THEATER PLANNING SIGHT LINE REQUIREMENTS

A. Use the following method to provide unobstructed vision from all seats.

(1) To determine the location of the first row of seats from the stage, establish eye position of a spectator in the first row on the centerline of the stage by an approximate 30 degree angle from horizontal to the highest object to be seen. A point 3’8” below and 18 inches in front of the eye position will be the floor level for the front row.

(2) Step off the back to back horizontal seat spacing and draw vertical lines at the points thus established.

(3) Draw a sight line from the first row eye position to the downstage edge of stage and extend it back beyond this eye position.

(4) Establish a point 5 inches above the intersection of the extended sight line and the vertical line indicating the third row location. This is the eye position for the third row. The floor level at the front edge of the third row seat is 3’-8” below and 18 inches in front of this eye position.

(5) Repeat steps (2), (3) and (4) for every other row to the back of the house and draw in the floor slope. Where the slope exceeds 1-1/2 inches per foot, platforms are required under the seats and steps in the aisles. A cross-aisle which divides the orchestra into front and back sections requires the higher elevation of the first row of seats behind it to adjust for the horizontal width of the aisle, possibly with one or two risers, and to comply with ADA requirements.

B. The standing spectator’s eye level behind the rear row of seats is assumed to be 5 feet 6 inches above the floor level of the last row. The sight line from this position to the top of the screen or highest probable curtain trim establishes the minimum height for ceiling under balcony.

C. The planning of the floor slope is not completed when pitch of orchestra and balcony has been laid out on the center line. It depends also on the curve of the rows of seats. The whole row must be at the same elevation if the seats are to be level. The floor therefore is not a sloped plane, but a dished surface in which sitelines will determine the orchestra floor shape. The balcony is planned the same way save that the floor is stepped to take the seats.

D. The vertical angle of 30 degrees at the first row spectator’s position establishes the distance from the closest seat to the screen or to the highest significant object on the stage. The lowest seat in the orchestra must be located where a patron can just see the stage floor. The standing patron at the back of the orchestra must be able to see the top of the screen, which is usually as high as any significant portion of a stage setting. Each spectator must see the whole stage or screen over the heads of those in front of him. Within these limits the floor slope of orchestra and balcony can be laid out with the first step determining the auditorium longitudinal section.