1011-15-30 J. Ding\* (Jiu.Ding@usm.edu), 118 College Dr. #5045, The University of Southern Mississippi, Hattiesburg, MS 39406, and Wallace C. Pye (Wallace.Pye@usm.edu), 118 College Dr. #5045, The University of Southern Mississippi, Hattiesburg, MS 39406. Some Results on Structured M-matrices.

Let A be an  $n \times n$  M-matrix, and let U and V be  $n \times k$  nonnegative matrices. We present several equivalent conditions for the matrix  $A - UV^T$  to be an M-matrix, using techniques of Sherman-Morrison's formula, inverse positivity, and determinantal positivity. We give an application of the result to wireless communications. (Received July 15, 2005)