

GENERAL NOTES FOR PRECAST CIRCULAR OR RECTANGULAR MAINTENANCE HOLES:

1. PRECAST MAINTENANCE HOLES TO BE SUPPLIED BY A MANUFACTURER CERTIFIED UNDER THE OCPA PLANT PREQUALIFICATION PROGRAM (STD. DWG. 2-0-1)
2. PROVIDE MONOLITHIC BASE SECTIONS FOR ALL MAINTANANCE HOLES UNLESS ALTERNATE APPROVED AND SPECIFIED ON PROJECT SPECIFIC REQUIREMENTS.
3. USE ALTERNATIVE BASE, TOP, PIPE SUPPORT OR CONNECTOR, STEPS, FRAME AND COVER AND/OR BENCHING ONLY WHERE APPROVED AND SPECIFIED ON PROJECT SPECIFIC REQUIREMENTS.
4. PROVIDE BASE EXTENSIONS FOR UPLIFT PREVENTION ON PRECAST MAINTENANCE HOLES 1200mm DIAMETER OR GREATER WHERE REQUIRED, REFER TO CONTRACT DRAWINGS AND SPECIFICATIONS AND GEOTECHNICAL REPORT FOR PROJECT SPECIFIC REQUIREMENTS.
5. SPECIAL BASE DESIGN REQUIRED FOR DEPTHS GREATER THAN 9.0 m.
6. FOR PIPE SIZE LESS THAN 600mmØ NON PRESSURE DESIGN IS PERMITTED. PIPE SIZES EQUAL TO OR GREATER THAN 600mmØ SHALL BE DESIGNED TO PRESSURE. CHAMBERS FOR PIPE SIZES EQUAL TO OR GREATER THAN 600mmØ SHALL USE PRESSURE DESIGN AS PER AMERICAN CONCRETE INSTITUTE (ACI) 350-06 CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES.
7. APPROVED ADJUSTMENT UNITS AND APPROVED FRAME AND COVER SYSTEMS TO BE INSTALLED AS PER MANUFACTURER'S INSTRUCTIONS (STD. DWGS. SECTION 2-6).
8. FILL LIFTING HOLES WITH 1:3 NON SHRINK MORTAR MIX.
9. FROST STRAPS SHALL BE INSTALLED AT ALL RISER, TOP AND BASE SECTION JOINTS ON ALL PRECAST MAINTENANCE HOLES TO A MAXIMUM DEPTH OF 3.0m FROM FINISHED GRADE. INTERNAL FROST STRAP TO BE TYPICAL (STD. DWG. 2-6-16).
10. VENT PIPES SHALL BE REQUIRED AT EVERY THIRD MAINTENANCE HOLE ON SECTIONS OF SANITARY SEWERS WITH WATERTIGHT COVERS IN EASEMENTS, INSTALLATIONS WITHIN FLOOD PLAINS OR AREAS WITH HIGH LEVELS OF HYDROGEN SULFIDE. REFER TO PROJECT SPECIFIC REQUIREMENTS (STD. DWG. 2-5-22).
11. WATERPROOF MEMBRANE SHALL BE APPLIED EXTERNALLY AROUND ALL RISER, GRADE ADJUSTMENT UNITS, TOP AND BASE SECTION JOINTS ON ALL MAINTENANCE HOLES. WATERPROOF MEMBRANE TO BE "MEL-ROL" BY W.R. MEADOWS OF MILTON ONTARIO OR APPROVED EQUAL. EXTEND COMPLETELY AROUND ALL JOINTS WITH A MINIMUM 300mm WIDE STRIP. WATERPROOF ABOVE GRADE SURFACES WITH "CEM-KOTE FLEX ST" BY W.R. MEADOWS OF MILTON ONTARIO OR APPROVED EQUAL (STD. DWG. 2-5-2, 2-5-25). APPLY DETAIL STRIP ON ALL INSIDE OR OUTSIDE CORNER JOINTS BENEATH WATERPROOF MEMBRANE, C/W PRIMER AND SURFACE PREPARATION AS PER MANUFACTURER'S SPECIFICATIONS. DETAIL STRIP TO BE "MEL-ROL DETAIL STRIP" BY W.R. MEADOWS OF MILTON ONTARIO OR APPROVED EQUAL (STD. DWG. 2-5-25).
12. FRP SAFETY PLATFORMS (TYPICAL), OR ALUMINUM SAFETY PLATFORMS, WHERE REQUIRED, TO BE INSTALLED IN MAINTENANCE HOLES 1200mm DIAMETER OR GREATER (STD DWGS. SECTION 2-6). PLATFORMS TO BE ANCHORED USING 316 SS HILTI KWIK BOLTS OR ENGINEER APPROVED EQUAL. ANCHORS OR PILOT HOLES SHALL NOT PENETRATE ENTIRE WALL THICKNESS.
13. FRP LADDERS (TYPICAL), OR ALUMINUM LADDERS, TO BE INSTALLED IN ALL MAINTENANCE HOLES 1200mm DIAMETER OR GREATER (STD DWGS. SECTION 2-6). LADDERS TO BE ANCHORED USING 316 SS HILTI KWIK BOLTS OR ENGINEER APPROVED EQUAL. ANCHORS OR PILOT HOLES SHALL NOT PENETRATE ENTIRE WALL THICKNESS.
14. BENCHING TO BE CONSTRUCTED TO THE OBVERT OF THE PIPE IN ALL CASES. 15MPa CONCRETE UNLESS OTHERWISE INDICATED (STD DWG. 2-5-20). BENCHING AS PER OPSS PROV 1350, MATERIAL SPECIFICATION FOR CONCRETE MATERIALS AND PRODUCTION.
15. WHEN LADDER SECTIONS ARE USED IN NEW PRECAST RISER SECTIONS, LADDERS SHALL NOT EXTEND BEYOND TOP OR BOTTOM PLANE OF PRECAST RISER SECTIONS TO FACILITATE INSTALLATION IN FACTORY. LADDER SECTIONS SHALL BE JOINED AS PER STD. DWGS. 2-6-9 & 2-6-10 WITH SPLICE. LADDER SHALL TERMINATE AT THE TOP PRECAST SECTION WITH A STEP TO BE INSTALLED TO MEET 300mm SPACING REQUIREMENT BETWEEN SURFACE AND TOP OF LADDER. IF COMPOSITE ADJUSTMENT UNIT IS UTILIZED THEN THE TOP PRECAST RISER SECTION SHALL HAVE LADDER INSTALLED AFTER INSTALLATION AND THE TOP OF LADDER SHALL EXTEND TO WITHIN 300mm OF SURFACE PLANE.
16. ALL CHAMBERS LOCATED OUTSIDE OF R.O.W. OR WITHIN PARK SETTINGS MUST HAVE A 1500mm HIGH SANITARY CHAMBER MARKING POST (GREEN IN COLOUR), WITHIN 600mm OF CHAMBER COVER (STD. DWG. 2-5-24). MARKERS SHALL NOT BE INSTALLED IF ERECTION RESULTS IN AN IMPEDIMENT TO PEDESTRIAN OR VEHICULAR TRAFFIC, NOT INCLUSIVE OF MAINTENANCE EQUIPMENT.
17. FOR NON PRESSURE DESIGN CONNECTION OF FLEXIBLE, RIGID, OR SEMI-RIGID PIPE TO SANITARY CHAMBERS, A FLEXIBLE RUBBER WATERTIGHT SEAL SHALL BE USED. THE SEAL DESIGN TO MATCH SPECIFIC PIPE MATERIAL AND DIAMETER. EITHER CAST-IN STYLE OR COMPRESSION INSERT STYLE SEALS MAY BE UTILIZED AS PER PROJECT SPECIFIC DESIGN. FORM PRODUCED OR CORED WALL OPENINGS SHALL BE PROVIDED BY PRECAST MANUFACTURER TO MEET REQUIREMENTS OF FLEXIBLE SEAL MANUFACTURER AND PROJECT SPECIFIC DESIGN. FOR PVC PIPE CONNECTIONS, THE O.D. OF THE INTERNALLY EXPOSED PIPE SHALL BE TREATED AFTER INSTALLATION, TO ALLOW GROUT TO ADHERE TO THE ANNULAR SPACE INSIDE OF CHAMBER (STD. DWG. 2-5-15, 2-5-16).
18. ON ALL CHAMBERS WITH PIPE CONNECTIONS GREATER THAN 300mm, OR LOCATED IN PROXIMITY TO INDUSTRIAL, COMMERCIAL OR INSTITUTIONAL AREAS, ALL INTERNAL HORIZONTAL SURFACES ON UNDERSIDE OF PRECAST FLAT CAPS OR TRANSITION SECTIONS TO BE PROVIDED WITH MIC PROTECTION (CEM-KOTE FLEX CR OR APPROVED EQUAL).
19. ALL CHAMBERS LOCATED OUTSIDE OF R.O.W. OR WITHIN PARK SETTINGS SHALL BE CONSTRUCTED SO THAT COVER SURFACE IS 150mm (MIN.) ABOVE FINISHED GRADE UNLESS OTHERWISE APPROVED BY PROJECT ENGINEER, OR IF THIS CREATES AN IMPEDIMENT TO PEDESTRIAN OR VEHICULAR TRAFFIC, NOT INCLUSIVE OF MAINTENANCE EQUIPMENT.

NOTE

1. GENERAL NOTES TO BE READ IN CONJUNCTION WITH ALL STANDARD DRAWINGS PERTAINING TO PRECAST CIRCULAR MAINTENANCE HOLES.



**PUBLIC WORKS
STANDARD DRAWING**

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APPROVED BY DRAWN BY

A.P. **AINLEY GROUP**

STD. DWG. NUMBER SCALE

2-5-1 N.T.S.

**NEW SANITARY SEWER CONSTRUCTION
GENERAL NOTES FOR PRECAST
MAINTENANCE HOLES**