

"HEAD" REQUIRED TO SURGE 89.1 cfs TO POND H

SIMPLIFIED APPROACH: USE ORIFICE EQUATION

$$Q = CA(2gh)^{1/2}$$

$$\text{TOP OF GRATE} = 5421.42$$

$$\text{SD MANHOLE INV} = 5414.91$$

$$h_{\text{MH}} = 5421.42 - 5414.91$$

$$h_{\text{MH}} = 6.51$$

OPEN AREA CITY INLET GRATE

$$A_{\text{SINGLE}} = 3.93 \text{ SF}$$

$$A_{\text{DOUBLE}} = 7.80 \text{ SF}$$

SOLVE FOR h

SINGLE
GRATE

$$Q = 89.1 \text{ cfs} = .6(3.93 \text{ SF})(2gh)^{1/2}$$

$$(2gh)^{1/2} = 37.8$$

$$h = 22.2 \text{ FT} > 6.51 (h_{\text{MH}})$$

$\therefore$ NO GOOD

DOUBLE
GRATE

$$Q = 89.1 \text{ cfs} = .6(7.80 \text{ SF})(2gh)^{1/2}$$

$$(2gh)^{1/2} = 19.04$$

$$h = 5.6 \text{ FT} < 6.51 (h_{\text{MH}})$$

$\therefore$ USE DOUBLE GRATE

Bohannon & Huston



ENGINEERS PLANNERS PHOTOGRAMMETRISTS
SURVEYORS SOFTWARE DEVELOPERS

PROJECT NAME VALE PRADO U1 SHEET 1 OF 1
PROJECT NO. 20150013 BY SJS DATE 8/11/14
SUBJECT POND H CH'D _____ DATE _____