(A) EQUIVALENT DIAMETER = DIAMETER OF CIRCULAR PIPE WITH APPROXIMATELY EQUIVALENT CROSS-SECTION AREA.

f' c (ksi) = MINIMUM COMPRESSIVE STRENGTH OF CONCRETE IN THOUSANDS OF POUNDS PER SQUARE INCH.

As = CIRCUMFERENTIAL STEEL AREA IN SQUARE INCHES PER LINEAL FOOT OF PIPE BARREL IN EACH CONTINUOUS BASIC CAGE AND SUPPLEMENTAL REINFORCEMENT DESIGNATED "U" AND "V".

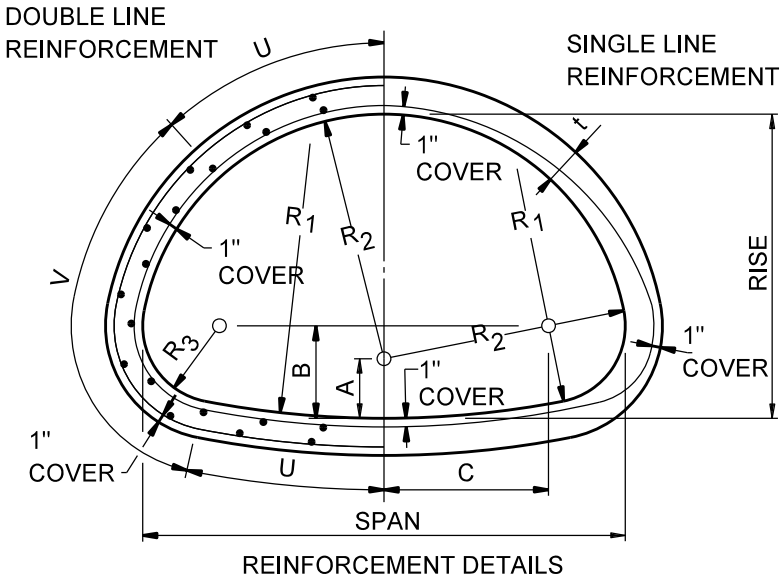
U = HALF BAR OR FABRIC LENGTH MEASURED ALONG CENTERLINE OF PIPE WALL FROM VERTICAL CENTERLINE OF PIPE.

V = FULL BAR OR FABRIC LENGTH MEASURED ALONG CENTERLINE OF PIPE WALL AND POSITIONED EQUIDISTANT WITH RESPECT TO ENDS OF "U" REINFORCEMENT.

$A = \text{RISE} - R_2$

$B = A + \sqrt{(R_2 - R_3)^2 - C^2}$

$C = \frac{\text{SPAN}}{2} - R_3$



REINFORCEMENT DETAILS

1. STEEL FABRIC SHALL CONFORM TO REQUIREMENTS OF ASTM A 185, fy = 65 ksi.
2. IF REINFORCEMENT BARS ARE USED, INCREASE TABLE VALUES FOR REINFORCEMENT AREAS BY 8%. REINFORCEMENT BARS SHALL CONFORM TO REQUIREMENTS OF ASTM A 615, GRADE 60, fy = 60 ksi.
3. MINIMUM COVER OF REINFORCEMENT SHALL BE 3/4", MAXIMUM SHALL BE 1" + 10% OF (t) OR 1-1/2" WHICHEVER IS GREATER.
4. WHERE DOUBLE LINE REINFORCEMENT IS INDICATED, ALTERNATE METHODS OF STEEL PLACEMENT WHICH SUPPLY EQUIVALENT REINFORCING STRENGTH AT ALL CRITICAL LOCATIONS MAY BE USED SUBJECT TO WRITTEN APPROVAL OF THE ENGINEER.
5. LONGITUDINAL REINFORCING PARALLEL TO THE AXIS OF THE PIPE SHALL BE A MINIMUM OF 0.06 SQUARE INCHES PER CIRCUMFERENTIAL FOOT ON ALL SIZE SECTIONS. THIS LONGITUDINAL REINFORCING SHALL BE UNIFORMLY SPACED AROUND THE REQUIRED AREAS OF THE CIRCUMFERENCE OF THE PIPE.
6. THE SPACING CENTER TO CENTER OF ADJACENT RINGS OF CIRCUMFERENTIAL REINFORCEMENT IN A CAGE SHALL NOT EXCEED 4 IN. FOR PIPE UP TO AND INCLUDING PIPE HAVING A 4 IN. WALL THICKNESS NOR EXCEEDING THE WALL THICKNESS FOR LARGER PIPE AND SHALL IN NO CASE EXCEED 6 IN.. THE CONTINUITY OF THE CIRCUMFERENTIAL REINFORCING STEEL SHALL NOT BE DESTROYED DURING THE MANUFACTURE OF THE PIPE.

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2 OF 3
NOT TO SCALE

Minneapolis Public Works	DRW: CXD	DATE: 4/03	RC PIPE-ARCH	STANDARD PLATE NO. SEWR-4005
	APP: HRS	DATE: 12/06		