192 MILLBURY AVE, MILLBURY, MA

STORMWATER MANAGEMENT

STANDARD 3:

GROUNDWATER RECHARGE - 1982 Rawls Rate, Loamy Sand (A) = 2.41 in/hr.
Simple Dynamic Method
Proposed Redevelopment Impervious Area = 7,337 sf

Recharge Volume (ReVa) Required = Ia x 0.60"/12 = 7,337 x 0.60/12 = 367 cf

Annual Recharge provided in Infiltration Chamber Basins = 720 cf > 367 cf

STANDARD 4:

WATER QUALITY VOLUME – REQUIRED TREATMENT

High Rate of Infiltration: Use 1.0"
Impervious Area = 7,337 sf
Volume of Stormwater: V1 = 7,337 sf x 1.0" = 611 cf

Volume Storage in Stormwater Basins = 900 cf > 611 cf

TIME REQUIRED FOR BASINS P-1, P-2 & P-3 TO BE EMPTY

1982 Rawls Rate, Loamy Sand (A) = 2.41 in/hr.
Volume of Basin P-1 when full = 401 cf Surface Area = 200 sf
Volume of Basin P-2 when full = 499 cf Surface Area = 330 sf

$$P-1\ \ Chamber\ Drawdown\ T = \frac{401\ cf}{(2.41")\ (1'/12")\ (200\ sf)} = 10.0\ hrs < 72\ hrs$$

$$P-2\ \ Basin\ Drawdown\ T = \frac{499\ cf}{(2.41")\ (1'/12")\ (330\ sf)} = 7.53\ hrs < 72\ hrs$$

SUMMARY:

Standards 3 & 4 - Provided treatment of storm water runoff and volume of groundwater recharge exceeds the DEP Stormwater Management Guidelines.