SIDEWALK   NO SIDEWALK

0.5m BUFFER
SEE NOTE 10

SEE NOTE 8

SIDEWALK
VARIES
SEE NOTE 10

0.5m RND.

1.5m MIN.

0.5m RND. NOTE 3

SHLD.

LANE VARIES

LANE VARIES

SHLD.

0.50 NOTE 1

RND. NOTE 3

1.5m MIN

PROPERTY LINE

PROPERTY LINE

2%

OG

BREAKPOINT

GRANULAR SEALING (TYP.) SEE NOTE 4

3H:1V

3H:1V

3H:1V

3H:1V

OG

SEE NOTE 8
SOD OR SEEDING

ROAD BASE
ROAD SUBBASE
SUBGRADE LINE

1.2m OF SOD EACH SIDE OF DITCH INVERT SEE NOTE 9

0.5m MIN. FROM BOTTOM OF SUBGRADE TO DITCH (SEE NOTE 5). IF MIN. DISTANCE NOT MET, INSTALL SUBDRAIN.

SECTION

0.3m MIN. FLAT BOTTOM SECTION AND 1.2m ON SLOPE TO HAVE 100mm TOPSOIL AND SODDING. SEE NOTE 9.

SUBDRAIN, IF REQUIRED SEE DETAIL A AND NOTE 5

SHOULDER SLOPE 6% UNLESS OTHERWISE NOTED. SEE NOTE 2

ROAD SLOPE 2-4% UNLESS OTHERWISE NOTED

0.5m MIN.

SEE NOTE 8

ROAD BASE

3H:1V

3H:1V

ROAD SUBBASE

0.5m MIN w/o SUBDRAIN

0.3m

SUBGRADE LINE

150mm SUBDRAIN c/w 19mm CLEAR STONE AND FILTER CLOTH AS PER T-216.02-8
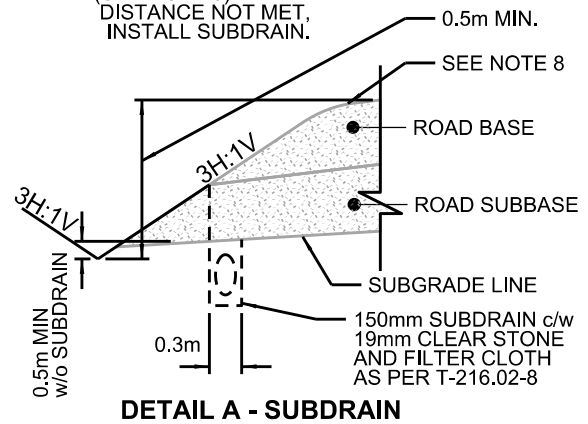
DETAIL A - SUBDRAIN

TABLE 1 - SHOULDER WIDTHS

Land Use	Traffic	Parking	Locals	Collectors	Minor Arterials	Major Arterials	Express ways
Residential	One or Two-Way	None	0.6m	1.0m	-	-	-
	One or Two-Way	One-Side	0.6m	1.0m	-	-	-
Non-Residential	One or Two-Way	None	1.0m	1.5m	-	-	-
	One or Two-Way	One-Side	1.0m	1.5m	-	-	-
	Multi-Lane Undivided		-	-	3.0m	3.0m	
	Multi-Lane Divided						
	Inside Shoulder		-	-	1.5m	1.5m	1.5m
	Outside Shoulder		-	-	3.0m	3.0m	3.0m

NOTES:

1. SHOULDER WIDTH AS PER TABLE 1 AND T.A.C MANUAL TABLE 4.4.1 - SHOULDER WIDTHS (T.A.C VERSION JUNE 2017). PAVED AND UNPAVED SHOULDERS AS PER OPSD 210.070.

2. FOR SUPER ELEVATED ROADS, REFER TO OPSD 210.020 FOR SHOULDER CROSSFALL.

3. FOR ROADS WITH GUIDERAILS, ROUNDING TO BE 1.0m MINIMUM. REFER TO OPSD 202.031 AND 202.032 FOR GRADING AT END TREATMENTS. FOR GUIDERAILS REFER TO OPSD DIVISION 900.

4. GRANULAR SEALING IS REQUIRED FOR SHOULDER AND ROUNDING FOR 1.0m ON EITHER SIDE OF ROUNDING (OR TO START OF GRASS/SOD ON DITCH SIDE, OR START OF PAVEMENT ON ROAD SIDE). AT GUIDERAIL LOCATIONS AND LOCATIONS WHERE THERE ARE CONCERNS OF EXCESSIVE ROAD RUNOFF, APPLY GRANULAR SEALING FOR THE ENTIRE ROUNDING AND SHOULDER WIDTH. GRANULAR SEALING AS PER OPSS 305 AND OPSD 210.070.

5. ROAD SUBDRAIN REQUIRED WHERE TOP OF SUBGRADE TO BOTTOM OF DITCH IS LESS THAN 0.5m. SUBDRAIN AS PER T-216.02-8. CONNECT SUBDRAIN TO DITCH WITH C.S.P. AND INLET COVER TO PREVENT RODENT ENTRY.

6. DITCH LONGITUDINAL SLOPE TO BE DESIGNED TO ALLOW A MAXIMUM VELOCITY OF 1.5m/s, BEYOND WHICH, SPECIFIC EROSION CONTROL MEASURES ARE REQUIRED. MINIMUM LONGITUDINAL SLOPE OF 0.3 PERCENT. CONTROL MEASURES MAY INCLUDE CHECK DAMS AS PER T-850.031, T-850.032, T-850.033 AND OPSD 219.210.

7. FOR ENTRANCES SEE DETAIL T-850.172 AND T-350.01.

8. GRANULAR SIDE SLOPES ARE 3H:1V MAXIMUM. GRASSED/SODDED DITCH SIDE SLOPES 3H:1V PREFFERED AND 2H:1V MAXIMUM. SIDE SLOPES TO BE MINIMIZED WHERE POSSIBLE - TO BE APPROVED PER LOCATION.

9. PROVIDE 1.2m OF SOD ON EITHER SIDE OF DITCH INVERT. REMAINDER OF DITCH TO BE 100mm TOPSOIL AND SEEDING. IF BOULEVARD WIDTH PERMITS, INSTALL 1.0m MIN. FLAT BOTTOM SECTION AT DITCH BASE AND 1.0m OF SOD ON EITHER SIDE OF 1.0m FLAT SECTION.

10. FOR LOCATIONS WITH SIDEWALKS, INCLUDE 0.5m GRASSED/SODDED BUFFER ZONE (SLOPE 2%-4%) FROM EDGE OF SIDEWALK PRIOR TO ROUNDING AND 3:1 SLOPE TO DITCH. SIDEWALKS AS PER T-310.010-2 WITH SOFT BOULEVARD.

11. SITE SPECIFIC LOCAL CONDITIONS MAY WARRANT CHANGES TO THE STANDARD DRAWINGS. MODIFICATIONS MUST BE APPROVED BY THE CITY PROJECT MANAGER.

All dimensions are in millimetres unless otherwise shown.

ENGINEERING & CONSTRUCTION SERVICES STANDARD DRAWING	REV 0	JAN 2021
ROADWAY DITCH CROSS SECTION	**T-850.171**	
	NTS	SHEET 1

TORONTO