998-05-83 **Gabriela Araujo*** (garaujo@math.unam.mx), Circuito Exterior s/n, Ciudad Universitaria, Coyoacn, 04510 Mxico D.F., D.F., Mexico, and **Marc Noy** and **Oriol Serra**. *A geometric construction of large vertex transitive graphs of diameter 2.*

The moore upper bound for the order $n(\Delta, 2)$ of graphs with maximum degree Δ and diameter 2 is $n(\Delta, 2) \leq \Delta^2 + 1$. The only general lower bound for vertex symmetric graphs is $n_{vt}(\Delta, 2) \geq \lfloor \frac{\Delta+2}{2} \rfloor \lceil \frac{\Delta+2}{2} \rceil$. Recently a construction of vertex transitive graphs of diameter 2, based on voltage graphs, with order $\frac{8}{9}(\Delta + \frac{1}{2})^2$ given by McKay, Miller and Širáň for $\Delta = (3q-1)/2$ and q a prime power congruent with 1 mod 4. We give an alternative geometric construction which provides vertex transitive graphs with the same parameters and, when q is a prime power not congruent to 1 modulo 4, it gives vertex transitive graphs of diameter 2 and order $\frac{1}{2}(\Delta + 1)^2$. For $q = 4$, we obtain a vertex transitive graph of degree 6 and order 32. (Received February 11, 2004)