



* FOR MANHOLES GREATER THAN 12' DEEP, MANHOLE SHALL BE 5' INSIDE DIAMETER

BEDDING. SCREENED GRAVEL AND/OR CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATERIAL AND MEETING ASTM C-33 STONE SIZE No. 67.

100% PASSING	1 INCH SCREEN
90-100% PASSING	3/4 INCH SCREEN
20-55% PASSING	3/8 INCH SCREEN
0-10% PASSING	#4 SIEVE
0-5% PASSING	#8 SIEVE

MANHOLE SPECIFICATIONS

1. ALL MANHOLE COMPONENT PARTS SHALL HAVE ADEQUATE SPACE, STRENGTH AND LEAKPROOF QUALITIES CONSIDERED NECESSARY FOR THE INTENDED SERVICE REQUIREMENTS AND CONFIGURATIONS, AND SHALL BE AS SHOWN ON THE DRAWING. MANHOLES MAY BE AN ASSEMBLY OF PRECAST SECTIONS, WITH OR WITHOUT STEEL REINFORCEMENTS, WITH ADEQUATE JOINTING OR CONCRETE CAST MONOLITHICALLY IN PLACE WITH OR WITHOUT REINFORCEMENT, IN ANY APPROVED MANHOLE. THE COMPLETE STRUCTURE SHALL BE OF SUCH MATERIAL AND QUALITY AS TO WITHSTAND LOADS OF 8 TONS (H-20 LOADING) WITHOUT FAILURE AND PREVENT LEAKAGE IN EXCESS OF ONE GALLON PER DAY PER VERTICAL FOOT OF MANHOLE, CONTINUOUSLY, FOR THE LIFE OF THE STRUCTURE. A PERIOD GENERALLY IN EXCESS OF 25 YEARS IS TO BE UNDERSTOOD IN BOTH CASES.
2. BARRELS AND CONE SECTIONS SHALL BE PRECAST REINFORCED OR ON-REINFORCED CONCRETE, OR Poured IN PLACE REINFORCED OR NON-REINFORCED CONCRETE.
3. PRECAST CONCRETE BARREL SECTIONS, CONES AND BASES SHALL CONFORM TO ASTM C-478.
4. BASE SECTIONS SHALL BE MONOLITHIC TO A POINT 6' ABOVE THE CROWN OF THE INCOMING PIPE, AND SHALL BE PRECAST REINFORCED CONCRETE OR PRECAST NON-REINFORCED CONCRETE.
5. LEAKAGE TEST SHALL BE PERFORMED IN ACCORDANCE WITH THE SPECIFICATIONS.
6. INVERTS AND SHELVES. MANHOLES SHALL HAVE A BRICK PAVED SHELF AND INVERTS CONSTRUCTED TO CONFORM TO THE SIZE OF PIPE AND FLOW AT CHANGES IN DIRECTION. THE INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST RADIUS POSSIBLE TANGENT TO THE CENTER LINE OF THE SEWER PIPES. SHELVES SHALL BE CONSTRUCTED TO THE ELEVATION OF THE HIGHEST PIPE CROWN AND SLOPE TO DRAIN TOWARD THE FLOWING THROUGH CHANNEL. UNDERLAYMENT OF INVERT AND SHELF SHALL CONSIST OF BRICK MASONRY.
7. FRAMES AND COVERS. MANHOLE FRAMES AND COVERS SHALL BE OF HEAVY DUTY DESIGN AND PROVIDE A 30-INCH CLEAR OPENING. A 3-INCH (MINIMUM HEIGHT) LETTER "S" FOR SEWERS OR "D" FOR DRAINS SHALL BE PLAINLY CAST INTO THE CENTER OF EACH COVER.
8. BEDDING. SCREENED GRAVEL AND/OR CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATTER AND MEETING ASTM C33.

8.1. 100% PASSING	1 INCH SCREEN
8.2. 90-100% PASSING	3/4 INCH SCREEN
8.3. 20-55% PASSING	3/8 INCH SCREEN
8.4. 0-10% PASSING	#4 SIEVE
8.5. 0-5% PASSING	#8 SIEVE

 WHERE ORDERED BY THE ENGINEER TO STABILIZE THE BASE, SCREENED GRAVEL OR CRUSHED STONE 1/2 INCH TO 1-1/2 INCH SHALL BE USED.
9. CONCRETE FOR DROP SUPPORT AND CAST-IN-PLACE SHELVES SHALL CONFORM TO THE REQUIREMENT FOR CLASS A (3000#) CONCRETE OF THE NH DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATION AS FOLLOWS:

9.1. CEMENT:	6.5 BAGS PER CUBIC YARD
9.2. WATER:	5.23 GALLONS PER BAG CEMENT
9.3. MAX. SIZE OF AGGREGATE:	1 INCH
10. FLEXIBLE JOINT. A FLEXIBLE JOINT SHALL BE PROVIDED WITHIN THE FOLLOWING DISTANCES:

10.1. RCP & CI PIPE, ALL SIZES	40 FEET
10.2. VC PIPE, UP THROUGH 12" DIA.	18 FEET
10.3. VC PIPE, LARGER THAN 12" DIA.	36 FEET
10.4. DI PIPE	NO FLEXIBLE JOINT REQUIRED
10.5. PVC PIPE, UP THROUGH 15" DIA.	NO FLEXIBLE JOINT REQUIRED
11. SHALLOW MANHOLE. IN LIEU OF A CONE SECTION, WHEN MANHOLE DEPTH IS LESS THAN 6 FEET, A REINFORCED CONCRETE SLAB COVER MAY BE USED HAVING AN ECCENTRIC ENTRANCE OPENING AND CAPABLE OF SUPPORTING H-20 LOADS.
12. MANHOLES SHALL NOT BE PROVIDED WITH LADDER STEPS OR RUNGS.
13. MANHOLE TESTING SHALL BE 10" OF MERCURY FOR 10 MINUTES WITH NO MORE THAN A 1" DROP. UTILIZING A GAUGE READING IN $\frac{1}{2}$ " INCREMENTS.



DETAIL S-3
STANDARD SEWER MANHOLE

REV: 0620 BY: PEK SCALE: NTS