)
55 (90)	225 (70m)

T-1

In an uncurbed area, use type "B" curb along storage lane and on both inside and outside radii.

CROSSOVER LAYOUT DETAIL



$x = 30'$ (9m) single lane

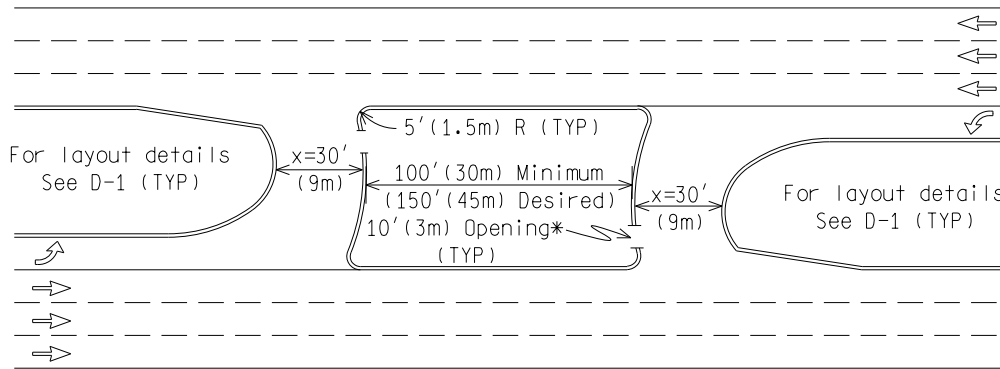
$x = 36'$ (11m) dual lanes

D-1

NOT TO SCALE

CURBED SECTION

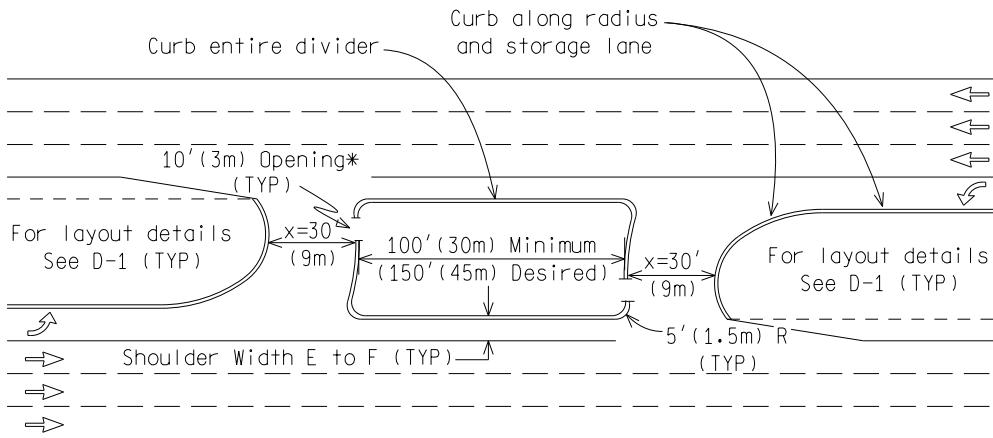
Crest of mound, for drainage and aesthetics, should not exceed 1' (0.3m) above the top of curb. If not paved, vegetation must not obstruct driver sight distance (TYP).



D-2

*See detail "L" on Standard Plan R-29-Series.

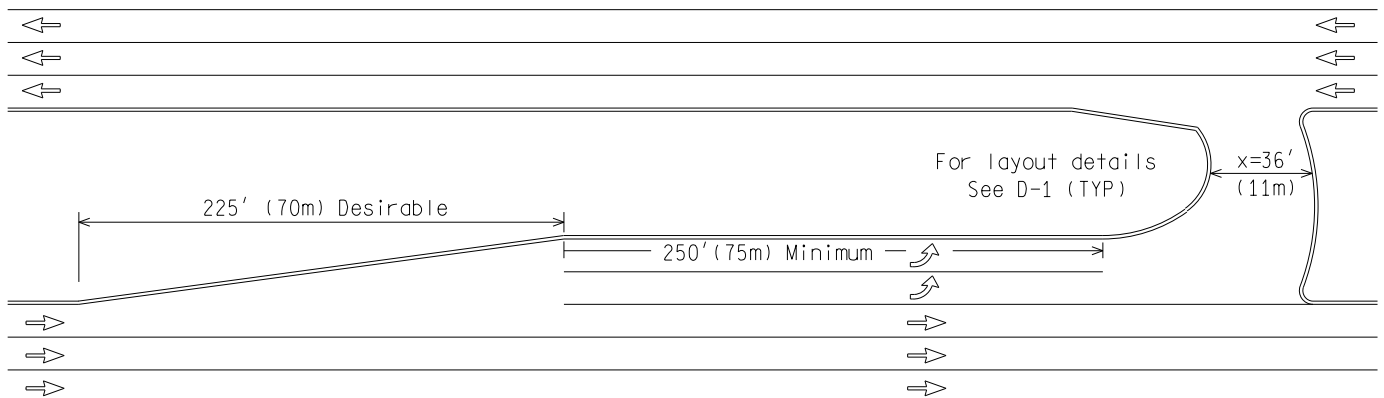
UNCURBED SECTION



D-3

*See detail "L" on Standard Plan R-29-Series.

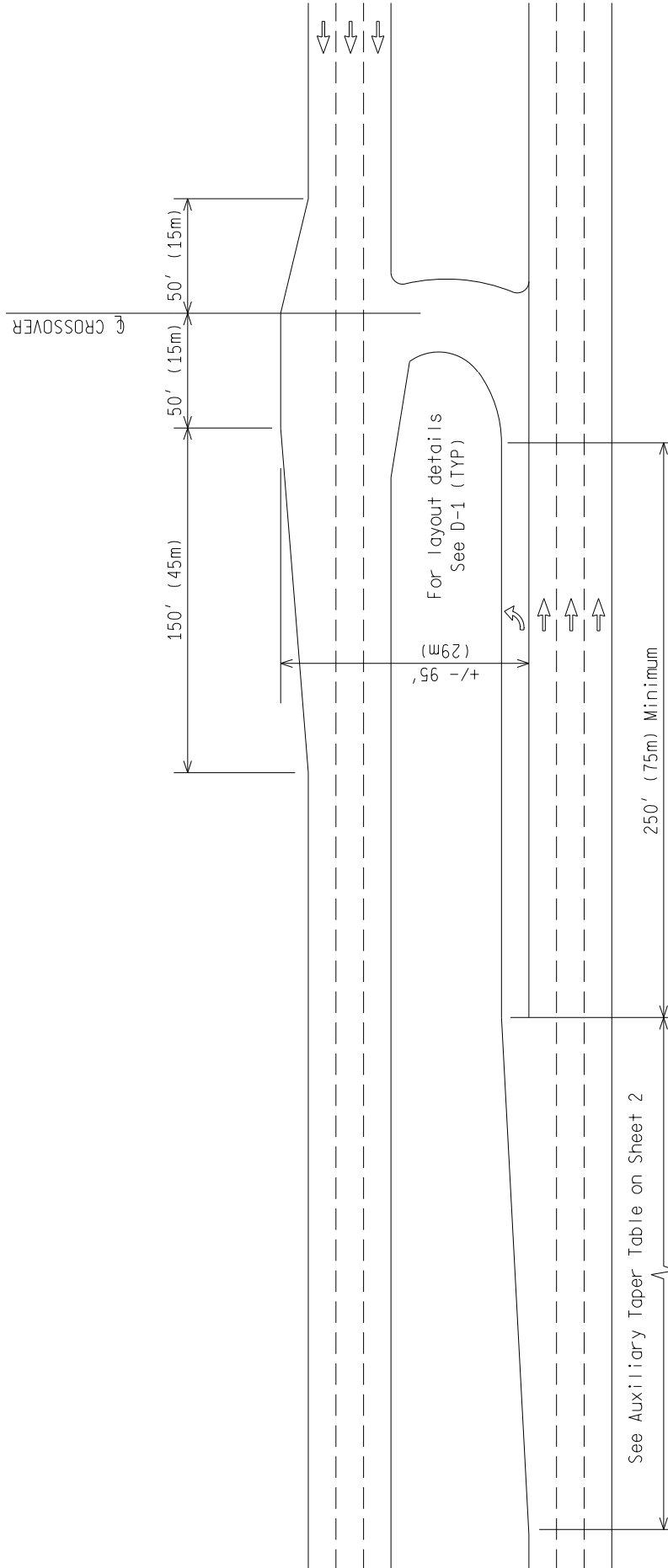
DUAL TURNS



D-4

NOT TO SCALE

TRUCK LOON



NOT TO SCALE

MINIMUM DESIGNS FOR U-TURNS

Type of Maneuver		M = Min. width of median - ft (m) for design vehicle				
		P	SU	BUS	WB-50	WB-65
Left Lane to Inner Lane		44' (13.4m)	76' (23.2m)	80' (24m)	82' (25m)	82' (25m) *
Left Lane to 2nd Lane		32' (9.8m)	64' (19.5m)	68' (20.7m)	70' (21m)	70' (21m) *
Left Lane to 3rd Lane		22' (6.7m)	54' (16.5m)	58' (17.7m)	60' (18m)	60' (18m) *

* To accommodate WB-65 semi-trucks, provide 36' (11m) crossover width or 4' (1.2m) paved area behind curb on the inside radius, from spring point to spring point.

Vehicle Codes and Length of Design Vehicle - ft (m)

P = Passenger, 19' (5.8m)
 SU = Single Unit Truck, 30' (9m)
 BUS = Bus, 40' (12m)
 WB-50 = Semi-Truck Medium Size, 55' (16.5m)
 WB-65 = Semi-Truck Large Size, 70' (21m)

NOTES:

1. Crossovers should be called for by their respective detail number or detailed in the plans.
2. Crossover details are to be used on free-access facilities only.
3. Bi-directional crossovers should have a minimum width of 30' (9m) at intersecting streets or commercial driveways which are 30' (9m) or less in width. For intersecting streets or commercial driveways that have a width of greater than 30' (9m), the width of the crossover should match the cross street width.
4. Desirably, free-access crossover grades should not exceed 3%; steeper grades require special study.
5. For type of curb on crossovers, see Sec. 6.06.06 of Road Design Manual.
6. For typical joint layouts on concrete pavement, see Standard Plan R-42-Series.
7. These design concepts are for new construction. Where modification may be needed for retrofitting to existing road features, consult the Geometric Review and Congestion Analysis Unit, Division of Operations.
8. Current AASHTO "A Policy on Geometric Design of Highways and Streets" and MDOT Guidelines should be used for sight distance requirements.

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