



**NOTES:**

1. THIS DETAIL DEPICTS A TYPICAL BENCHING AND INVERT CHANNEL CONFIGURATION. IT IS IMPOSSIBLE TO DETAIL AND DESCRIBE ALL CONFIGURATIONS THAT WILL BE ENCOUNTERED/REQUIRED. THIS DETAIL IS INTENDED TO PROVIDE GENERAL GUIDELINES AND REQUIREMENTS FOR BENCHING AND INVERT CHANNEL CONSTRUCTION. THE CONTRACTOR SHALL ACCOMMODATE ALL EXISTING CONFIGURATIONS AND CONSTRUCT BENCHING AND INVERT CHANNELS TO THE SATISFACTION OF THE ENGINEER. ADJUSTMENTS AND REPAIRS TO THE BENCHING AND INVERT CHANNELS SHALL BE PERFORMED AS REQUIRED BY THE ENGINEER AT NO ADDITIONAL COST. ALL REPAIRS AND ADJUSTMENTS MUST BE MADE WITH AN APPROVED NON-SHRINK GROUT.
2. BENCHING AND INVERT CHANNELS SHALL BE PRECAST BY THE MANHOLE MANUFACTURER. FORMED AND POURED-IN-PLACE BENCHES AND INVERTS MAY BE APPROVED IN CERTAIN SITUATIONS BY THE ENGINEER AND SHALL BE USED WHERE SPECIFICALLY REQUIRED SUCH AS FOR A DOGHOUSE MANHOLE.

BENCHING AND INVERT CHANNELS SHALL BE CONSTRUCTED USING MINIMUM 4,000 PSI CONCRETE. ADD FIBER REINFORCING FOR POURED-IN-PLACE BENCHES/INVERTS. ELEVATIONS OF BENCHING AND CHANNELS SHALL BE AS DEFINED IN NOTES 4 THROUGH 7. AT LEAST 2 INCHES OF FALL SHALL BE PROVIDED ON THE TOP OF THE BENCHING FROM THE MANHOLE WALLS TO THE INVERT CHANNELS.

INVERT CHANNELS SHALL BE U-SHAPED CHANNELS FOLLOWING THE SHAPE AND DIAMETER OF THE CONNECTING SEWER PIPE FROM THE BOTTOM TO THE SPRINGLINE OF THE PIPE AND THEN EXTENDING VERTICAL TO THE REQUIRED HEIGHT. THUS, THE WIDTH OF THE TOP OF THE CHANNEL SHALL EQUAL THE CORRESPONDING SEWER DIAMETER. THE HEIGHT SHALL BE AS DEFINED IN THESE NOTES WITH THE MINIMUM HEIGHT IN ALL CASES EQUAL TO THE CORRESPONDING SEWER DIAMETER. INVERT CHANNELS SHALL BE SMOOTH, UNIFORM, FREE OF BURRS AND BRIARS THAT MAY CATCH DEBRIS, AND CONSTANTLY SLOPING FROM INLET SEWERS TO THE OUTLET SEWER.

3. CONSTRUCT INVERT CHANNEL FOR CONNECTING SEWERS WITH A CONSTANT CURVE FROM THE EDGE OF THE MANHOLE WALL TO THE MAIN INVERT CHANNEL. PROVIDE MAXIMUM CURVATURE SUCH THAT FLOW FROM CONNECTING SEWERS WILL FREELY DISCHARGE INTO THE MAIN INVERT CHANNEL AND ALL FLOWS WILL FREELY EXIT THE MANHOLE. CHANNEL SHALL BE CONSTANTLY SLOPING WITH THE MAXIMUM POSSIBLE SLOPE. SEE NOTES 2 AND 7.
4. ELEVATION "A" TO EQUAL THE CROWN ELEVATION OF SEWER "B".
5. ELEVATION "B" TO EQUAL THE CROWN ELEVATION OF SEWER "C".
6. ELEVATION "C" SHALL EQUAL AT LEAST THE INVERT CHANNEL ELEVATION AT THAT POINT PLUS THE DIAMETER OF SEWER "C". ADJUST THE ELEVATION UPWARD AS NECESSARY TO AT LEAST EXCEED THE BENCHING ELEVATION AT THE NEARBY MAIN INVERT CHANNEL.
7. ELEVATION "D" REPRESENTS THE ELEVATION OF THE INVERT CHANNEL FOR THE CONNECTING SEWER WHERE IT JOINS THE MAIN INVERT CHANNEL. IF SEWER "C" IS THE SAME SIZE AS SEWER "B", THE CHANNELS SHALL JOIN AT THE SAME ELEVATION WHEREVER POSSIBLE. IF SEWER "C" IS A SERVICE LATERAL, THE CONNECTING SEWER INVERT CHANNEL SHALL JOIN THE MAIN CHANNEL A MINIMUM OF 3 INCHES ABOVE THE MAIN CHANNEL WHEREVER POSSIBLE. ANY SUCH DROP TO THE MAIN CHANNEL SHALL BE SMOOTH AND ROUNDED SO THAT DEBRIS WILL FREELY DISCHARGE INTO THE MAIN CHANNEL.

**MOUNT PLEASANT WATERWORKS**  
TYPICAL MANHOLE BENCH & INVERT PLAN

APPROVED BY:

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