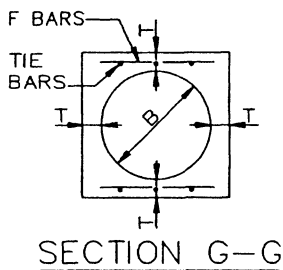
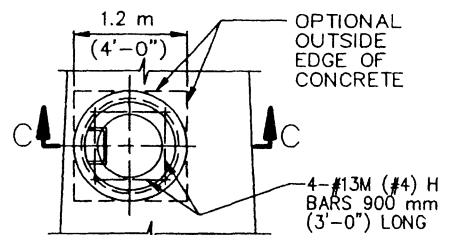


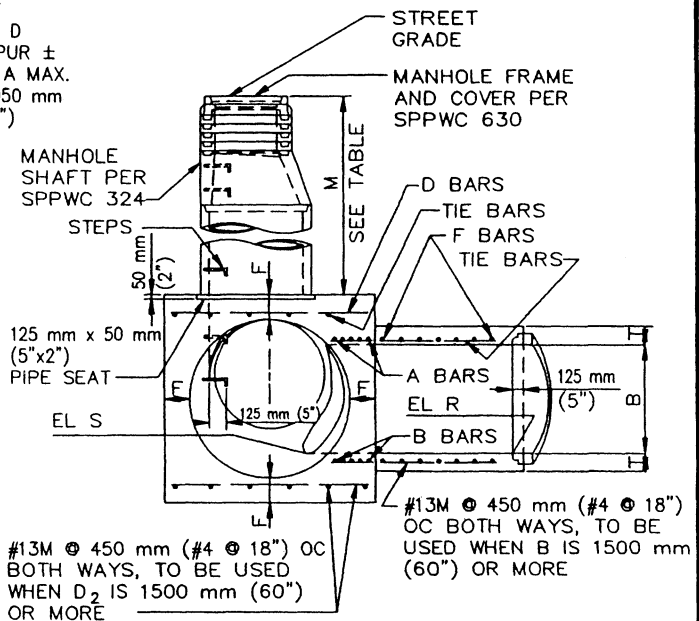
PLAN  
(SHAFT NOT SHOWN)



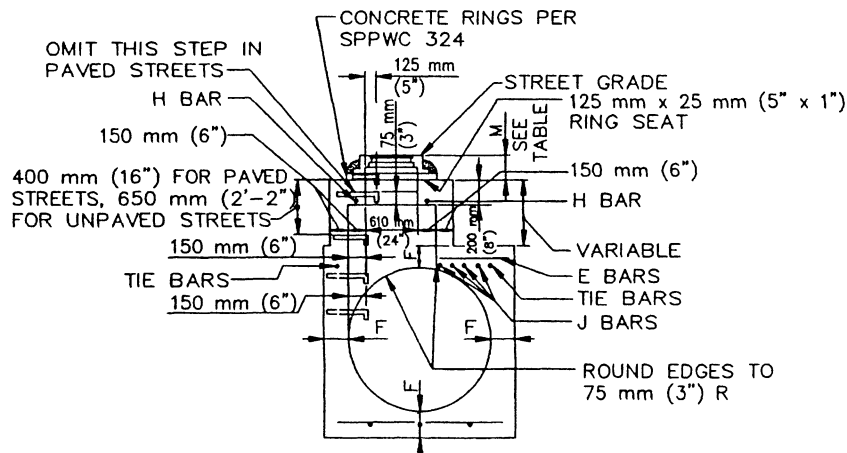
SECTION G-G



DETAIL "N"  
(RINGS AND COVER NOT SHOWN)  
SEE NOTE 2



SECTION N-M-P-O



SECTION C-C

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

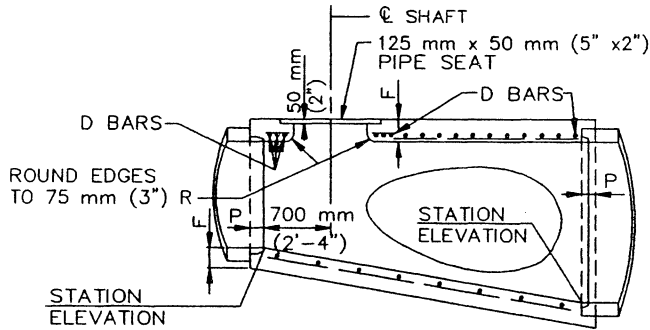
PROMULGATED BY THE  
PUBLIC WORKS STANDARDS INC.  
GREENBOOK COMMITTEE  
1992  
REV. 1996

MANHOLE PIPE TO PIPE  
(LARGE SIDE INLET)

USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION

STANDARD PLAN  
METRIC  
322-1

SHEET 1 OF 4



LONGITUDINAL SECTION

TABLE OF BARS SIZES			
D <sub>2</sub> OR B	A & B	D OR F	
300 mm (12")-975 mm (39")	#16M $\odot$ 75 mm (#5 $\odot$ 3")	#13M $\odot$ 150 mm (#4 $\odot$ 6")	
1050 mm (42")-2100 mm (84")	#19M $\odot$ 75 mm (#6 $\odot$ 3")	#16M $\odot$ 150 mm (#5 $\odot$ 6")	
2250 mm (90")-3600 mm (144")	#22M $\odot$ 75 mm (#7 $\odot$ 3")	#19M $\odot$ 150 mm (#6 $\odot$ 6")	

TABLE OF VALUES FOR M (SEE NOTE 2)				
SECTION	PAVED STREET		UNPAVED STREET	
	MAX	MIN	MAX	MIN
N-M-P-O		867 mm (2'-10 1/2")		1060 mm (3'-6")
C-C	282 mm (11")	217 mm (8 1/2")	410 mm (16")	380 mm (15")

TABLE OF VALUES FOR F	
D <sub>2</sub>	F
900 mm (36")	165 mm (6 1/2")
975 mm (39")	180 mm (7")
1050 mm (42")	190 mm (7 1/2")
1125 mm (45")	195 mm (7 3/4")
1200 mm (48")	205 mm (8")
1275 mm (51")	215 mm (8 1/2")
1350 mm (54")	230 mm (9")
1425 mm (57")	235 mm (9 1/4")
1500 mm (60")	240 mm (9 1/2")
1575 mm (63")	255 mm (10")
1650 mm (66")	260 mm (10 1/4")
1725 mm (69")	275 mm (10 3/4")
1800 mm (72")	280 mm (11")
1950 mm (78")	300 mm (11 3/4")
2100 mm (84")	320 mm (12 1/2")
2250 mm (90")	335 mm (13 1/4")
2400 mm (96")	355 mm (14")
2550 mm (102")	395 mm (15 1/2")
2700 mm (108")	405 mm (16")
2850 mm (114")	420 mm (16 1/2")
3000 mm (120")	430 mm (17")
3150 mm (126")	430 mm (17")
3300 mm (132")	445 mm (17 1/2")
3450 mm (138")	445 mm (17 1/2")
3600 mm (144")	455 mm (18")

TABLE OF VALUES FOR T	
B	T
300 mm (12")	100 mm (4")
375 mm (15")	110 mm (4 1/4")
450 mm (18")	115 mm (4 1/2")
525 mm (21")	125 mm (5")
600 mm (24")	135 mm (5 1/4")
675 mm (27")	140 mm (5 1/2")
750 mm (30")	150 mm (6")
825 mm (33")	160 mm (6 1/4")
900 mm (36")	165 mm (6 1/2")
975 mm (39")	180 mm (7")
1050 mm (42")	190 mm (7 1/2")
1125 mm (45")	195 mm (7 3/4")
1200 mm (48")	205 mm (8")
1275 mm (51")	215 mm (8 1/2")
1350 mm (54")	230 mm (9")
1425 mm (57")	235 mm (9 1/4")
1500 mm (60")	240 mm (9 1/2")
1575 mm (63")	255 mm (10")
1650 mm (66")	260 mm (10 1/4")
1725 mm (69")	275 mm (10 3/4")
1800 mm (72")	280 mm (11")
1950 mm (78")	300 mm (11 3/4")
2100 mm (84")	320 mm (12 1/2")
2250 mm (90")	335 mm (13 1/4")
2400 mm (96")	355 mm (14")
2550 mm (102")	395 mm (15 1/2")
2700 mm (108")	405 mm (16")
2850 mm (114")	420 mm (16 1/2")
3000 mm (120")	430 mm (17")
3150 mm (126")	430 mm (17")
3300 mm (132")	445 mm (17 1/2")
3450 mm (138")	445 mm (17 1/2")
3600 mm (144")	455 mm (18")

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

**MANHOLE PIPE TO PIPE  
(LARGE SIDE INLET)**

STANDARD PLAN  
METRIC

**322-1**

SHEET 2 OF 4

NOTES

1. VALUES FOR A, B, C, D<sub>1</sub>, D<sub>2</sub> ELEVATION R AND ELEVATION S ARE SHOWN ON THE PLANS. ELEVATION S APPLIES AT INSIDE WALL OF STRUCTURE.
2. WHEN DEPTH M FROM STREET GRADE TO THE TOP OF THE BOX IS LESS THAN 867 mm (2'-10 1/2") FOR PAVED STREETS OR 1060 mm (3'-6") FOR UNPAVED STREETS, CONSTRUCT MONOLITHIC SHAFT PER SECTION C-C AND DETAIL "N". SHAFT FOR ANY DEPTH OF MANHOLE MAY BE CONSTRUCTED PER SECTION C-C. WHEN DIAMETER D<sub>1</sub> IS 1200 mm (48") OR LESS, CENTER OF SHAFT MAY BE LOCATED PER NOTE 3.
3. CENTER OF MANHOLE SHAFT SHALL BE LOCATED OVER CENTERLINE OF STORM DRAIN WHEN DIAMETER D<sub>1</sub> IS 1200 mm(48") OR LESS, IN WHICH CASE PLACE E BARS SYMMETRICALLY AROUND SHAFT AT 45° WITH CENTERLINE.
4. LENGTH OF MANHOLE MAY BE INCREASED AT OPTION TO MEET PIPE ENDS, BUT ANY CHANGE IN LOCATION OF SPUR MUST BE APPROVED BY THE ENGINEER.
5. P SHALL BE 125 mm (5") FOR D<sub>2</sub>=2400 mm (96") OR LESS AND 200 mm (8") FOR D<sub>2</sub> OVER 2400 mm (96").
6. REINFORCEMENT SHALL CONFORM TO ASTM A 615M, GRADE 300 (ASTM A 615, GRADE 40), AND SHALL TERMINATE 40 mm (1 1/2") CLEAR OF CONCRETE SURFACES UNLESS OTHERWISE SHOWN.
7. FLOOR OF MANHOLE SHALL BE STEEL TROWELED TO SPRING LINE.
8. BODY OF MANHOLE SHALL BE POURED IN ONE CONTINUOUS OPERATION EXCEPT THAT A CONSTRUCTION JOINT WITH A LONGITUDINAL KEYWAY MAY BE PLACED AT SPRING LINE.
9. THICKNESS OF THE DECK SHALL VARY WHEN NECESSARY TO PROVIDE A LEVEL SEAT BUT SHALL NOT BE LESS THAN THE TABULAR VALUES OF F SHOWN ON TABLE, SHEET 1.
10. IF LATERALS ENTER ON BOTH SIDES OF MANHOLE, SHAFT SHALL BE LOCATED ON SIDE RECEIVING THE SMALLER LATERAL.
11. STEPS SHALL CONFORM TO SPPWC 635 OR 636. UNLESS OTHERWISE SHOWN, STEPS SHALL BE UNIFORMLY SPACED 350 mm (14") TO 375 mm (15") OC. THE LOWEST STEP SHALL NOT BE MORE THAN 600 mm (24") ABOVE THE INVERT.
12. THE FOLLOWING CRITERIA SHALL BE USED FOR THIS MANHOLE:
  - A. THIS STANDARD PLAN IS USED WHEN SPPWC 320 IS INADEQUATE.  
MAIN LINE = 900 mm (36") INSIDE DIAMETER OR LARGER.
  - B. LATERAL = 300 mm (12") TO 3600 mm (144") INSIDE DIAMETER; HOWEVER, THE INSIDE DIAMETER SHALL NOT EXCEED THE INSIDE DIAMETER OF THE MAIN LINE.

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

**MANHOLE PIPE TO PIPE  
(LARGE SIDE INLET)**

STANDARD PLAN  
METRIC

**322-1**

SHEET 3 OF 4

13. MANHOLE FRAME AND COVER SHALL CONFORM TO SPPWC 630 UNLESS OTHERWISE SHOWN.
14. MANHOLE SHAFT SHALL CONFORM TO SPPWC 324 UNLESS OTHERWISE SHOWN.
15. WHERE A MANHOLE SHAFT – 900 mm (36") WITHOUT REDUCER IS SPECIFIED REFER TO SPPWC 326.
16. WHERE A PRESSURE MANHOLE SHAFT – WITH ECCENTRIC REDUCER IS SPECIFIED REFER TO SPPWC 328.
17. WHERE A PRESSURE MANHOLE SHAFT – 914 mm (36") WITHOUT REDUCER IS SPECIFIED REFER TO SPPWC 329.
18. THE FOLLOWING SPPWC ARE INCORPORATED HEREIN:
  - 324 MANHOLE SHAFT – WITH ECCENTRIC REDUCER
  - 326 MANHOLE SHAFT – 900 mm (36") WITHOUT REDUCER
  - 328 PRESSURE MANHOLE SHAFT – WITH ECCENTRIC REDUCER
  - 329 PRESSURE MANHOLE SHAFT – 914 mm (36") WITHOUT REDUCER
  - 630 610 mm (24") MANHOLE FRAME AND COVER
  - 633 914 mm (36") MANHOLE FRAME AND COVER
  - 635 STEEL STEP
  - 636 POLYPROPYLENE PLASTIC STEP

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

**MANHOLE PIPE TO PIPE  
(LARGE SIDE INLET)**

STANDARD PLAN  
METRIC

**322-1**

SHEET 4 OF 4