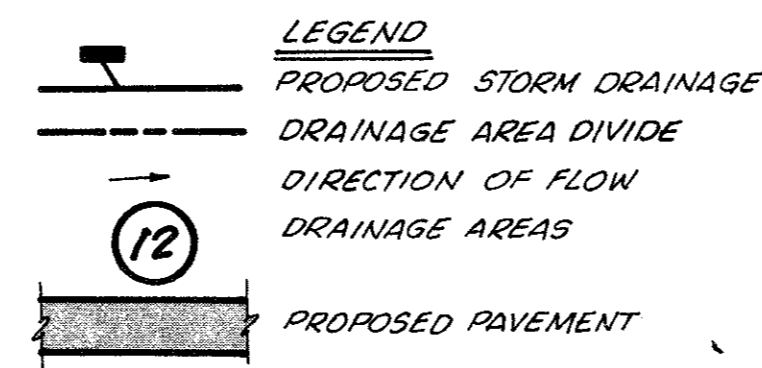


DRAINAGE AREA CALCULATION*

* BASED ON THE RATIONAL METHOD WHERE $Q = CIA$
 WHERE Q IS THE DISCHARGE IN CUBIC FEET PER SECOND (cfs)
 I IS THE RAINFALL INTENSITY IN INCH/HOUR.
 A IS THE DRAINAGE AREA IN ACRES.
 C IS THE RUNOFF COEFFICIENTS

| AREA NO. | AREA (acres) | C | T _c (min) | I ₁₀₀ (in/hr) | Q ₁₀₀ (cfs) | POINT OF CONCENTRATION |
|----------|-----------------|------|----------------------|--------------------------|------------------------|------------------------|
| 1. | 8.50 (off-site) | 0.45 | 15 | 6.80 | 26.01 | 2-14' INLETS |
| 2. | 3.50 (off-site) | 0.45 | 15 | 6.80 | 10.71 | SPECIAL TYPE "Y" INLET |
| 3. | 3.80 (on-site) | 0.45 | 15 | 6.80 | 11.63 | 10' INLET & 5' INLET |
| 4. | 4.95 (on-site) | 0.45 | 15 | 6.80 | 15.15 | 2-10' INLETS |
| 5. | 4.40 (off-site) | 0.45 | 15 | 6.80 | 13.46 | SPECIAL TYPE "Y" INLET |
| 6. | 4.86 (on-site) | 0.45 | 15 | 6.80 | 14.87 | 14' INLET |
| 7. | 2.74 (on-site) | 0.45 | 15 | 6.80 | 8.38 | 10' INLET |
| 8. | 1.70 (on-site) | 0.45 | 15 | 6.80 | 5.20 | OFF-SITE |
| 9. | 0.46 (on-site) | 0.45 | 15 | 6.80 | 1.41 | OFF-SITE |
| 10. | 2.98 (on-site) | 0.45 | 15 | 6.80 | 9.12 | 10' INLET |
| 11. | 1.14 (on-site) | 0.45 | 15 | 6.80 | 3.49 | OFF-SITE |
| 12. | 3.00 (on-site) | 0.45 | 15 | 6.80 | 9.18 | 10' INLET |
| 13. | 1.64 (on-site) | 0.45 | 15 | 6.80 | 5.08 | CREEK |

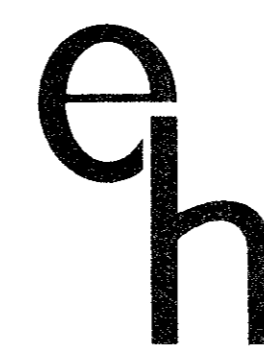


NOTES:

1. ALL STREET ROW WIDTHS ARE 50' UNLESS OTHERWISE NOTED.
2. ALL CUL-DE-SAC ROW DIAMETERS ARE 100'
3. ALL PAVEMENT WIDTHS ARE 28' BACK OF CURB TO BACK OF CURB UNLESS OTHERWISE NOTED.
4. ALL INTERSECTING CURB RADII ARE 20'.

| NO. | REVISION | BY | DATE |
|-----|----------|----|------|
| | | | |

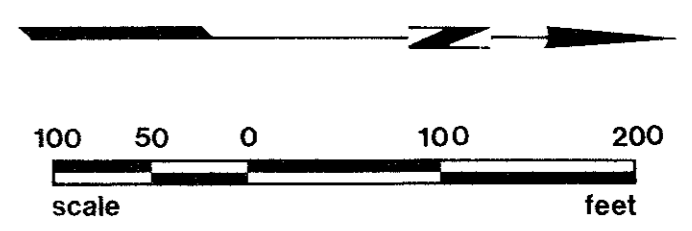
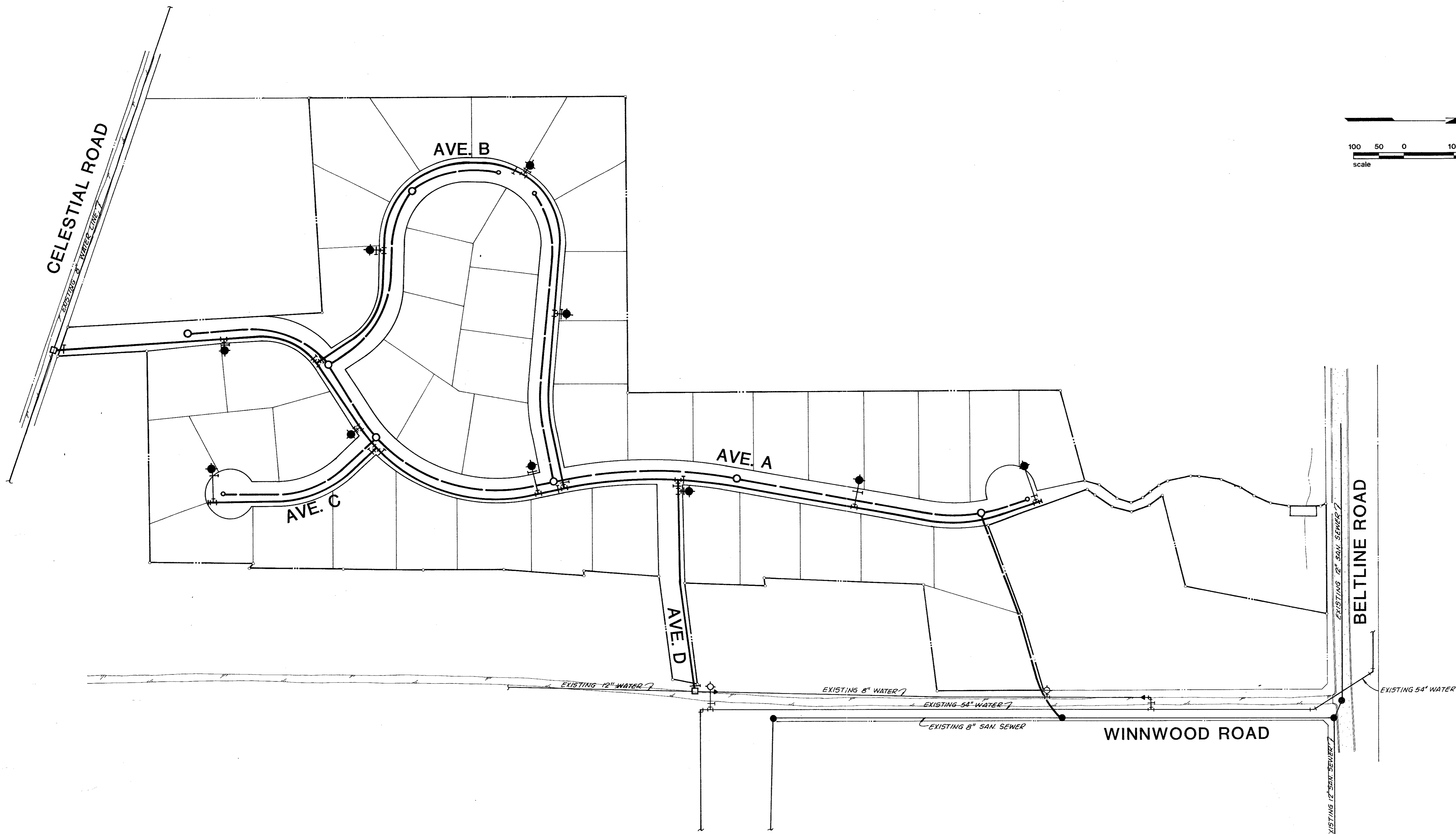
DESIGNED BY: *S. Anderson*
 DRAWN BY: *S. Anderson*
 CHECKED BY: *S. Anderson*
 SCALE: 1" = 100'
 DATE: NOVEMBER 1984



ESPEY, HUSTON & ASSOCIATES, INC.
 Engineering & Environmental Consultants
 333 W. Campbell Rd. Richardson, Texas 75080
 (214) 669-9600

PRELIMINARY
 PAVING AND DRAINAGE PLAN
BELLBROOK ESTATES
 ADDISON, TEXAS
 FOR
 THE SHARIF-MUNIR-DAVIDSON DEVELOPMENT CORP

SHEET NO. **1**
 OF **2** SHEETS
 JOB NO. **5676**



NOTE:

1. ALL ON-SITE WATER LINES ARE 8" DIAMETER PVC.
2. ALL ON-SITE SANITARY SEWER LINES ARE 8" DIAMETER PVC.
3. ALL LOTS HAVE A 2-INCH DIAMETER WATER LATERAL TO MAIN LINE IN STREET
4. ALL LOTS HAVE A 4-INCH DIAMETER SEWER LATERAL TO MAIN LINE IN STREET

LEGEND:

- PROPOSED FIRE HYDRANT WITH TEE AND 6-INCH VALVE
- PROPOSED SANITARY SEWER MANHOLE
- PROPOSED SANITARY SEWER CLEANOUT
- EXISTING SANITARY SEWER MANHOLE

| NO. | REVISION | BY | DATE |
|-----|----------|----|------|
| | | | |
| | | | |
| | | | |
| | | | |

DESIGNED BY: *L. Hudson*
 DRAWN BY: *L. Hudson*
 CHECKED BY: *L. Hudson*
 SCALE: 1" = 100'
 DATE: NOVEMBER 1984

eh ESPEY, HUSTON & ASSOCIATES, INC.
 Engineering & Environmental Consultants
 333 W. Campbell Rd. Richardson, Texas 75080
 (214) 669-9600

PRELIMINARY
 WATER AND SANITARY SEWER PLAN
BELLBROOK ESTATES
 ADDISON, TEXAS
 FOR
 THE SHARIF-MUNIR-DAVIDSON DEVELOPMENT CORP

SHEET NO. **2**
 OF **2** SHEETS
 JOB NO. **5676**