Scioto Valley Chapter of

THE NINETY-NINES, Inc.

Columbus, Ohio

COMPASS ROSE: 12-point / 70-ft. Diameter

ACKNOWLEDGEMENTS

The Scioto Valley Chapter of the Ninety-Nines uses the basic design of the compass rose prepared by the Air Marking Chairman of the North-Central Section of the 99s, revised March, 1988 from a design made earlier by the Three Rivers Chapter.

The Scioto Valley Chapter modified the procedure of the layout, but kept the design itself nearly unchanged. We made some minor adjustments in the logo of interlocking nines for a more accurate rendition of the official logo, and re-depicted the logo within a rectangular grid centered on the origin of the compass rose. Also, we request the surveyor to mark magnetic directions every 30 degrees around the circle, eliminating some difficult geometrical constructions that were required when only the North Line was surveyed.

This text material was modified and retyped to reflect the new layout procedures, and new illustrations were prepared for a color printer.

The Scioto Valley Chapter has used these procedures since 1990, and has been quite successful in producing very striking compass roses at numerous airports in central Ohio, New Mexico, and Colorado.

We've found that under good weather conditions, a crew of 6–8 can complete the layout in 1 to 1½ hours, and 12–14 painters can paint the Rose on a smooth surface in about 3 additional hours (including a second coat of white that usually is required). Allow 5–7 hours for painting a rough or porous surface. Final cleanup rarely takes over 1 hour.

Instructions

Stencils

INSTRUCTIONS

1. GENERAL CRITERIA

Establish the area ahead of time in which the compass rose is to be laid out. A level ramp area is preferable, in a location with minimum daily traffic, and remote from any large metal structures. Magnetic suitability can be assured by taxiing an airplane straight across the proposed area and observing no change of compass reading anywhere along the line. Check two or more crossing lines.

Mark the center of the compass circle (lumber crayon or paint) from which Magnetic North will be determined. If possible, allow at least fifty feet for wingtip clearance in all directions around the center point.

2. MAGNETIC ALIGNMENT

Magnetic North should be determined from the center of the circle. City or County engineers frequently are willing to do this, using a surveyor's transit equipped with a magnetic-compass needle. Be certain the engineer or surveyor understands the need for an unadjusted Magnetic-North alignment. Some surveyor's transits are equipped with an adjustable scale for local magnetic variation, so that the scale can be set to read approximately True North. That sort of mistake here would destroy the entire value of the project.

3. SURVEYOR'S INSTRUCTIONS

With the transit set up over the center of the circle and aligned to Magnetic North, ask the engineer or surveyor to mark all twelve 30-degree radials at points about 36 or 38 feet away from the center. Uniquely identify the North radial.

4. SURFACE PREPARATION

On the day of the Rose layout and painting, sweep all debris and loose gravel from the area, and check to see if the engineer or surveyor left a nail at the center point that could be used as an anchor for the loop at the end of a 50-foot steel tape. If not, attempt to drive such a nail into the asphalt surface. That will be impractical on a concrete surface unless you have appropriate masonry nails. *Wear eye protection when driving masonry nails into concrete.*

5. CIRCLES

With the 50-foot steel tape anchored at the center pin, three people on their hands and knees with lumber crayons can draw the three circles at 10-ft, 20-ft, and 35-ft radii simultaneously, while one or two others keep the steel tape straight as it is advanced incrementally around the circle.

If two steel tapes are available, two crews can work simultaneously on opposite sides of the area.

6. ROSE

As shown on the *Compass Rose Detail* diagram, snap a chalk-line mark from the center point to each of the 30-degree marks outside the 35-ft circle. Form the Vee of each pennant-shaped area by snapping two additional chalk lines from the 35-ft point on each radial to the 10-ft point on its two neighbor radials. Note that only the N, E, S, and W pennants extend inward to the 10-ft circle. The "minor" pennants are painted inward only to the 20-ft circle.

Use lumber crayon for clearer definition of the edges and extents of the pennant areas. Painting of the pennants can begin while the interlocking nines are being laid out.

7. INTERLOCKING NINES

Referring to the *99 Logo Detail* chart, lay out the grid lines shown, centered on the center of the Rose, using chalk lines. All dimensions on the *99-chart* are in inches. The "corners" of the grid will lie just outside the 10-ft circle, but the **99** logo will be entirely inside it.

This grid and the **99** logo are intricate. Carefully recheck all measurements before using lumber crayon to outline the **99** logo within the grid. The painters will appreciate plenty of crayoned **B**s and **W**s to help distinguish the areas of blue nines from the white background.

8. NORTH MARK

Mark the North pennant with a large **N** about 24 inches outside the 35-ft circle, at least 40 inches tall, as shown on the accompanying *N-detail* diagram. If you want your **N** to be larger, scale the diagram appropriately. For example, a 60-inch **N** would have 12-inch-wide legs, spaced 12 inches to each side of the centerline.

Use a square to set the base of the **N** at right angles to the extended North radial.

9. PAINTING

The **99** logo is blue on a solid white background, inside the 10-ft ring.
The 10-ft ring is a 4-inch blue band, with its inner edge on the 10-ft circle.
The 20-ft ring is a 4-inch white band, with its inner edge on the 20-ft circle.
The 35-ft ring is a 4-inch blue band, with its inner edge on the 35-ft circle.
The clockwise half of each pennant area is solid blue; the counter-clockwise half of each pennant area is solid white.
The large **N** on Magnetic North is solid white.
Outside the 10-ft ring, the open areas between the rings remain unpainted.
Draw or stencil the current year in the center circle, below the 99 logo.

10. PAINT MIXING

For best results, use white highway traffic paint, often available from the county highway department. The newer, acrylic or latex paints thin with water, and are preferred for ease of application. Petroleum-naphtha-based paints use Avgas for thinner. *Beware of fire hazard with Avgas.*

To make up the blue paint, blend one quart of blue tint (concentrate) with five gallons of white paint. An electric stirrer is recommended for blending, *but not with Avgas*.

Expect to use at least 15 gallons of paint on a newly sealed asphalt surface, perhaps 35 gallons or more on an older, porous concrete or unsealed surface.

11. SUPPLIES SUMMARY

1 or 2 fifty-foot steel measuring tapes.
1 or 2 yellow chalk lines.
½ dozen yellow or red lumber crayons.
1 electric paint stirrer.
3−7 five-gallon cans of white traffic paint.
1−3 quarts of concentrated blue tint, chemically compatible with the paint.
(Phthalo Blue is excellent, but other dark blues are satisfactory.)
1−2 cans of grey or black spray enamel to cover "accidents". Match ramp color.
An artist's brush and several ounces of black enamel for the date stencil.
Masking tape.
4-inch and 9-inch paint rollers (enough for everybody).
1- or 2-inch beveled paint brushes (sash brushes).
Sturdy paint-roller trays and disposable plastic liners.
Hammer and nail(s) for center pivot.
Tee square or Carpenter's square.
Several brooms.
Knee-protector pads.
Assorted rags, paper towels, trash bags, and paint thinner for cleanup.

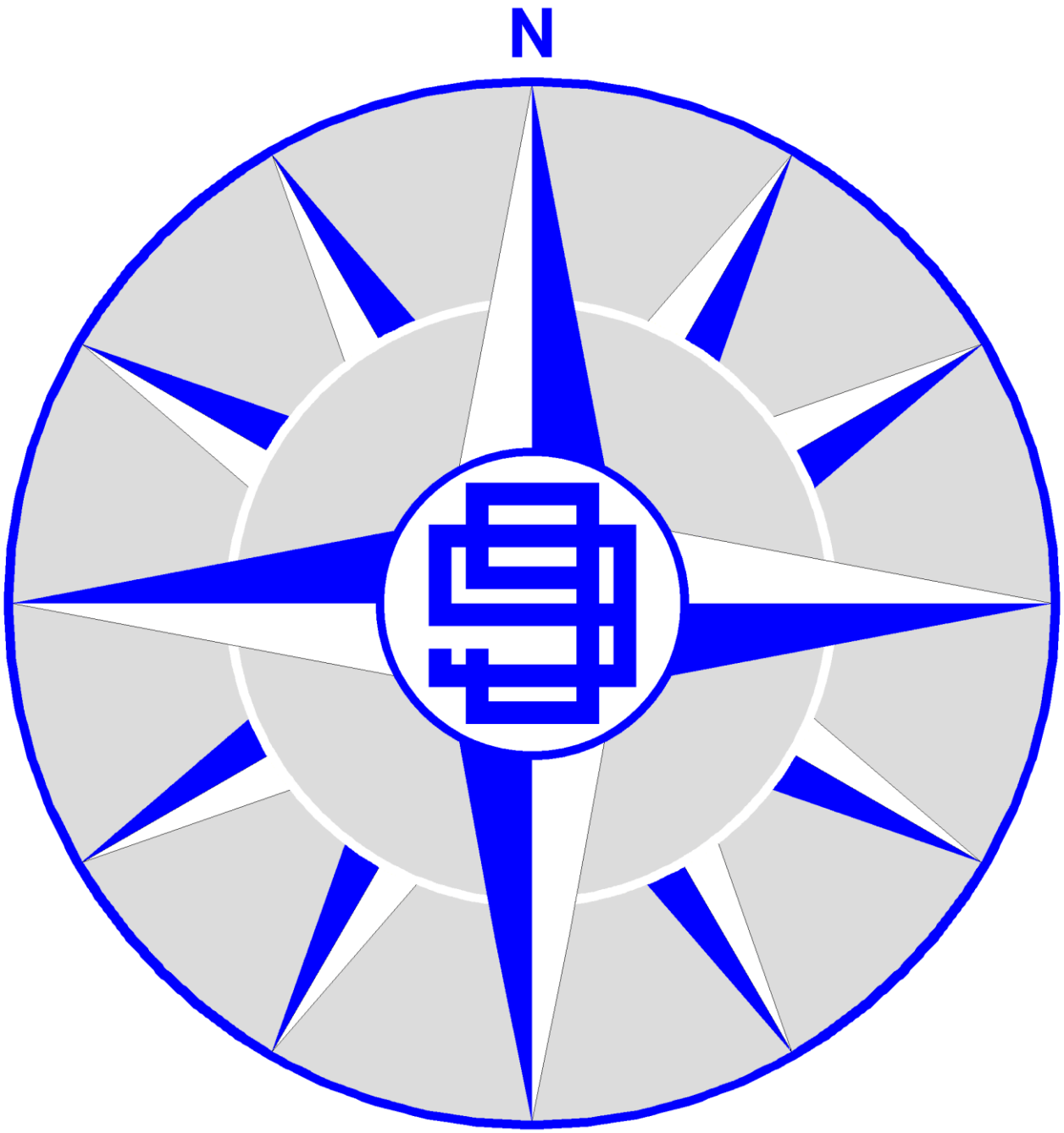

Figure 1. Compass Rose

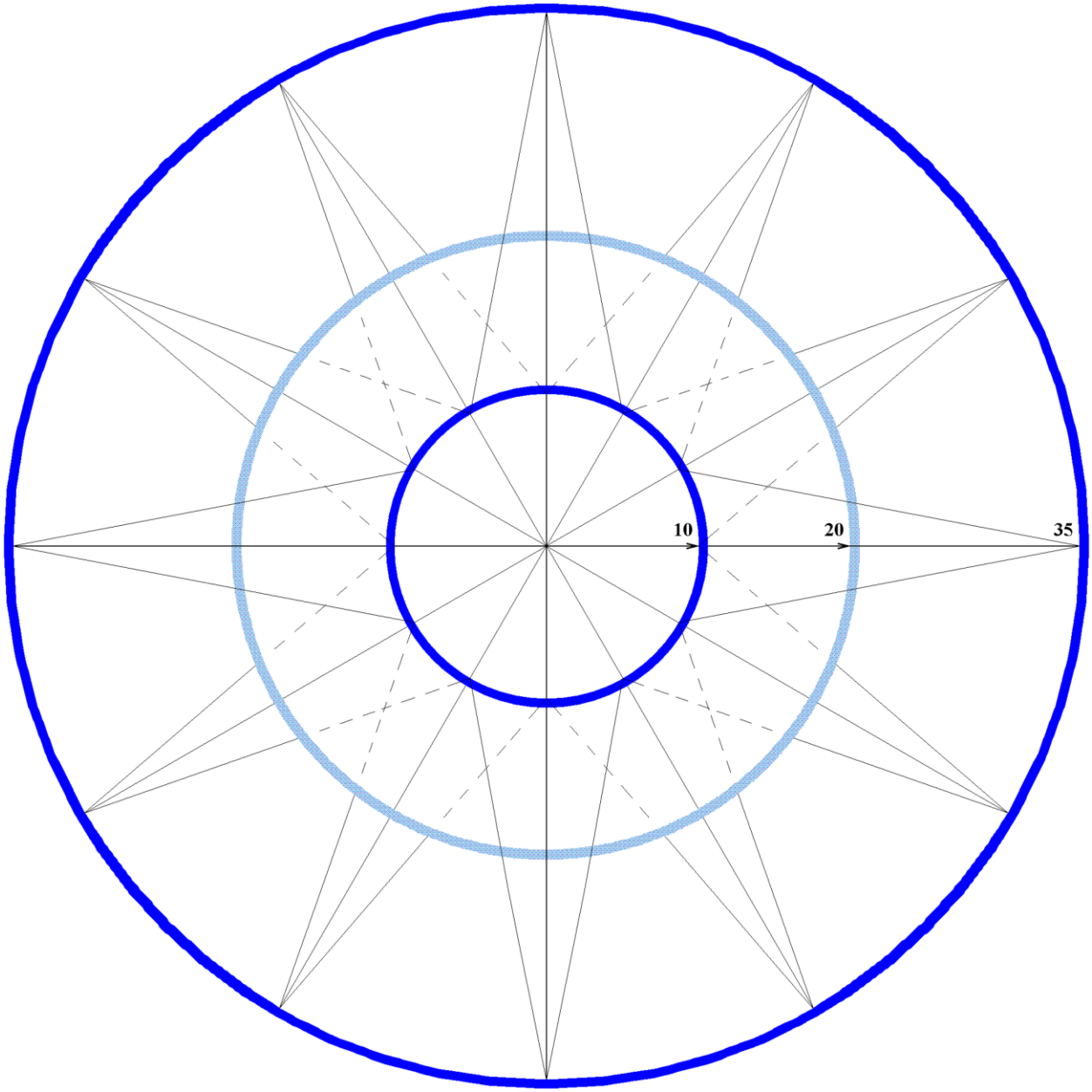

Figure 2. Compass Rose Detail

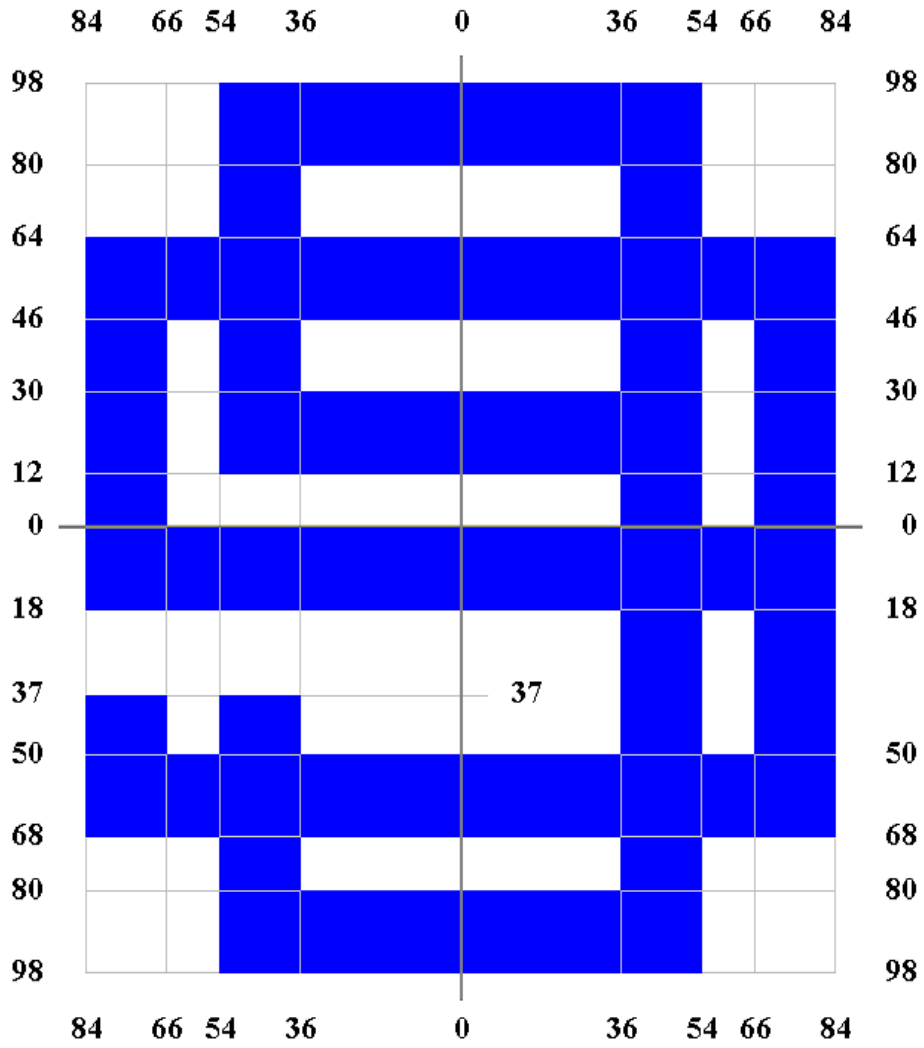

Figure 3. 99-Logo Detail

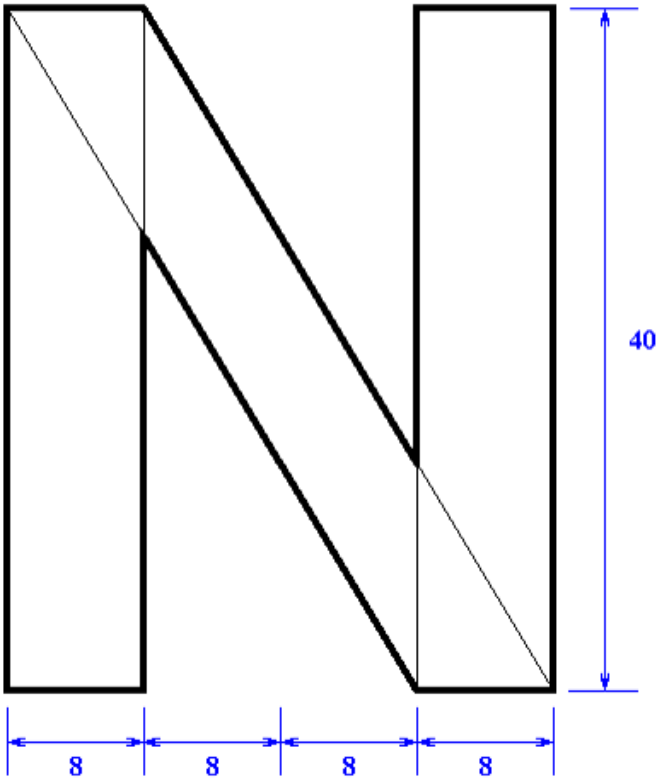

Figure 4. N-Detail