

## Supplemental Methods

Specimen Handling Guidelines provided in RTOG 98-04:

A flow diagram for this procedure is outlined in Figure 1. The breast specimen when received should be measured and grossly inspected for any orientation designated by the surgeon. The specimen, still intact, should be placed on an x-ray plate and a radiograph should be taken. The radiograph should be evaluated with comparison to the patient's mammogram, which showed the suspicious microcalcifications and/or abnormal soft tissue densities (*ASTD*). This is best evaluated by a radiologist. If calcification/*ASTD* are identified which correspond to those observed mammographically, the surgeon should be informed immediately as the procedure is finished. If no calcifications or *ASTDs* corresponding to those seen on mammogram are identified, then a second radiograph of serial sections should be reviewed before proceeding with any further surgery. The oriented breast specimen should then be inked (*multiple colors may be used to identify various margins of resection.*) Tissue is sequentially sectioned in 3-5 mm thick sections and laid down, in order, on an x-ray plate (*keeping coherent orientation*). A second radiograph is taken and evaluated for the presence of microcalcifications and/or *ASTDs*. If calcifications or *ASTDs* corresponding to the mammogram are not identified, additional tissue must be removed after relocalization procedure. If corresponding calcifications or *ASTDs* are identified, no further procedure is required. It is strongly suggested that no frozen sections of these tissue specimens be performed (*unless an identifiable lesion of adequate size [more than 1 cm] becomes apparent with serial sectioning*). These specimens should be examined on permanent sections. For relatively small specimens (*less than 5 cm in diameter*), all of the tissue specimen can be easily submitted for evaluation. Comparison of serial tissue sections with the corresponding radiograph should allow identification of tissue segments, which contain microcalcifications and/or *ASTDs*. The cassettes into which these areas are submitted should be identified in the gross dictation. For larger specimens, permanent sections should include 1) all areas containing microcalcifications and/or *ASTDs*; 2) all areas of fibrous parenchymal tissue 3) tissue margins of resection.