



**NOTES:**

1. MANHOLES TO BE CONSTRUCTED IN ACCORDANCE WITH AASHTO M-199 (ASTM C 478) UNLESS OTHERWISE SHOWN ON PLANS OR NOTED IN THE STANDARD SPECIFICATIONS.
2. HANDHOLES IN ADJUSTMENT SECTION SHALL HAVE 3' MIN. CLEARANCE. STEPS IN MANHOLE SHALL HAVE 6" MIN. CLEARANCE. FOR DETAILS SHOWING GRADE RINGS, LADDER, STEPS, HANDHOLDS, AND TOP SLAB SEE STANDARD PLAN SS - 160 "MISCELLANEOUS MANHOLE DETAILS".
3. ALL REINFORCED CAST IN PLACE CONCRETE SHALL BE CLASS 4000. NON-REINFORCED CONCRETE IN CHANNEL AND SHELF SHALL BE CLASS 3000. ALL PRECAST CONCRETE SHALL BE CLASS 4000.
4. PRECAST BASES SHALL BE FURNISHED WITH CUTOUTS OR KNOCKOUTS WITH A WALL THICKNESS OF 2" MIN.
5. MAXIMUM HOLE SIZE IS 36" FOR 48" MANHOLE, 42" FOR 54" MANHOLE; DISTANCE BETWEEN HOLES IS 8" MIN. MAXIMUM HOLE SIZE IS 60" FOR 72" MANHOLE AND 84" FOR 96" MANHOLE; DISTANCE BETWEEN HOLES IS 12" MIN.
6. ALL BASE REINFORCING STEEL SHALL HAVE A MINIMUM YIELD STRENGTH OF 60,000 AND BE PLACED IN THE UPPER HALF OF THE BASE WITH 1" MIN. CLEARANCE.
7. NPC SEALS OR APPROVED EQUAL AT ALL JOINTS.
8. KOR-N-SEAL BOOTS OR APPROVED EQUAL REQUIRED FOR ALL CONNECTIONS.
9. CHANNEL CONSTRUCTED FOR SANITARY SEWER MANHOLES ONLY. FOR STORM DRAIN MANHOLES LEAVE FLAT INVERT ONE FOOT BELOW OUTLET PIPE OUTFLOW.
10. FOR END OF LINE MANHOLE LOCATE FRAME AND LID OVER OUTFALL LINE. FOR INLINE MANHOLES LOCATE FRAME AND LID OVER UPSTREAM LINE.
11. MANHOLE FRAME TO CENTERED OVER FLOW THROUGH.
12. GROUT KOR-N-SEAL BOOTS FLUSH TO MANHOLE.
13. FOUNDATION MATERIAL TO BE PLACED AS REQUIRED AND AS DIRECTED BY THE ENGINEER.

DIA.	WALL THICKNESS	BASE THICKNESS	MAXIMUM KNOCKOUT SIZE	MINIMUM DISTANCE BETWEEN KNOCKOUTS	BASE REINFORCING STEEL SQ. IN/FT IN EACH DIRECTION	
					INTEGRAL BASE	SEPARATE BASE
48"	4"	6"	36"	8"	0.15	0.23
54"	4 1/2"	8"	42"	8"	0.19	0.19
60"	5"	8"	48"	8"	0.25	0.25



**FLAT TOP SANITARY SEWER MANHOLE**

STANDARD PLAN:  
**SS - 030**

CITY ENGINEER APPROVAL:

Longview: **C.B.**

DATE: **FEB. 2007**

Kelso: **S.Z.**