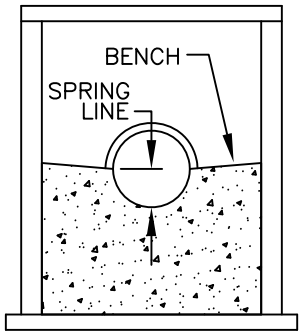
NOTES

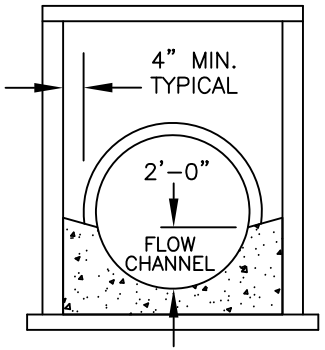
1. FLOW CHANNELS AND BENCHES SHALL BE CONSTRUCTED OF MD DEPT. OF TRANSPORTATION S.H.A. MIX NO. 3 CONCRETE.
2. FLOW CHANNELS SHALL BE SMOOTH FINISHED WHILE THE BENCHES SHALL BE BROOM FINISHED.
3. BENCHES SHALL HAVE A 1/4" PER FOOT FALL TOWARD THE CHANNEL.
4. THE FLOW CHANNEL INVERT SHALL FLOW AT ONE GRADE FROM ONE PIPE INVERT TO THE OTHER PIPE INVERT (IN STRUCTURES WITH ONLY TWO PIPES).
5. IN STRUCTURES WITH MORE THAN TWO PIPES THE MAIN FLOW CHANNEL SHALL FLOW AT ONE GRADE FROM THE INVERT OF THE OUTFALL PIPE TO THE INVERT OF THE NEXT LARGEST PIPE. ANY INFLOW PIPES THAT INTERSECT THIS MAIN FLOW CHANNEL AT AN ANGLE SHALL HAVE A FLOW CHANNEL ON A VERTICAL AND HORIZONTAL CURVE TO TIE INTO THE MAIN FLOW CHANNEL IN SUCH A WAY AS TO CREATE A SMOOTH TRANSITION AND OPTIMIZE FLOW. ALL FLOW CHANNELS SHALL BE A SMOOTH RADIUS OR ARCH SHAPE TO MATCH THE PIPES AT THEIR START AND END, WITH THE RADIUS CHANGING UNIFORMLY OVER THE CHANNEL LENGTH AS REQUIRED.
6. BENCHES SHALL BE FORMED AS A PART OF THE FLOW CHANNEL WITH THE PIPE DIAMETERS DETERMINING EACH BENCH STARTING AND ENDING HEIGHT. IF A PIPE IS 48" OR LESS IN DIAMETER THE BENCH SHALL ORIGINATE AT THE SPRING LINE OF THE PIPE. IF THE PIPE IS LARGER THAN 48" IN DIAMETER THE BENCH SHALL ORIGINATE AT 2'–0" ABOVE THE INVERT GRADE OF THE PIPE. THE BENCH SHALL BE CONSTRUCTED ALONG ONE GRADE FROM ONE PIPE BENCH HEIGHT TO THE NEXT PIPE BENCH HEIGHT.
7. WHERE INTERSECTING FLOW CHANNELS AND BENCHES FORM A NARROW POINT, NO LESS THAN A 3" RADIUS SHALL BE FORMED.
8. THE FLOW CHANNEL & BENCHES IN A TERMINAL INLET SHALL END AT THE OUTFALL PIPE AND ORIGINATE AT THE STUB OR KNOCKOUT OR THAT POINT ON THE INLET WALL INDICATED BY THE CITY ENGINEER. THE SLOPE OF THE FLOW CHANNEL & BENCHES IN A TERMINAL INLET WITH NO STUB OR KNOCKOUT WILL BE DEFINED BY A SLOPE OF 1" PER FOOT FALL OVER THE LENGTH OF THE FULLY FORMED CHANNEL AND BENCHES TO THE OUTFALL PIPE.
9. ALL PIPES SHALL BE SEALED TO THE STRUCTURE WALLS WITH HYDRAULIC CEMENT WHERE THEY PENETRATE THE STRUCTURE WALLS, BEFORE THE CONCRETE CHANNEL WORK IS INSTALLED.



(THIS PIPE < 48" ø)

SECTION AA

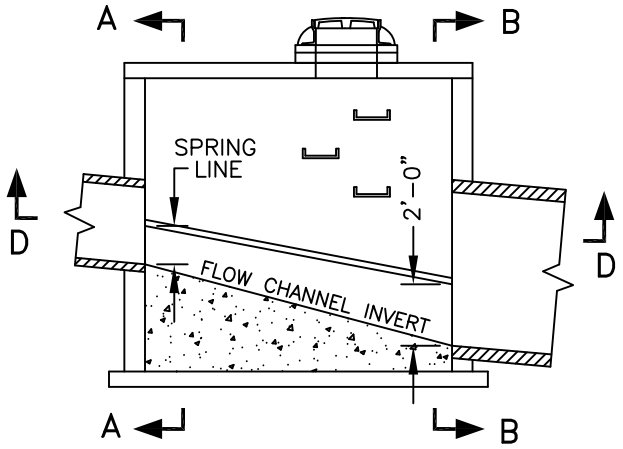
NO SCALE



(THIS PIPE > 48" ø)

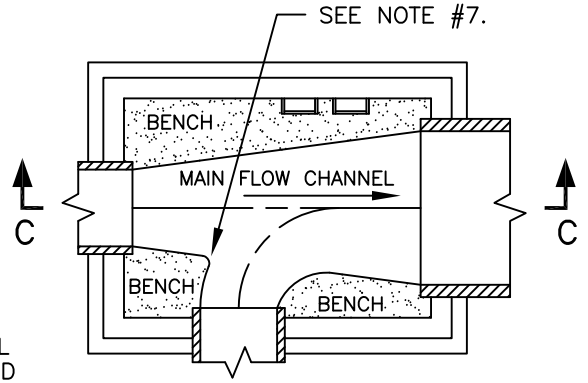
SECTION BB

NO SCALE



SECTION CC

NO SCALE



SECTION DD

NO SCALE

CITY OF HAGERSTOWN, MARYLAND – ENGINEERING AND INSPECTIONS DEPARTMENT

STORM DRAIN STANDARD DETAIL
STORM DRAIN STRUCTURES
FLOW CHANNELS

ISSUE DATE: 01–01–03	
REVISIONS	
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_____	_____

Plate SD-013