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| Dr. Omar Zimmo  Civil engineering dept.  Tuesday: 12 March 2021  Time: 14:15 - 15:45 | Midterm Exam CE439  Water Supply and Sanitation  Assume any missing data |  |

A (60 Pts)

1. Design a VCP gravity flow sewer main along Pierce Street to serve the mains from the cross streets starting at the intersection with Madison Avenue and ending at Harrison Avenue. Prepare a sewer design table similar to that shown in Example 19-2. Use the following assumptions: minimum invert depth is 3.0 m; the invert of the sewer entering the main from Madison Avenue is at an elevation of 16.91 m. Contributing flows, including I/I, from mains are given below.



**Peak hour lateral flow rates including Infiltration/Inflow (I/I)**

Street Flow rate, m3/s

Madison Ave. 0.0075

Taylor Ave. 0.0087

Coolidge Ave. 0.0072

Grant Ave. 0.0068

Adams Lane 0.0200

Jefferson Blvd. 0.0052

Washington St. 0.0065

1. Draw to scale a profile drawing (20 Pts)
2. Prepare detailed BOQ for the sewer main (20 pts)