

MANHOLE NOTES:

1. IT IS THE INTENTION THAT THE MANHOLE, INCLUDING ALL COMPONENT PARTS, HAVE ADEQUATE SPACE, STRENGTH, AND LEAKPROOF QUALITIES CONSIDERED NECESSARY BY THE NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES (NHDES) FOR THE INTENDED SERVICE. SPACE REQUIREMENTS AND CONFIGURATIONS SHALL BE AS SHOWN ON THE DRAWING. MANHOLES MAY BE AN ASSEMBLY OF PRECAST SECTIONS, WITH STEEL 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 TO 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 CONCRETE (4,000psi AT 28-DAY).
3. CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQ. IN. PER LINEAR FT. IN ALL SECTIONS AND SHALL BE PLACED IN THE CENTER THIRD OF THE WALL.
4. THE TONGUE OR THE GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ. IN. PER LINEAR FT.
5. BITUMINOUS WATERPROOF COATING SHALL BE APPLIED TO ENTIRE EXTERIOR OF MANHOLE.
6. HORIZONTAL JOINTS SHALL BE SEALED FOR WATER TIGHTNESS USING A DOUBLE ROW OF ELASTOMERIC (KENT SEAL OR EQUAL) OR MASTIC SEALANT.
7. EACH CASTING TO HAVE LIFTING HOLES CAST IN. LIFTING HOLES SHALL BE WATER PLUGGED PRIOR TO BACKFILL.
8. PRECAST CONCRETE BARREL SECTIONS, CONES, AND BASES SHALL CONFORM TO ASTM C478.
9. LEAKAGE TEST SHALL BE PERFORMED IN ACCORDANCE WITH THE SPECIFICATIONS. INVERT AND SHELF TO BE PLACED AFTER LEAKAGE TEST.
10. INVERTS AND SHELVES: MANHOLES SHALL HAVE A BRICK PAVED SHELF AND INVERT, CONSTRUCTED TO CONFORM TO THE SIZE OF PIPE AND FLOW. CARE SHALL BE TAKEN TO INSURE THAT THE BRICK INVERT IS A SMOOTH CONTINUATION OF THE SEWER INVERT. INVERT BRICKS SHALL BE LAID ON EDGE. AT CHANGES IN DIRECTION, THE INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST POSSIBLE TANGENT TO THE CENTER LINE OF THE SEWER PIPES. SHELVES SHALL BE CONSTRUCTED TO AN ELEVATION OF 1" ABOVE THE HIGHEST PIPE CROWN AND SLOPE TO DRAIN TOWARD THE FLOWING THROUGH CHANNEL. UNDERLAYMENT OF INVERT AND SHELF SHALL CONSIST OF BRICK MASONRY.
11. BEDDING: SCREENED GRAVEL AND/OR CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATTER AND MEETING ASTM C33. STONE SIZE NO. 67.

100% PASSING 1 INCH SCREEN

0-10% PASSING #4 SIEVE

90-100% PASSING 3/4 INCH SCREEN

0- 5% PASSING #8 SIEVE

20- 55% PASSING 3/8 INCH SCREEN

WHERE ORDERED BY THE ENGINEER TO STABILIZE THE BASE, SCREENED GRAVEL OR CRUSHED STONE 1-1/2 INCH TO 1/2 INCH SHALL BE USED.
12. SHALLOW MANHOLE: IN LIEU OF A CONE SECTION, WHEN MANHOLE IS LESS THAN 6 FEET, A REINFORCED CONCRETE SLAB COVER HAVING AN ECCENTRIC ENTRANCE AND CAPABLE OF SUPPORTING H-20 LOADS MAY BE USED.
13. FLEXIBLE JOINT: A FLEXIBLE JOINT SHALL BE PROVIDED WITHIN THE FOLLOWING DISTANCES:

RCP AND CI PIPE - ALL SIZES - 48"

AC AND VC PIPE - UP THROUGH 12" DIA. - 18"

AC AND VC PIPE - LARGER THAN 12" DIA. - 36"

DI PIPE - NONE REQUIRED

PVC (ASTM 3034) - UP THROUGH 15" DIA. - NONE REQUIRED

PVC (ASTM F679) - LARGER THAN 15" DIA. - 48"/60"


PVC (ASTM F789) - ALL SIZES - 48"/60"

ABS (ASTM D2680) - ALL SIZES - SAME AS VC ABOVE.
14. MANHOLE CASTINGS SHALL COMPLY WITH ASTM A48.
15. BRICK MASONRY SHALL COMPLY WITH ASTM C32.
16. MORTAR SHALL CONFORM WITH REQUIREMENTS SPECIFIED IN NH DES ENV-WQ 704.13(C).
17. SPECIFICATIONS: ADDITIONAL CONSTRUCTION SPECIFICATIONS ARE INCLUDED IN THE PROJECT MANUAL. THESE STANDARD MANHOLE DRAWINGS ARE NOT COMPLETE WITHOUT THESE SPECIFICATIONS.
18. CITY OF PORTSMOUTH - STEPS SHALL NOT BE PROVIDED.
19. CITY OF PORTSMOUTH - FRAME AND COVER FOR SMH's SHALL BE 30" DIAMETER DUAL HINGED CAST IRON. COVERS WITHIN CITY ROADWAY SHALL HAVE THE CITY LOGO CASTING. COVERS NOT IN THE ROADWAY SHALL BE A STANDARD DUAL HINGED COVER WITH "SEWER" CAST.
20. CONTRACTOR SHALL MAINTAIN ACCESS TO ALL SEWER STRUCTURES THROUGHOUT THE PROJECT. AT THE CITY REQUEST, THE CONTRACTOR SHALL PROVIDE ADEQUATE ACCESS TO ANY STRUCTURE WHERE THEIR WORK IMPEDES ACCESS. THIS MAY INCLUDE EXCAVATING FOR BURIED STRUCTURES.
21. THERE SHALL BE A 0.10' (MIN.) ELEVATION DIFFERENCE BETWEEN THE INVERT IN AND INVERT OUT.

REFERENCES:

CITY OF PORTSMOUTH STANDARD TECHNICAL SPECIFICATIONS

DEPARTMENT OF PUBLIC WORKS
CITY OF PORTSMOUTH, NH
680 PEVERLY HILL ROAD
603-427-1530



DATE: 05/09/2025

SCALE: NONE

PROJ. NO.: N/A

APVD BY: PHR

PROJECT: CITY OF PORTSMOUTH STANDARD DETAILS

TITLE: SEWER MANHOLE

SHEET:

S-003B