



NOTES:

1. MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH AASHTO M199 UNLESS OTHERWISE SHOWN ON PLANS OR NOTED IN THE STANDARD SPECIFICATIONS.
2. HANDHOLDS IN ADJUSTMENT SECTION SHALL HAVE 3" MIN. CLEARANCE. STEPS IN MANHOLE SHALL HAVE 6" MIN. CLEARANCE. SEE STD. DTL., D-15, "MANHOLE DETAILS." HANDHOLDS SHALL BE PLACED IN ALTERNATING GRADE RINGS OR LEVELING BRICK COURSE WITH MIN. OF ONE HANDHOLD BETWEEN THE LAST STEP AND THE TOP OF THE MANHOLE.
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. KNOCKOUTS SHALL HAVE WALL THICKNESS OF 2" MIN. UNUSED KNOCKOUTS NEED NOT BE GROUTED IF WALL IS LEFT INTACT. PIPES SHALL BE INSTALLED ONLY IN FACTORY KNOCKOUTS UNLESS OTHERWISE APPROVED BY THE ENGINEER.
5. KNOCKOUT OR CUTOUT HOLE SIZE SHALL EQUAL PIPE OUTER DIAM. PLUS MANHOLE WALL THICKNESS. MAX. HOLE SIZE SHALL BE 60" FOR 72" MANHOLE, 84" FOR 96" MANHOLE. MIN. DISTANCE BETWEEN HOLES SHALL BE 12".
6. MANHOLE RINGS AND COVERS SHALL BE IN ACCORDANCE WITH SEC. 7.05 OF THE STANDARD SPECIFICATIONS. MATING SURFACES SHALL BE FINISHED TO ASSURE NON-ROCKING FIT WITH ANY COVER POSITION.
7. ALL BASE REINFORCING STEEL SHALL HAVE A MIN. YIELD STRENGTH OF 60,000 PSI AND BE PLACED IN THE UPPER HALF OF THE BASE WITH 1" MIN. CLEARANCE.
8. FOR HEIGHTS OF 12' OR LESS, MIN. SOIL BEARING VALUE SHALL EQUAL 3,300 POUNDS PER SQUARE FOOT. FOR HEIGHTS OVER 12', MIN. SOIL BEARING VALUE SHALL EQUAL 3,800 POUNDS PER SQUARE FOOT.
9. FOR DETAILS SHOWING GRADE RING, LADDER, STEPS, HANDHOLDS, AND TOP SLABS, SEE STD. DTL. D-21.
10. SEE THE STANDARD SPECIFICATIONS SEC. 7-05.3 FOR JOINT REQUIREMENTS.
11. MORTAR SHALL BE PLACED BETWEEN EACH LEVEL OF ADJUSTING RINGS, TOP OF TOP SLAB, AND BOTTOM OF IRON RING.

REINFORCING STEEL (FOR SEPARATE BASES ONLY)

0.23 SQ. IN./FT. IN EACH DIRECTION FOR 48" DIAM.
0.19 SQ. IN./FT. IN EACH DIRECTION FOR 54" DIAM.
0.25 SQ. IN./FT. IN EACH DIRECTION FOR 60" DIAM.
0.35 SQ. IN./FT. IN EACH DIRECTION FOR 72" DIAM.
0.39 SQ. IN./FT. IN EACH DIRECTION FOR 96" DIAM.

REINFORCING STEEL (FOR PRECAST BASE & INTEGRAL RISER ONLY)

0.15 SQ. IN./FT. IN EACH DIRECTION FOR 48" DIAM.
0.19 SQ. IN./FT. IN EACH DIRECTION FOR 54" DIAM.
0.25 SQ. IN./FT. IN EACH DIRECTION FOR 60" DIAM.
0.24 SQ. IN./FT. IN EACH DIRECTION FOR 72" DIAM.
0.29 SQ. IN./FT. IN EACH DIRECTION FOR 96" DIAM.

City of Bellevue

SURFACE WATER UTILITY

TITLE

MANHOLE TYPE 3
48", 54", 60", 72" & 96"

NO. D-19