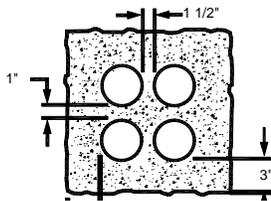


**SPECIAL DUCT FORMATIONS**

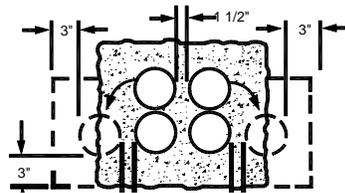
**DUCT BANK TERMINATIONS**

MINIMUM SEPARATION REQUIRED BETWEEN ALL TYPES OF DUCT AT DUCT ENTRANCES TO SUBSTRUCTURES



**DUCT ROLLING**

USED ONLY WHEN SPECIFIED OR SANCTIONED FOR DUCTS TO OCCUPY MINIMUM VERTICAL SPACE AND MAINTAIN REQUIRED COVER.



Notes:

1. Spacing and concrete coverage as shown are minimum.
2. Spacers approved by the RPU shall be placed at the following intervals.

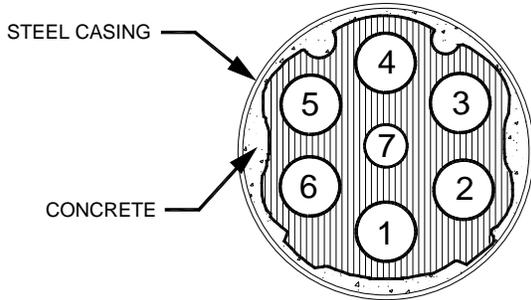
CONDUIT SIZE	2"	3"	3 1/2"	4"	5"	6"
SPACING WITH ENCASEMENT	10'	10'		10'		
SPACING WITH NON-ENCASED	10'	8'		6'		

3. Base spacers are required on all banks of four or more conduits.
4. Conduit is to be of an approved material and type as set forth in drawing UGS-100.
5. For encased and semi-encased installations use E. B. conduit.
6. For direct burial and inside bore casing use SCH. 40 conduit.
7. For general duct bank, concrete, and trenching requirements, see UGS-100.1.
8. Install ground wire only when specified on working drawings.

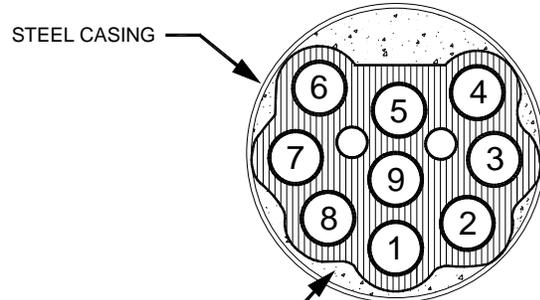


# DUCT BANK REQUIREMENTS INSTALLATION IN A BORE

UGS



METHOD A



METHOD B

METHOD A	
NO. OF 5" CONDUITS	RECOMMENDED CASING SIZE
4	16 IN. O.D.
6	22 IN. O.D.
8	28 IN. O.D.
10	34 IN. O.D.

METHOD B		
NO. OF 5" CONDUITS	RECOMMENDED CASING SIZE	RECOMMENDED CASING SIZE USING CIRCULAR SPACERS
4	18 IN. O.D.	
6	26 IN. O.D.	22 IN. O.D.
8	32 IN. O.D.	28 IN. O.D.
10	38 IN. O.D.	

**NOTES:**

1. Installation shall be made by machine boring or by jacking. Sluicing and jetting with water is not permitted. A limited use of water for lubrication of drills may be permitted, however, by special arrangement with local governing inspection authorities.
2. A new steel casing will normally be used. Used casing, which shows little or no deterioration, may be used if judged satisfactory by the Department inspector. The minimum allowable casing thickness is 1/4". State highway construction requires a 1/4" wall thickness under 30" in diameter, a 3/8" wall thickness for diameters up to 42", and a 1/2" thickness for diameters 42" and greater.
3. Ducts used in the casing will be SCH. 40 conduit.
4. Horizontal and vertical spacing between ducts shall be as shown above for typical duct bank sections, the distance between spacers shall be limited to a maximum of five feet.
5. The approved manufacturer for the module spacer is Formex Inc. See UGS-125.1 for spacers details.
6. Ducts shall maintain the same position entering and leaving the casing. After the ducts are in place, concrete shall be pumped in to fill all voids and plug the ends of the casing.