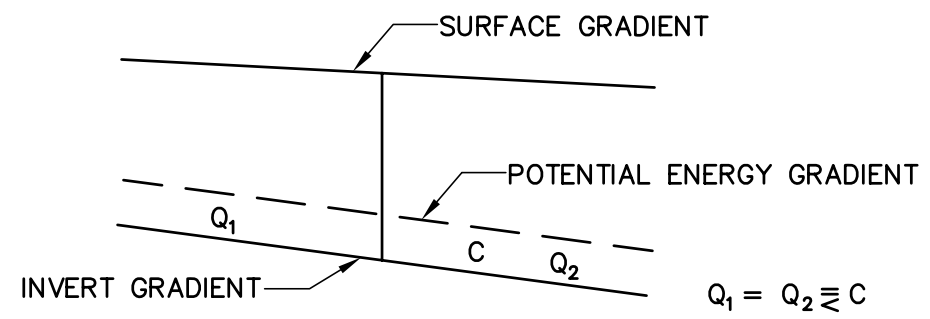


GRADIENT COMPARISON

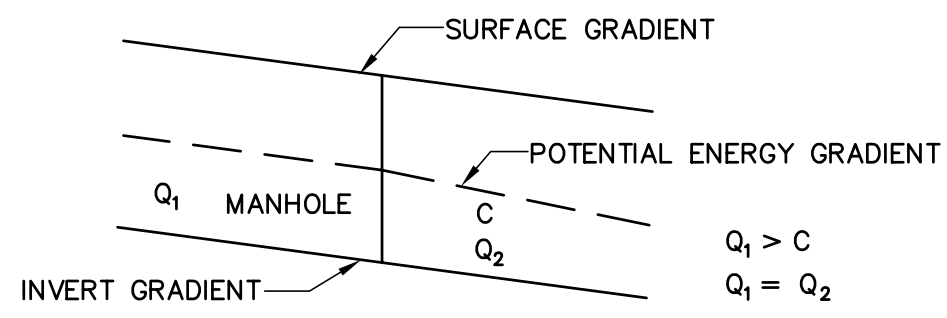
NOT TO SCALE

CITY OF NEW HAVEN DEPARTMENT OF ENGINEERING		DRIVE: K:\ENGINEER\DWG
RICHARD H. MILLER, P.E., L.S. 9886 CITY ENGINEER		FILE: CITYSTD\DETAILS\2009 DETAILS
		DATE: DEC. 1, 2009
		DRAWING NO.: STD-NH-34A



GRAVITY FLOW SEWERS

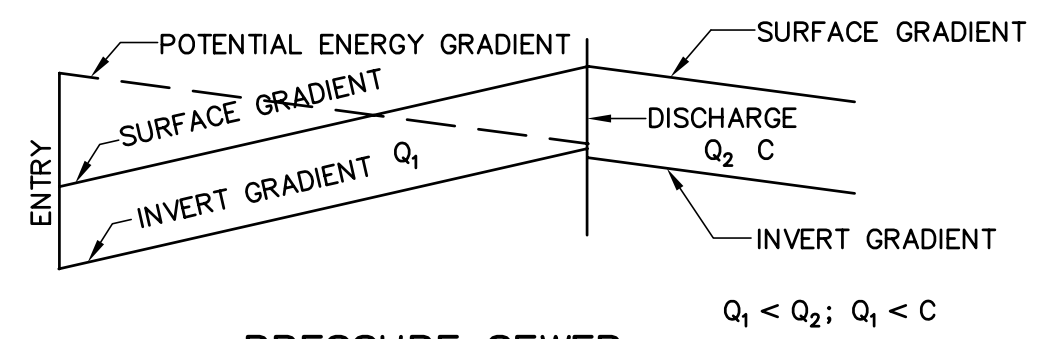
Q=RATE OF FLOW; C=PIPE CAPACITY @ FULL PIPE FLOW



SURCHARGE GRAVITY SEWER

Q=RATE OF FLOW; C=PIPE CAPACITY @ FULL PIPE FLOW

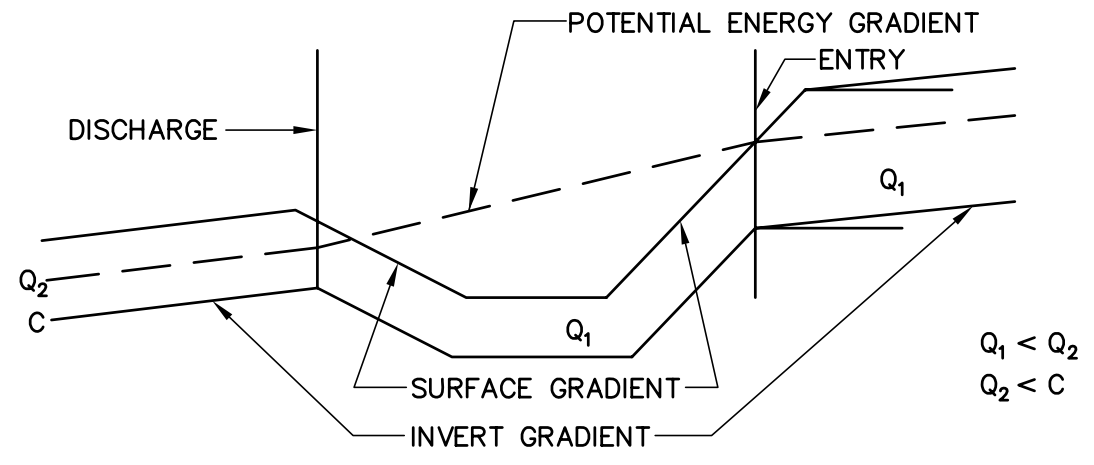
CASE NO. 1 - COMMON DIRECTION OF SLOPES



PRESSURE SEWER

Q=RATE OF FLOW; C=PIPE CAPACITY @ FULL PIPE FLOW

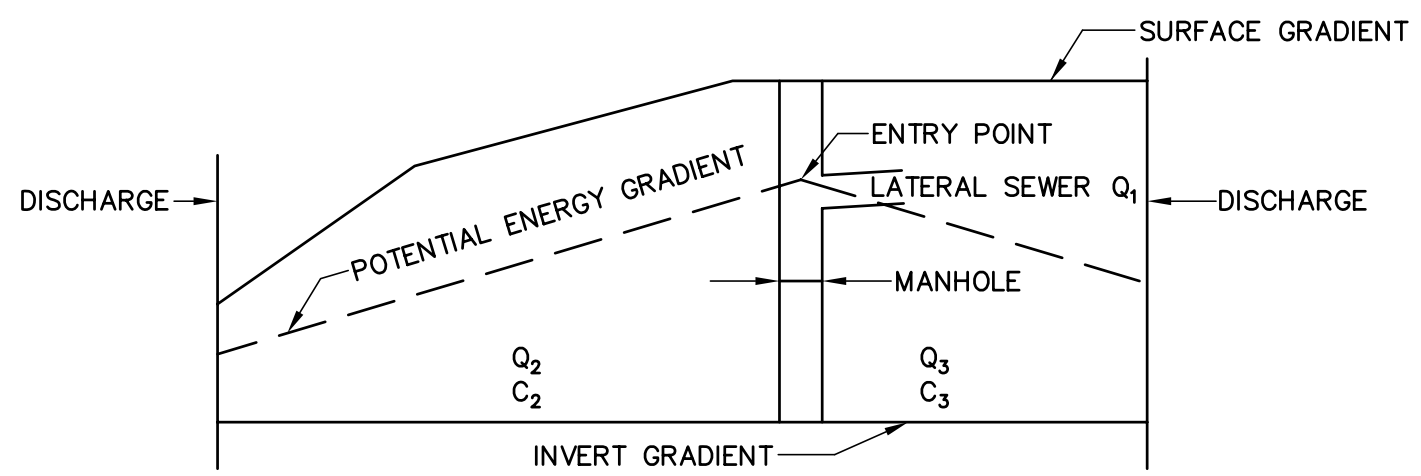
CASE NO. 2 - OPPOSING DIRECTION OF SLOPES



SAG OR SIPHON SEWERS

Q=RATE OF FLOW; C=PIPE CAPACITY @ FULL PIPE FLOW

CASE NO. 3 - POTENTIAL ENERGY GRADIENT SLOPES IN ONE DIRECTION; INVERT GRADIENT SLOPES IN TWO DIRECTIONS



COMBINATION SEWERS

Q=RATE OF FLOW; C=PIPE CAPACITY @ FULL PIPE FLOW

CASE NO. 4 - POTENTIAL ENERGY GRADIENT SLOPES IN TWO DIRECTIONS; INVERT GRADIENT SLOPES IN ONE DIRECTION