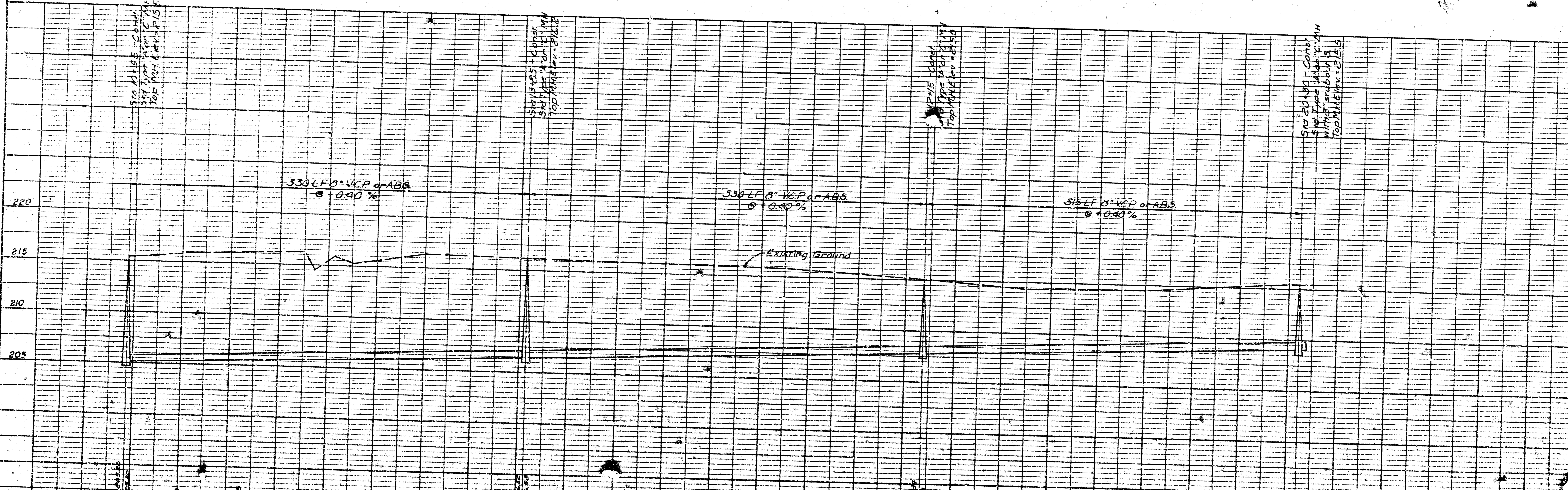
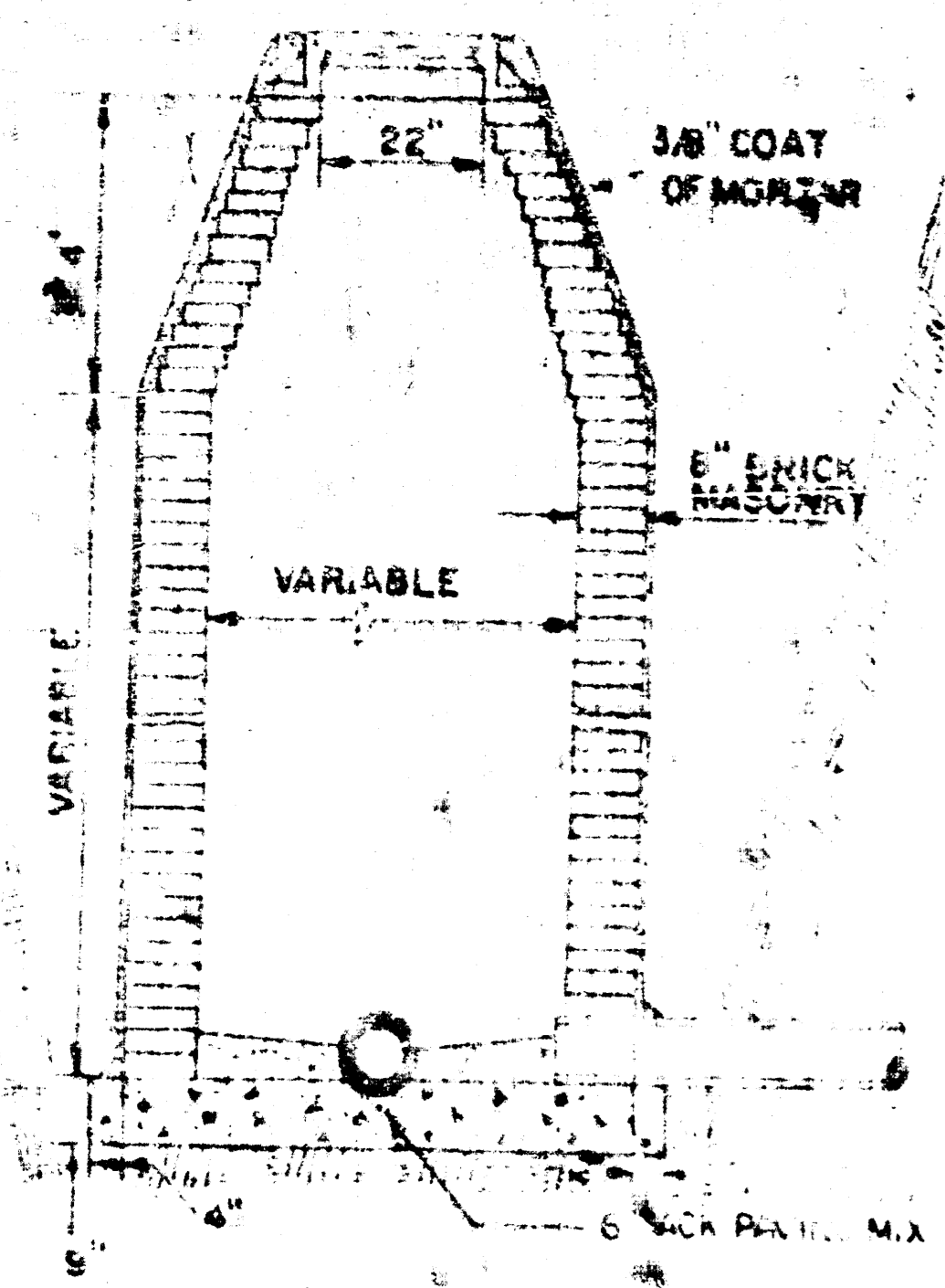


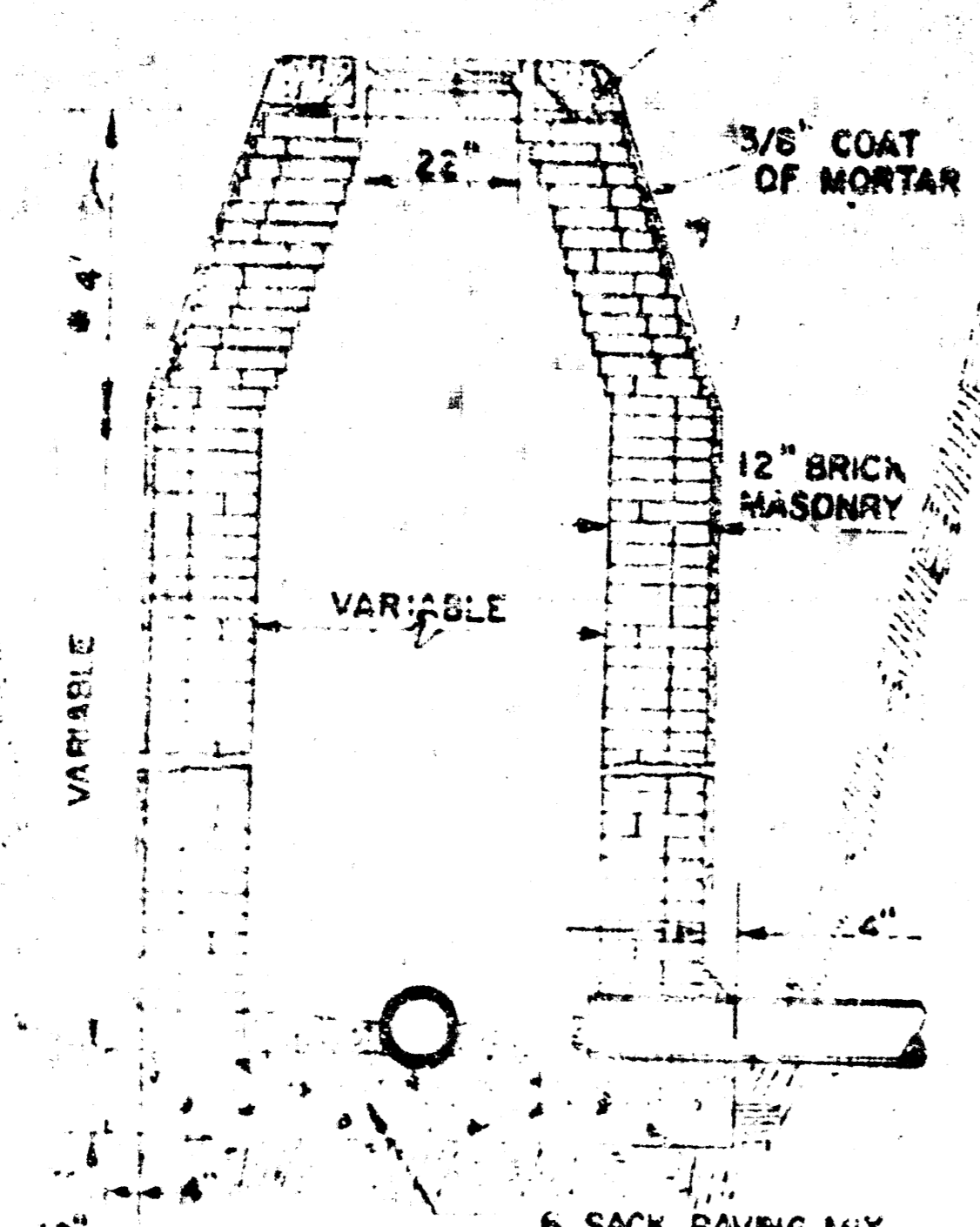
BM Spike in W. face Power pole  
 1180' N 50' E. of intersection  
 Rock Rd. & 29th St. N.  
 Elev 219.34



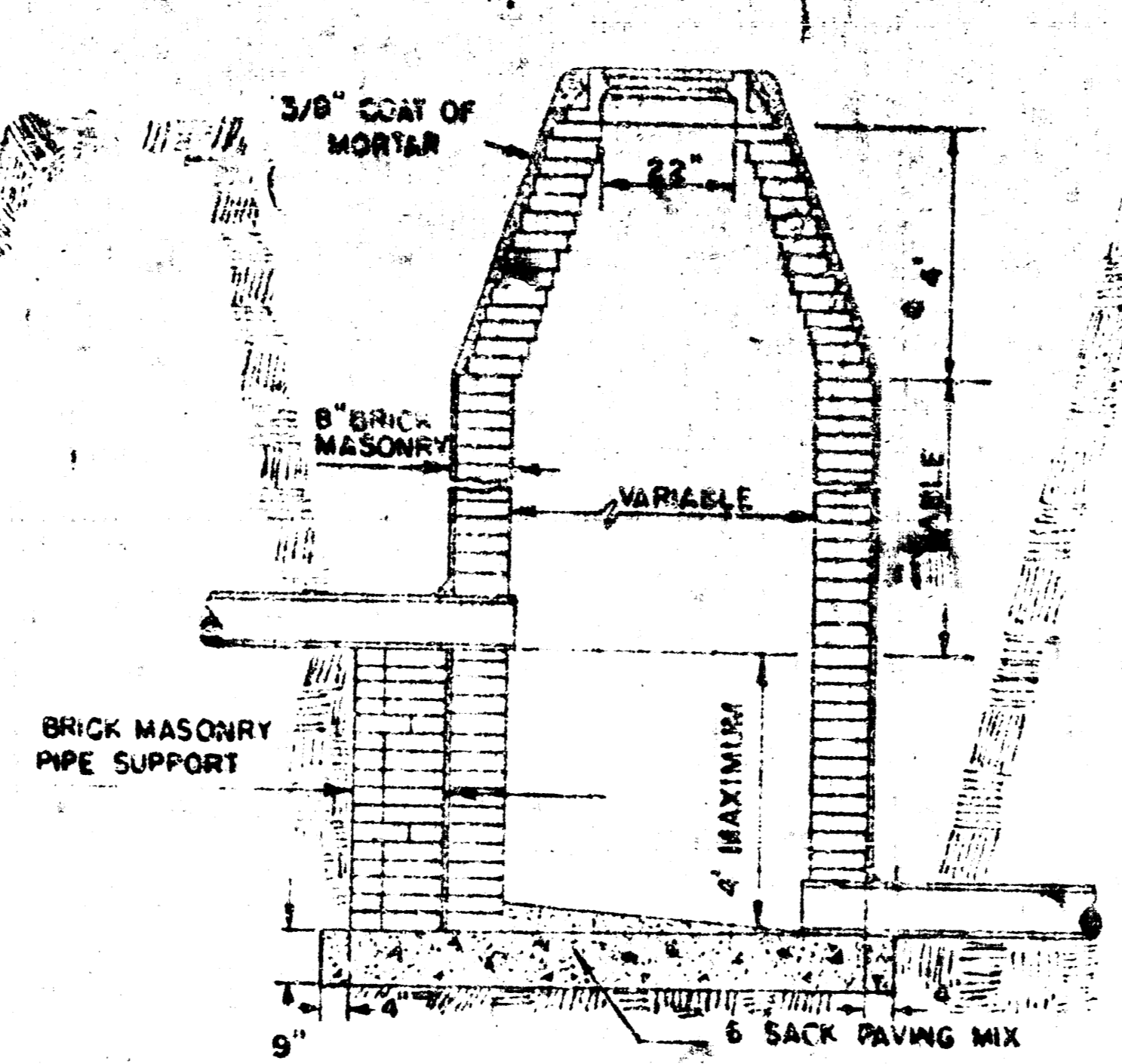
GROUT TO BE PLACED AROUND MANHOLE RING ONLY WHEN MANHOLE IS CONSTRUCTED IN UNPAVED AREAS. (TYPICAL ALL MANHOLES)



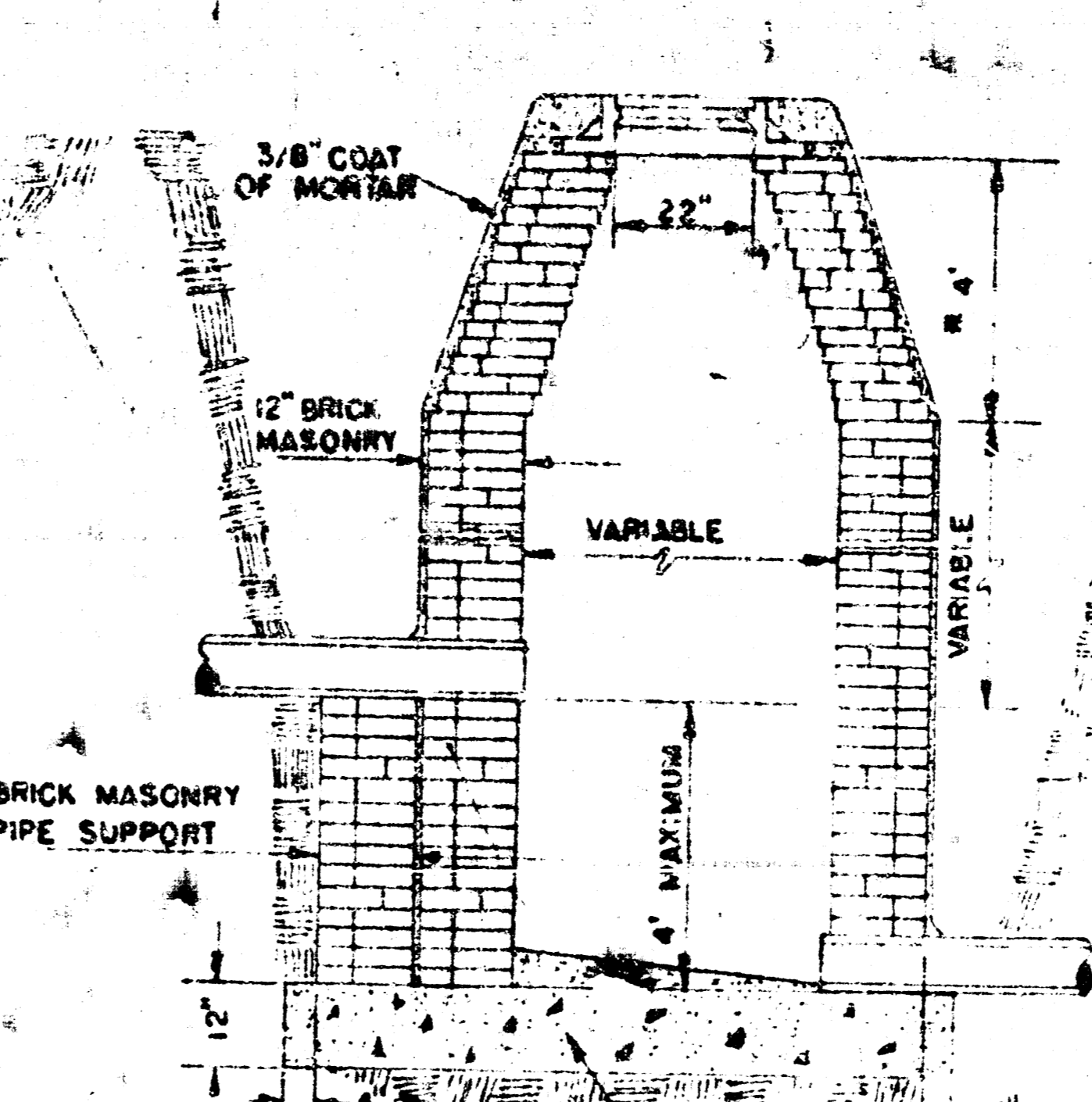
STANDARD MANHOLE TYPE "A"



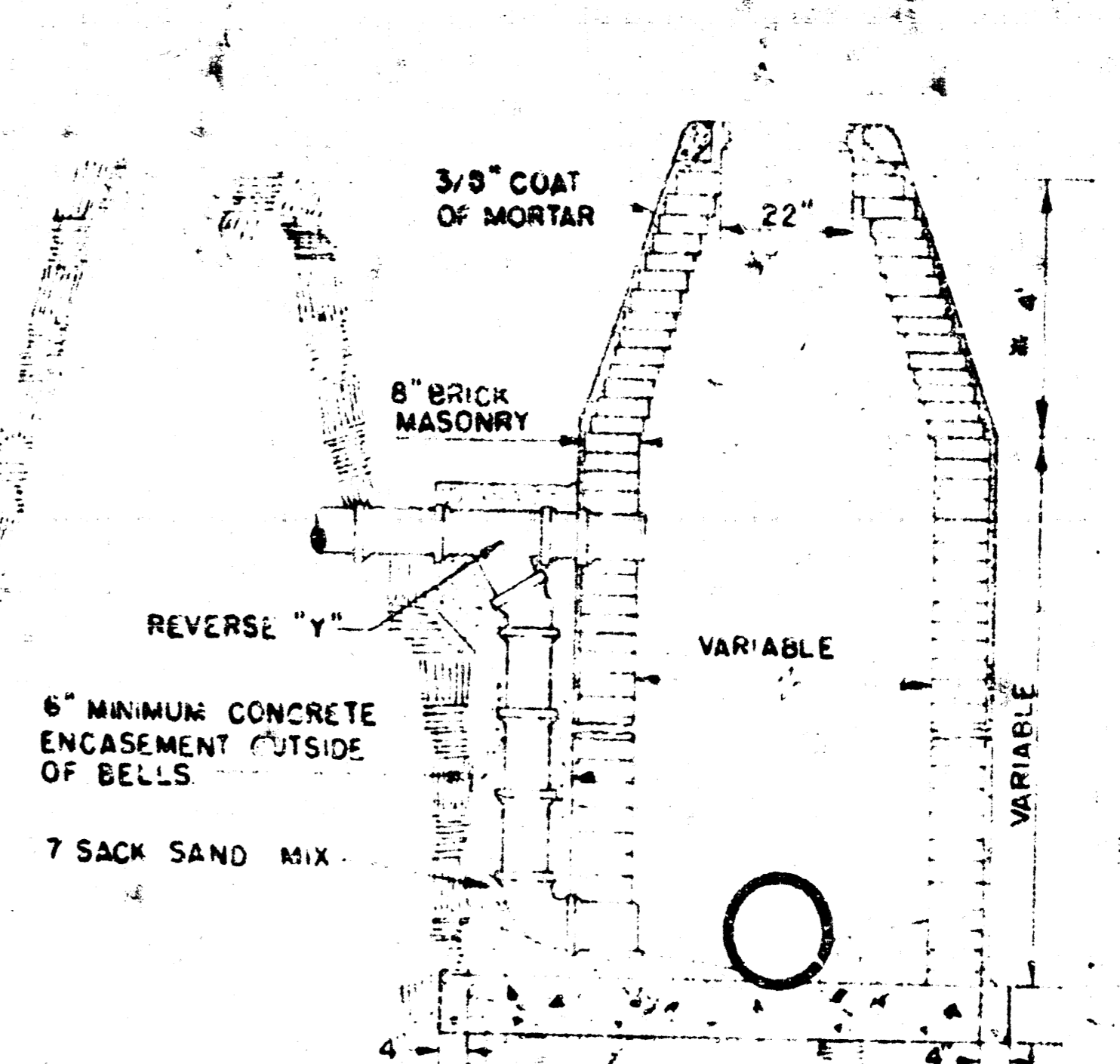
STANDARD MANHOLE TYPE "B"



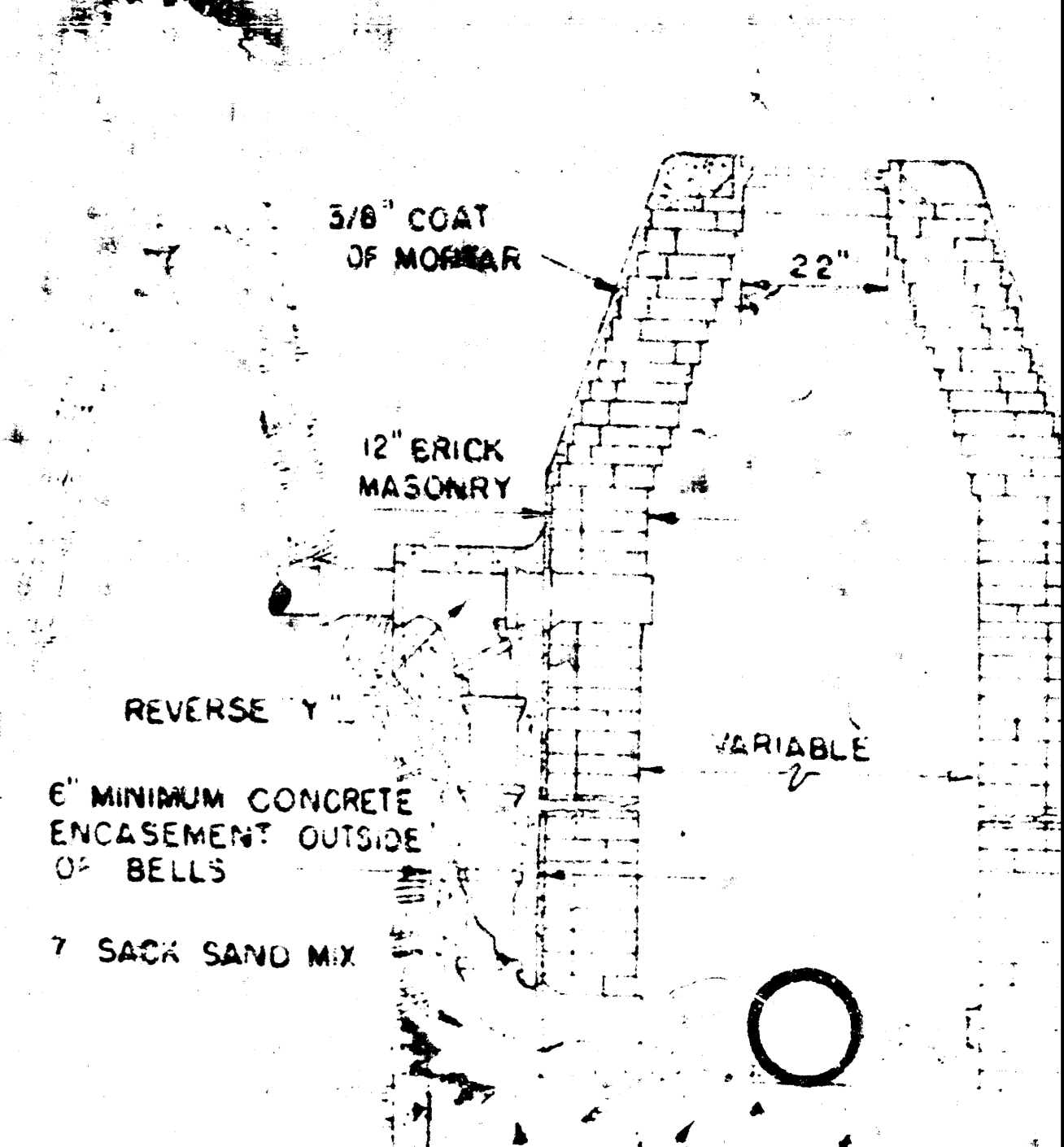
DROP MANHOLE TYPE "A"



DROP MANHOLE TYPE "B"



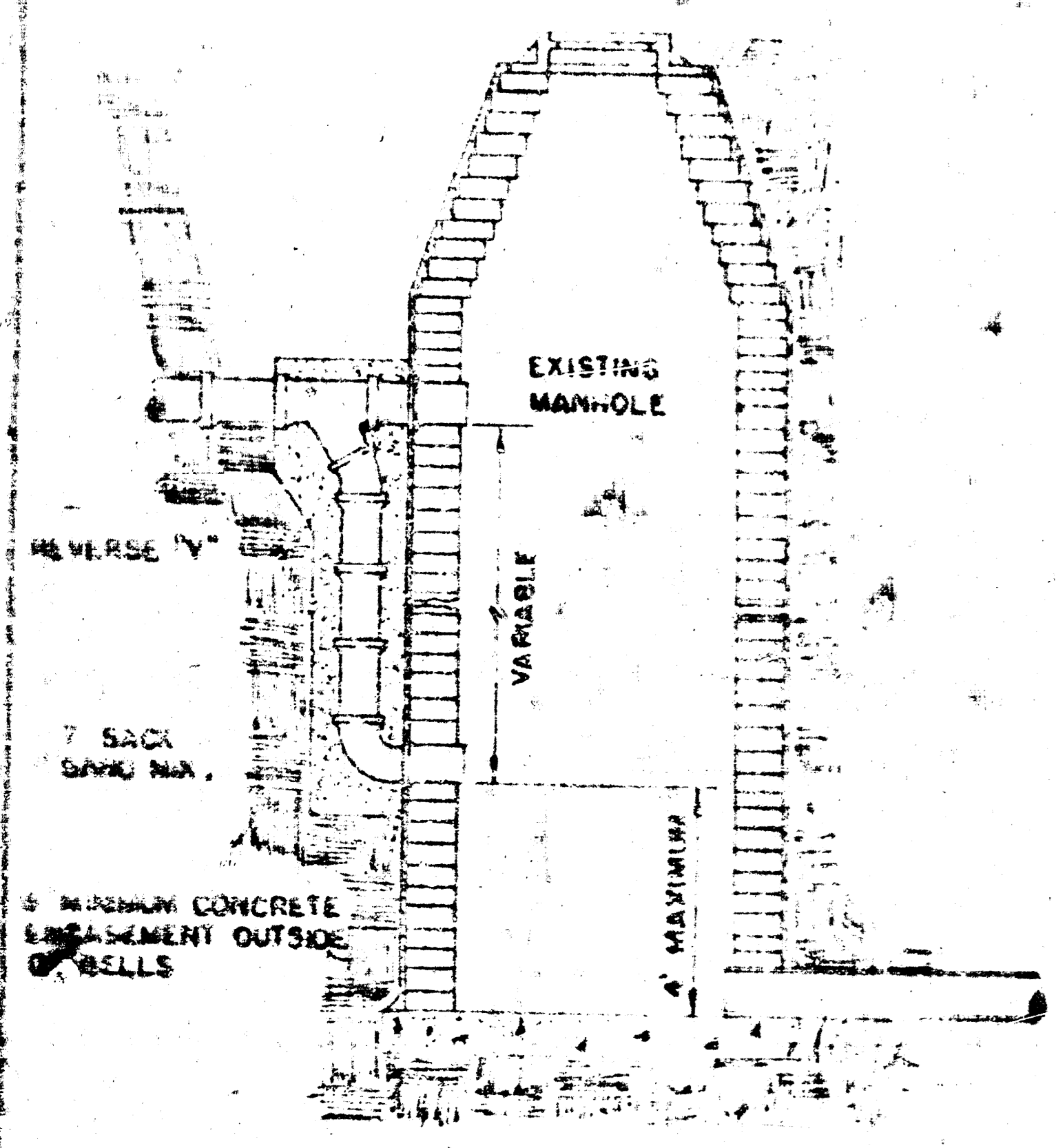
OUTSIDE DROP MANHOLE TYPE "A"



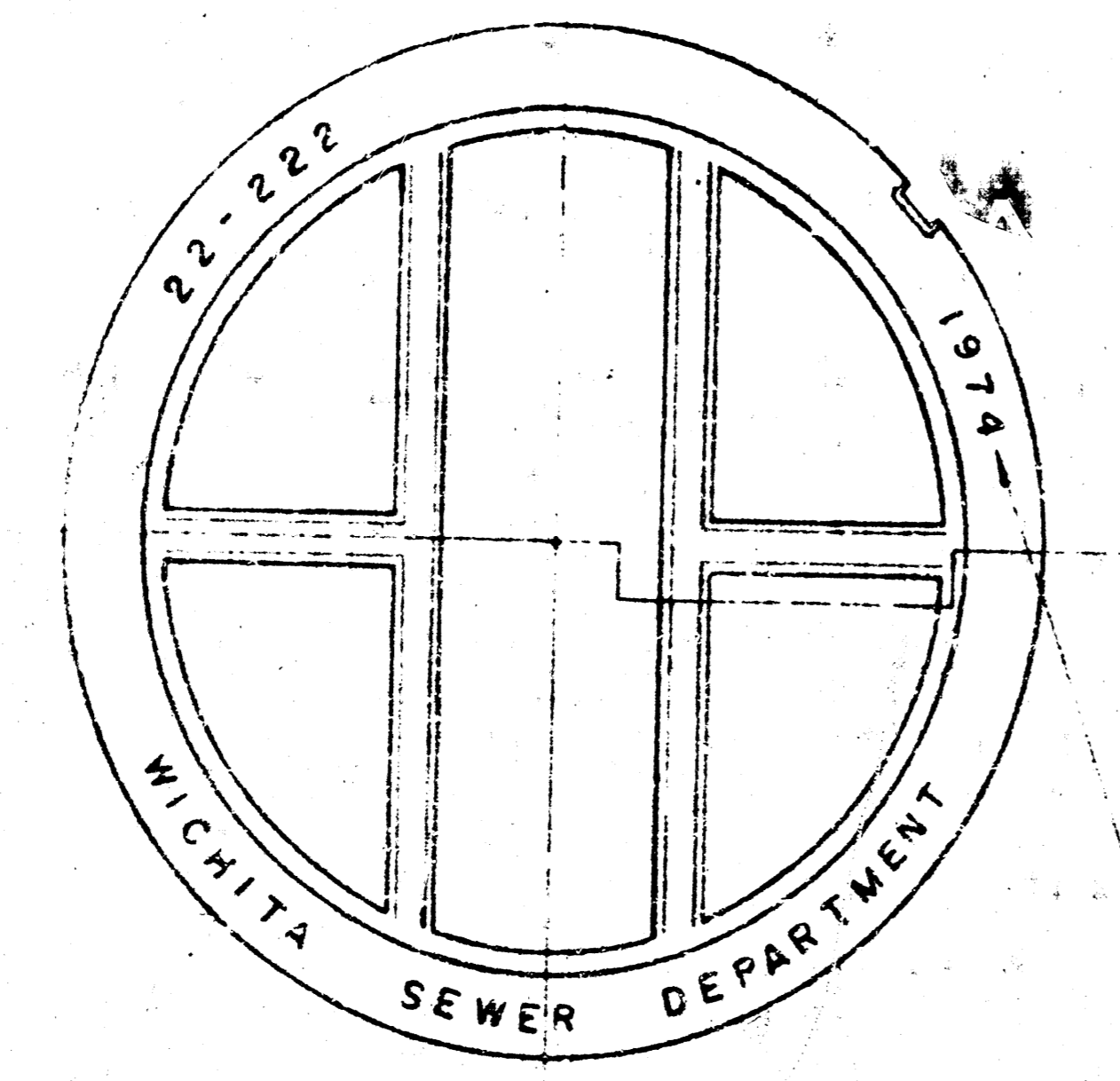
OUTSIDE DROP MANHOLE TYPE "B"

\* DRAW = 6' ON 5' DIA. M.H.

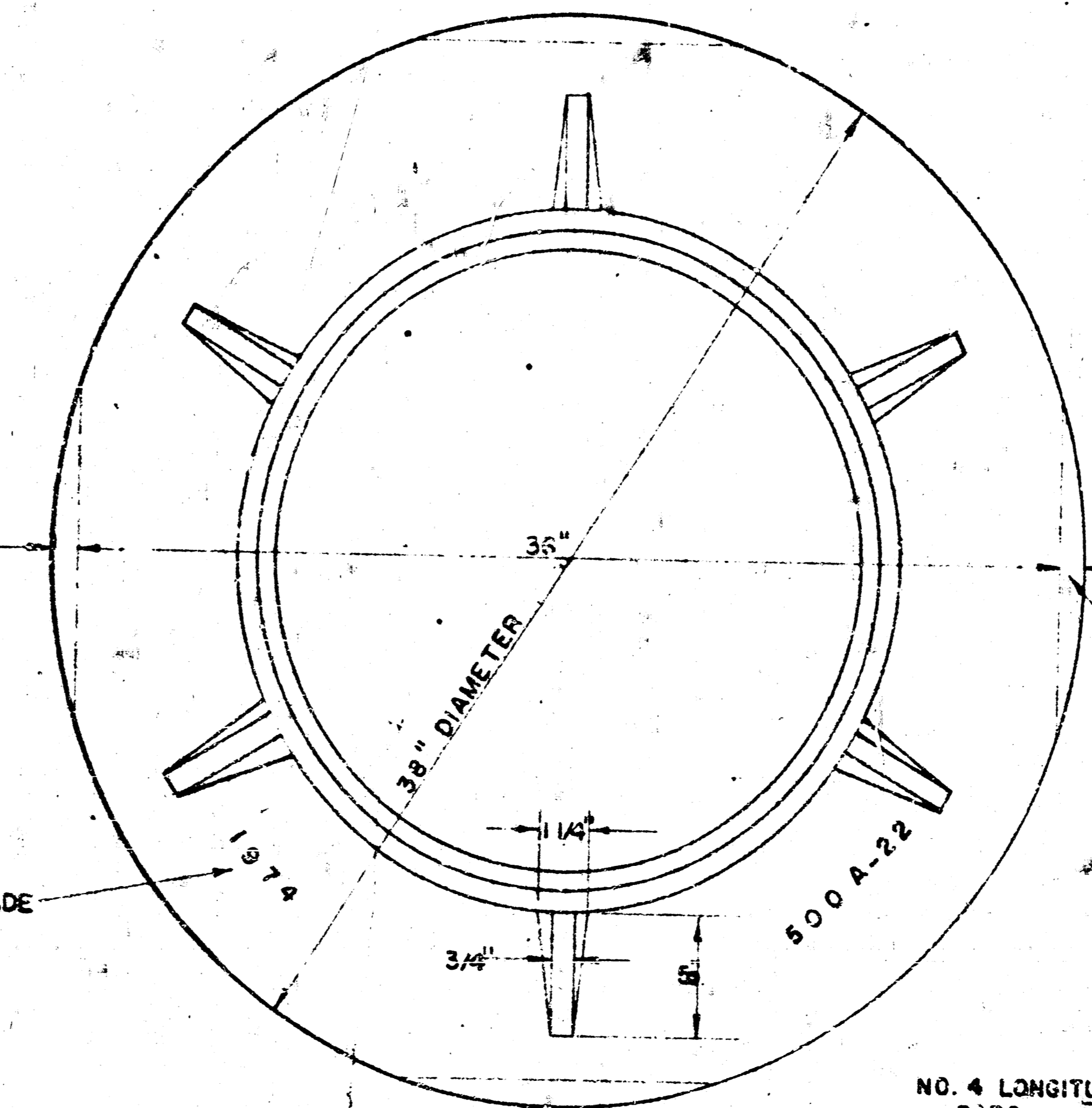
NOTE: REINFORCING STEEL SHALL BE INSTALLED IN THE MANHOLE BASES 6" ABOVE THE BOTTOM. REINFORCING STEEL SHALL CONSIST OF NO. 4 BARS PLACED ON 6" CENTERS IN BOTH DIRECTIONS. THE COST OF REINFORCING STEEL IS TO BE INCLUDED IN THE PRICE BID FOR THE MANHOLE.



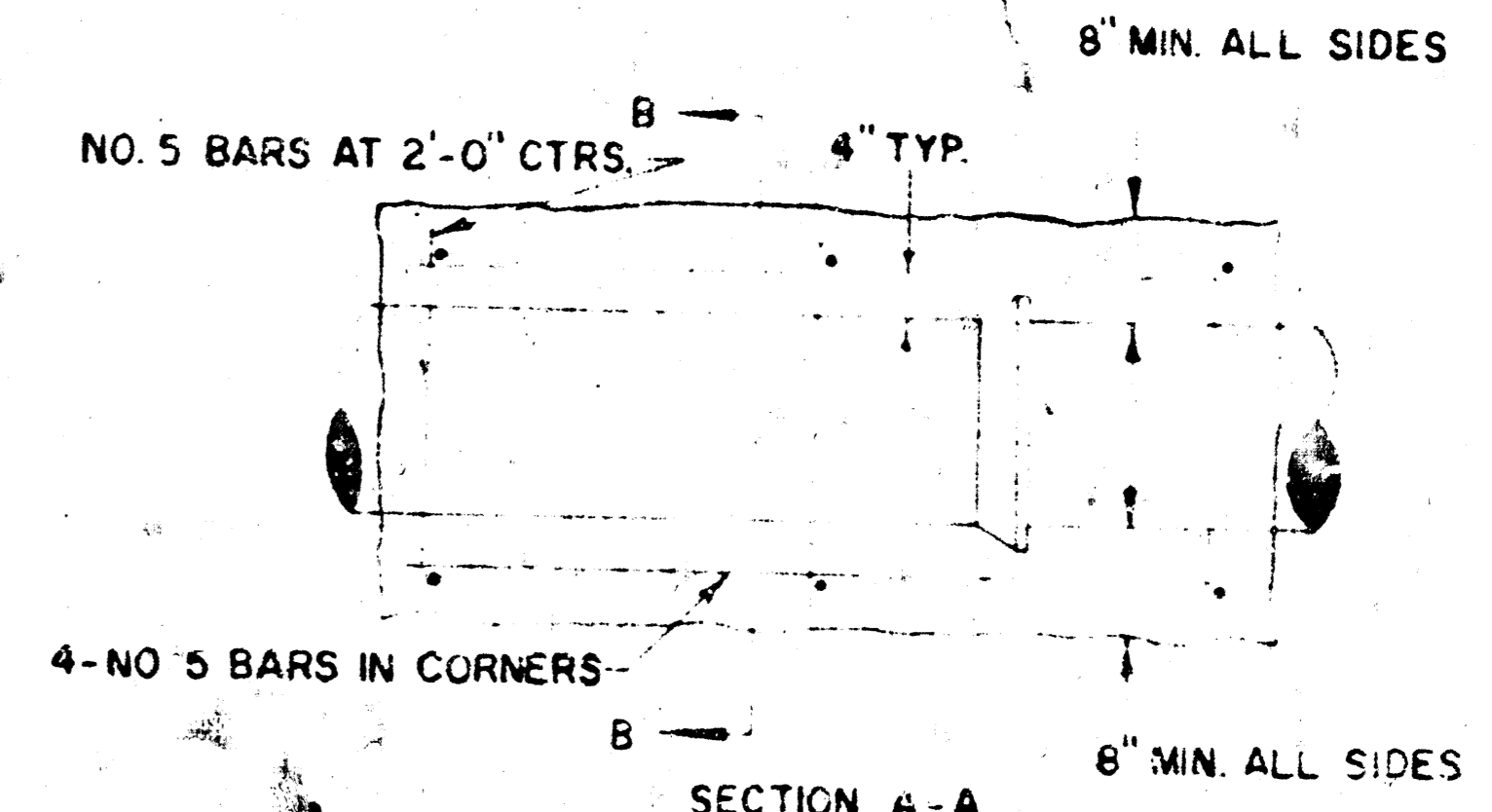
DETAIL OF DROP STACK FOR EXISTING MANHOLES IN GROUND WATER



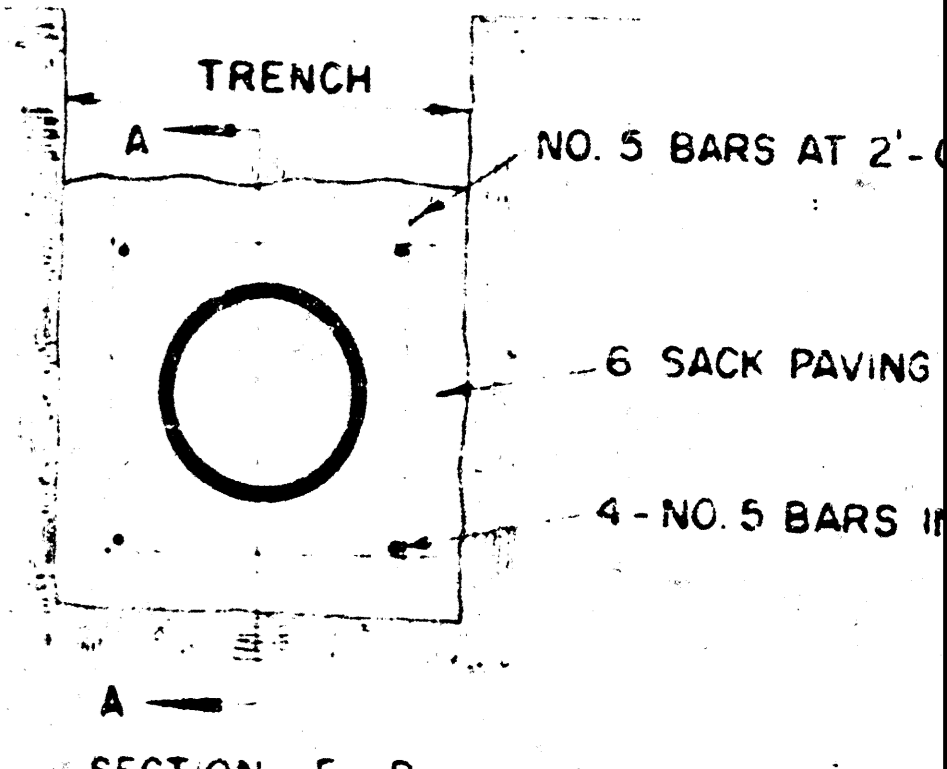
TOP VIEW MANHOLE COVER WEIGHT 110 LBS.



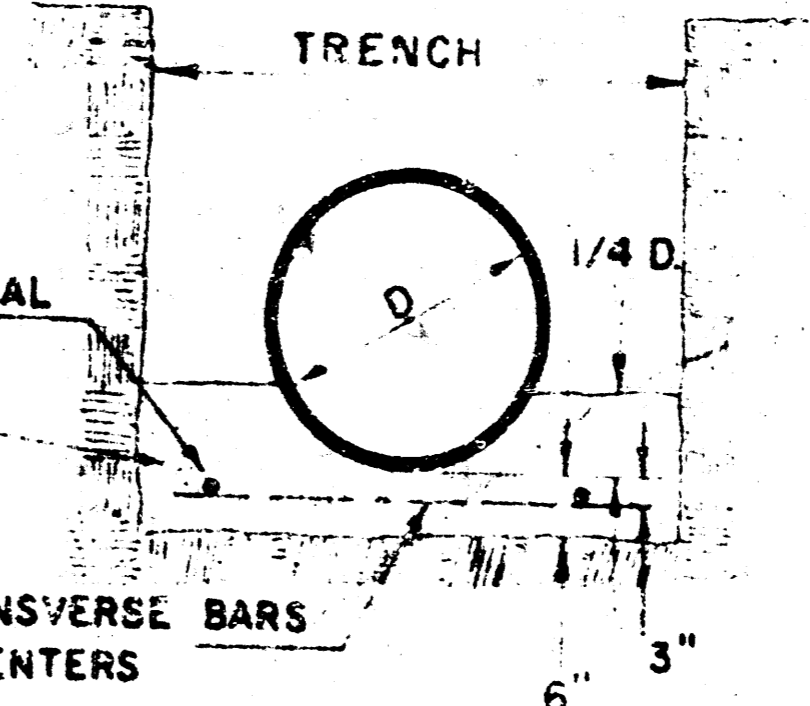
TOP VIEW MANHOLE RING WEIGHT 325 LBS. RING NO. 500A WEIGHT 300 LBS. RING NO. 500AS



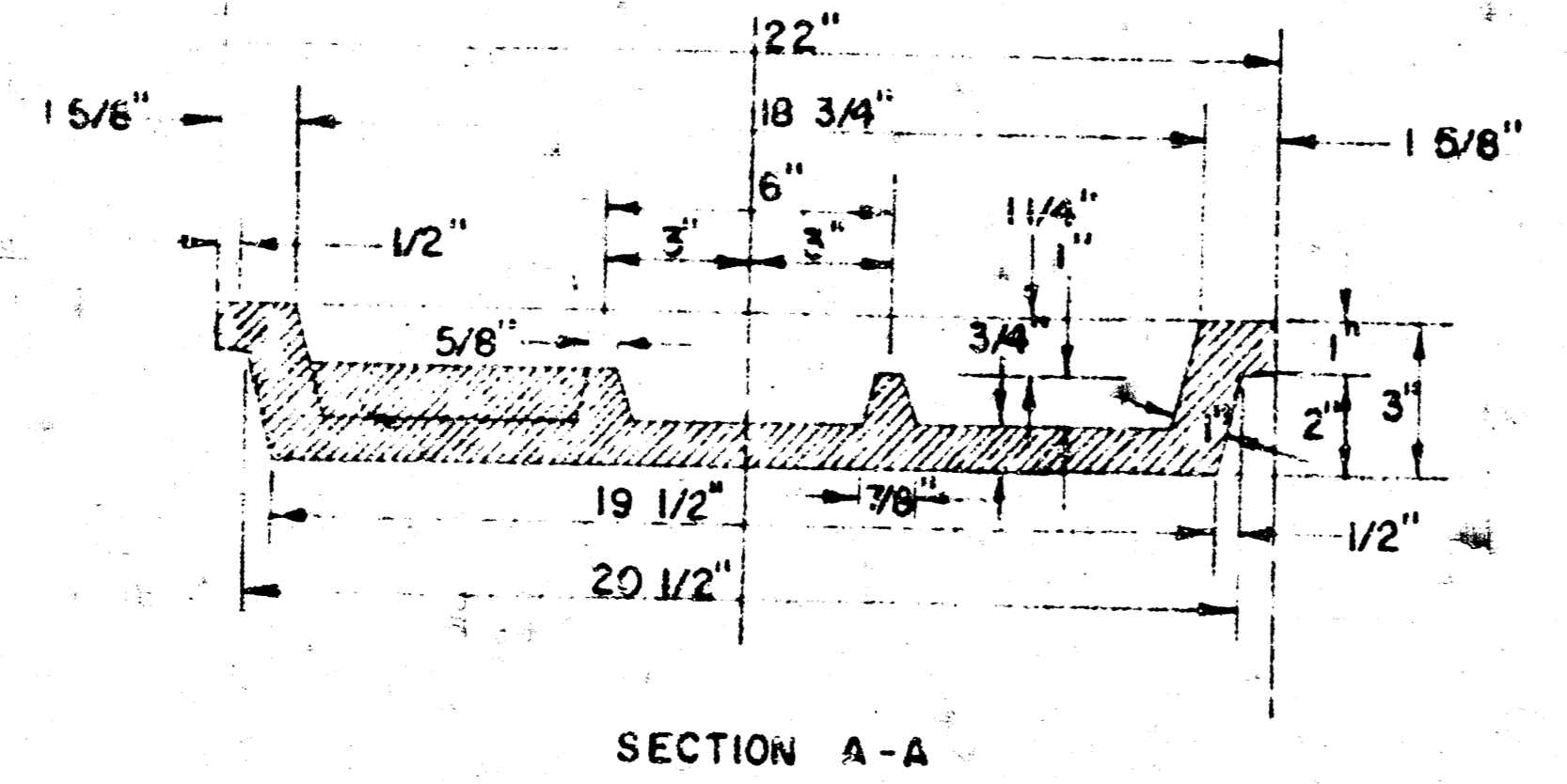
SECTION A-A REINFORCED CONCRETE ENCASEMENT



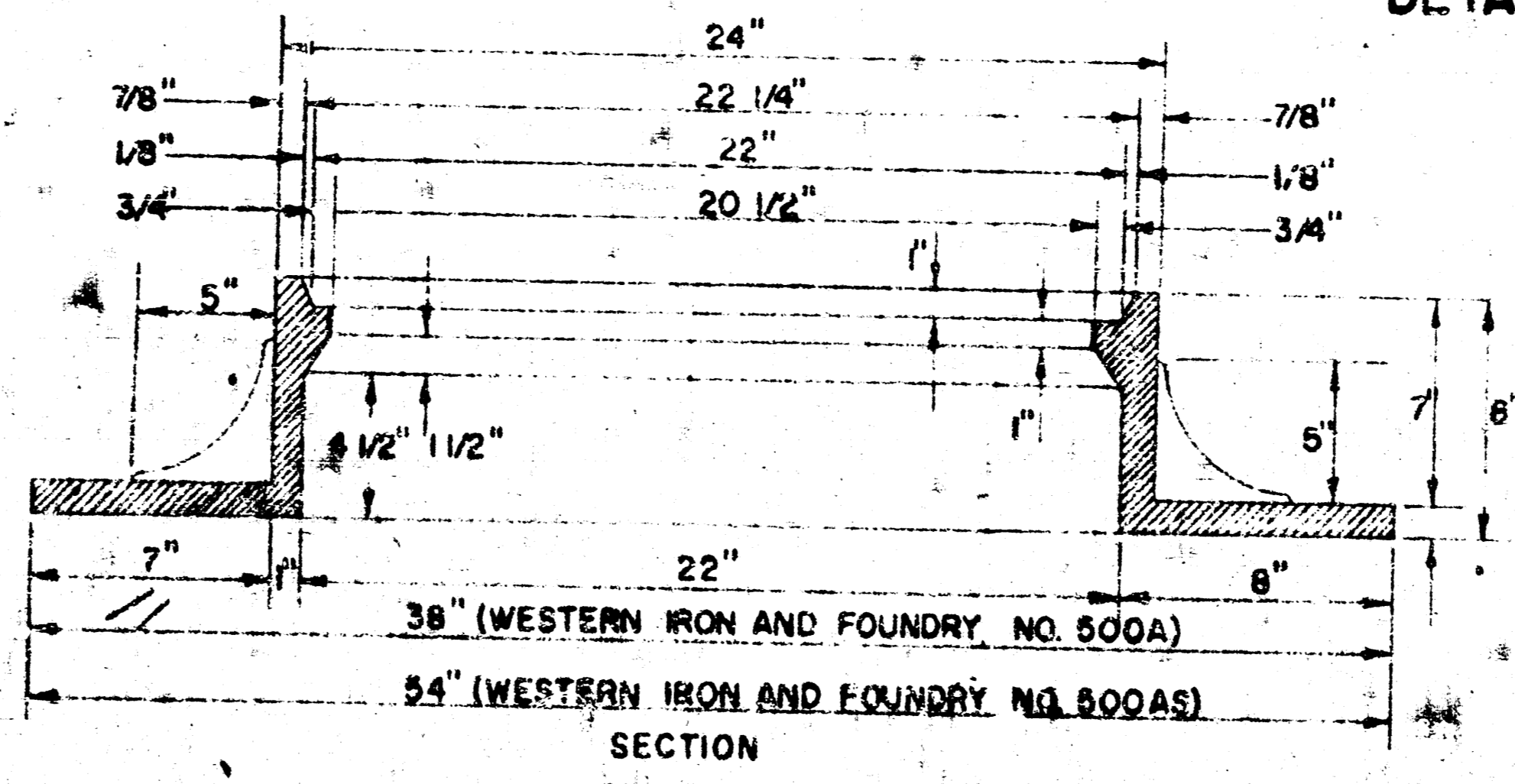
SECTION B-B REINFORCED CONCRETE ENCASEMENT



DETAIL OF CONCRETE CRADLE



SECTION A-A MANHOLE COVER



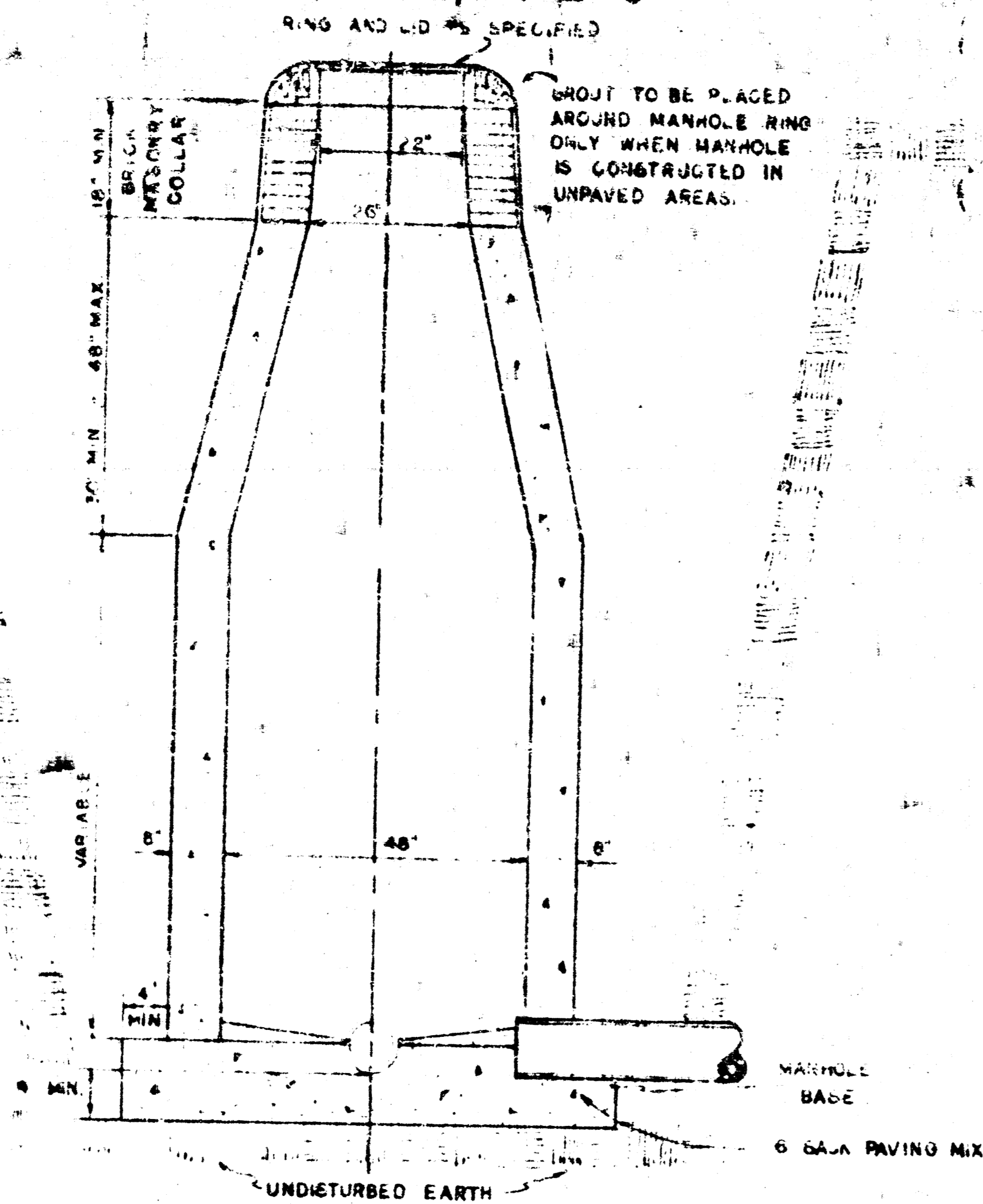
SECTION MANHOLE RING

ORDINARY BEDDING METHOD STORM SEWER PIPE

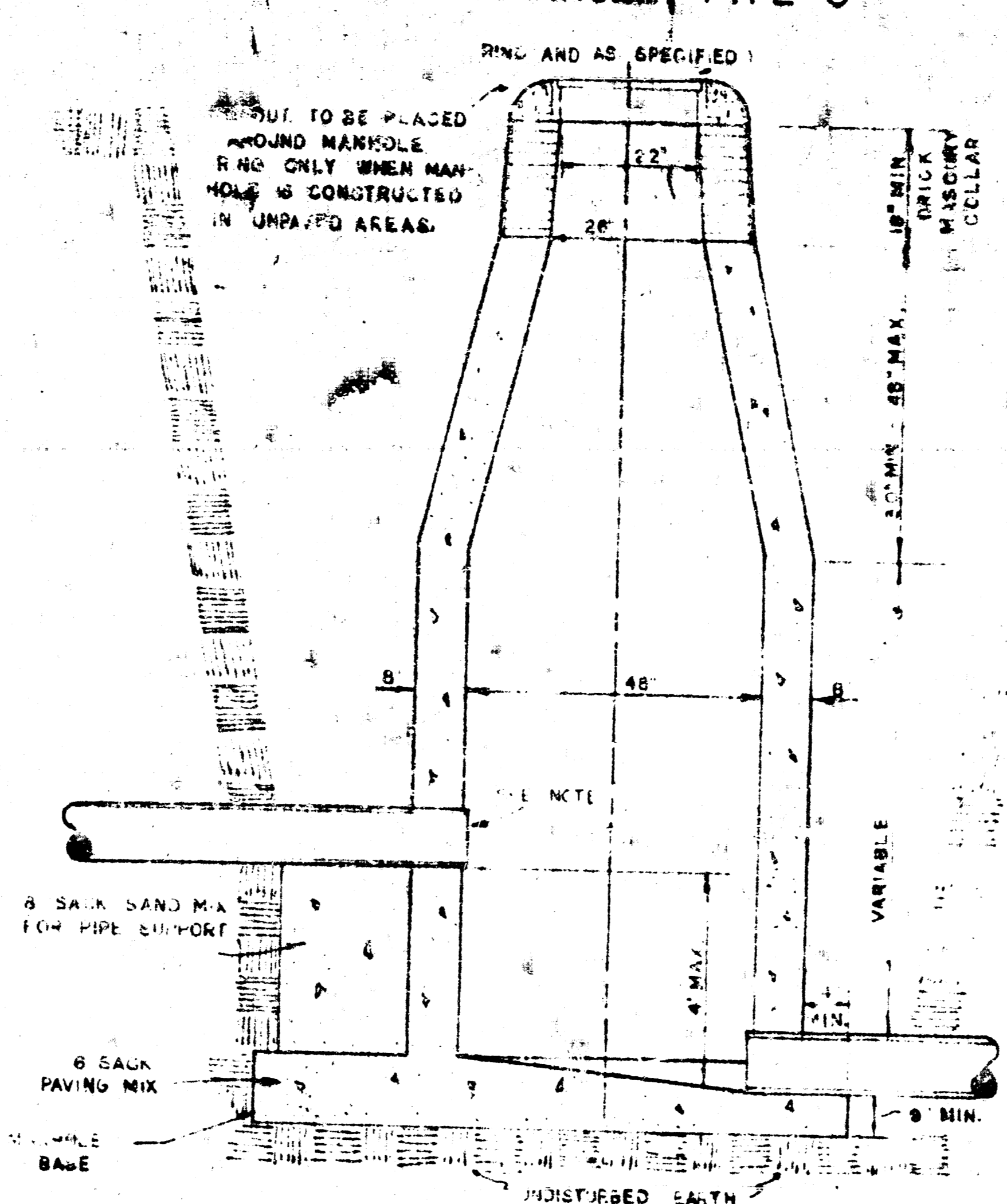
**GENERAL NOTES**

- MORTAR USED IN MASONRY CONSTRUCTION SHALL CONTAIN 8 SACKS OF CEMENT PER CUBIC YARD.
- STANDARD MANHOLES TYPE "A" OR TYPE "B" AND STANDARD DROP MANHOLES TYPE "A" OR TYPE "B" SHALL BE BID AS STANDARD MANHOLES FOR THE TYPE AND DIAMETER INDICATED. OUTSIDE DROP MANHOLES SHALL BE BID AS STANDARD OUTSIDE DROP MANHOLES FOR THE TYPE AND DIAMETER INDICATED. ALL MANHOLE DIAMETERS WILL BE 4" UNLESS INDICATED OTHERWISE. MANHOLES WITH PIPE SIZES LARGER THAN 24" SHALL BE 5" DIAMETER.
- THE FLOORS OF ALL MANHOLES SHALL BE SHAPED TO INCREASE HYDRAULIC EFFICIENCY USING 8 SACK SAND MIX CONCRETE.
- PIPES INSTALLED WITHIN THE MANHOLE EXCAVATION SHALL BE CRADLED WITH CONCRETE TO THE LIMITS OF THE MANHOLE EXCAVATION. COST OF CRADLE WITHIN MANHOLE EXCAVATION SHALL BE INCLUDED IN THE PRICE BID FOR THE MANHOLE.

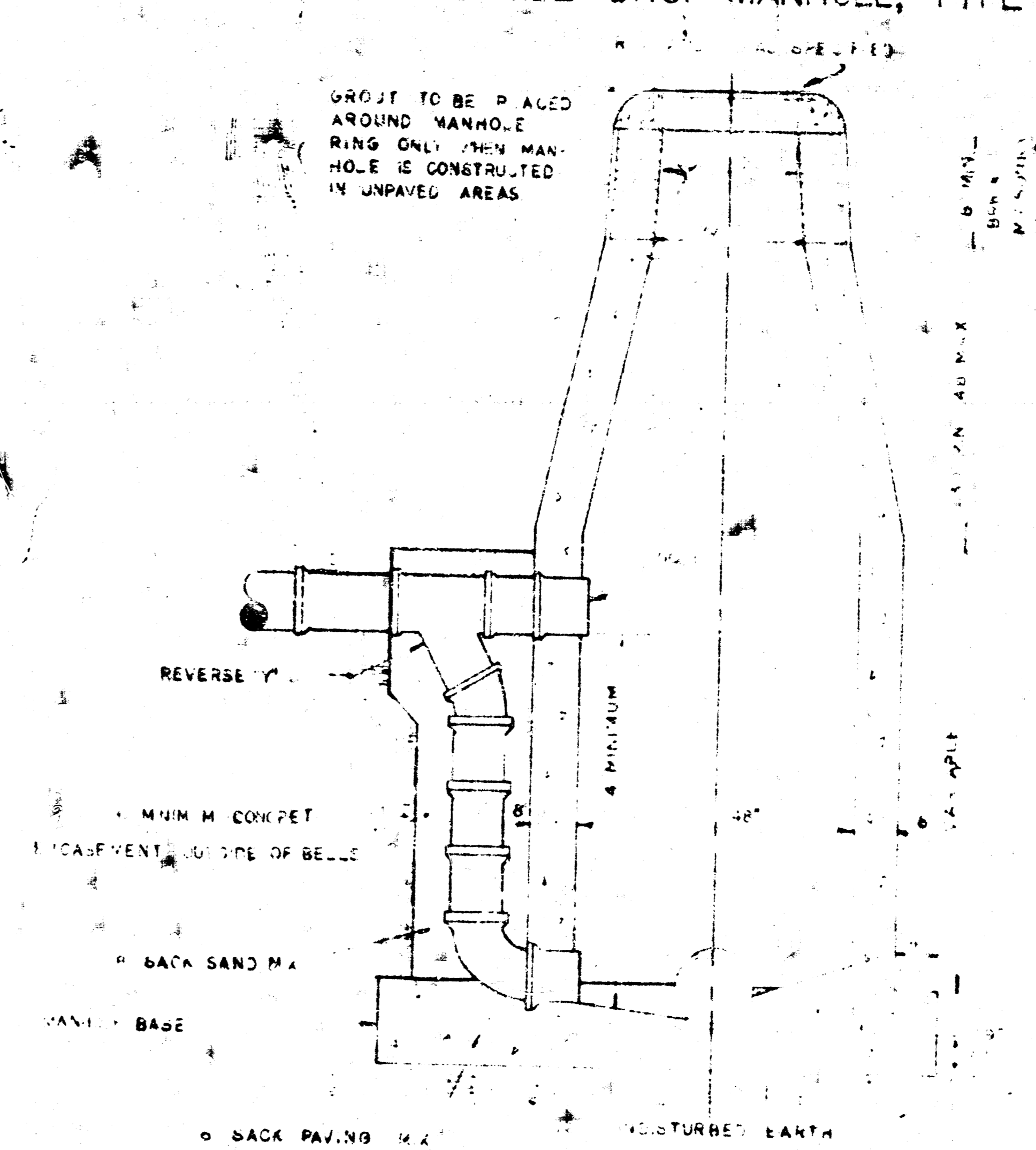
**STANDARD MANHOLE, TYPE "C"**



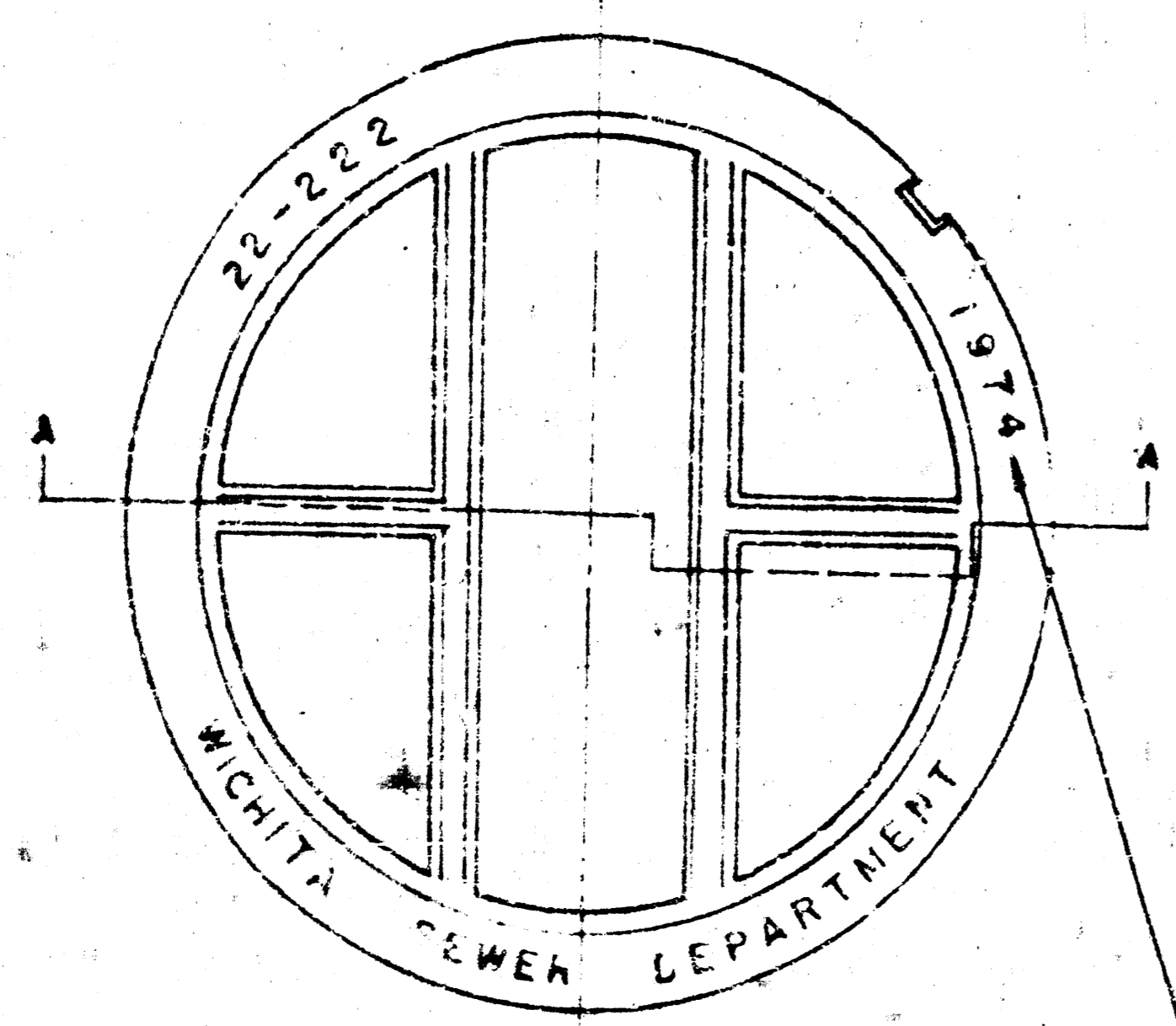
**DROP MANHOLE, TYPE "C"**



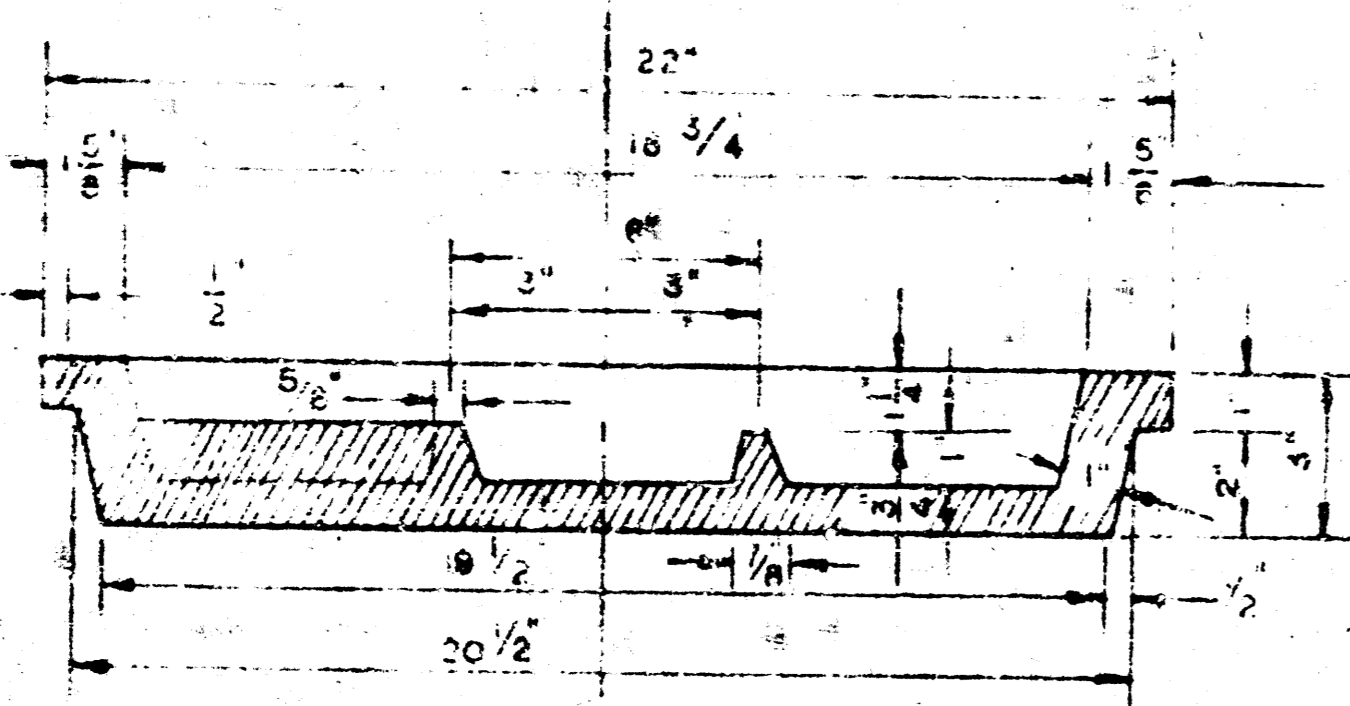
**OUTSIDE DROP MANHOLE, TYPE "C"**



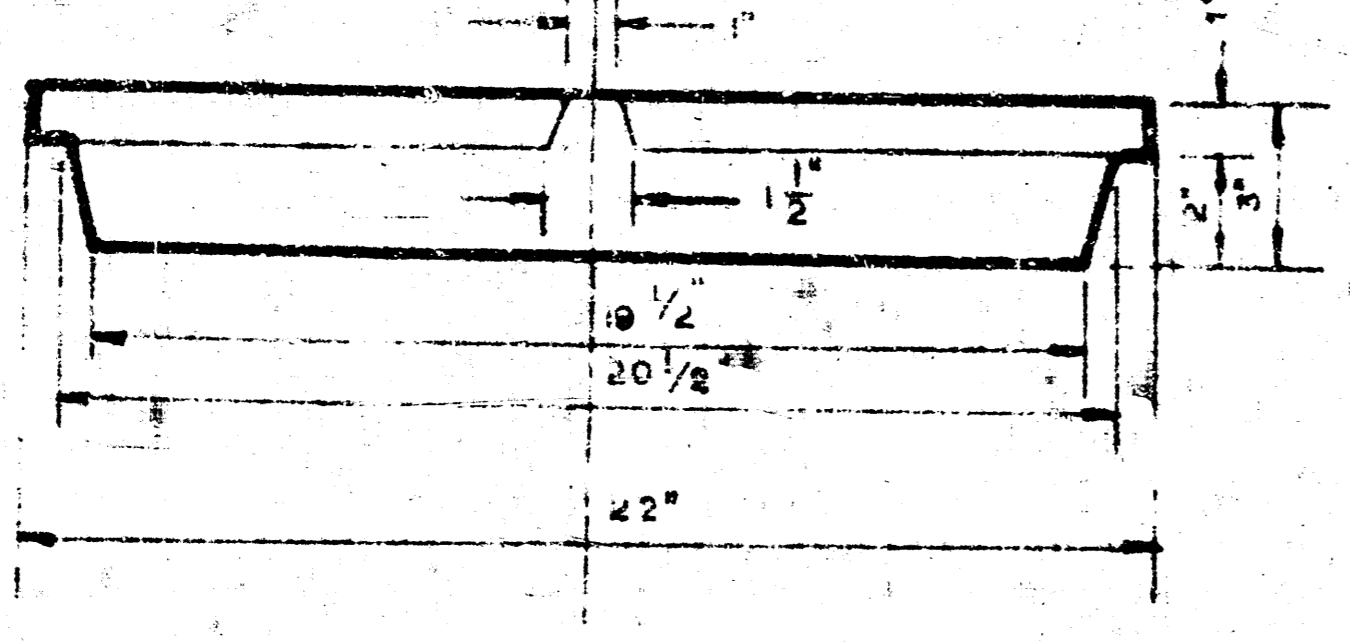
**NOTE:** REINFORCING STEEL SHALL BE INSTALLED IN THE MANHOLE BASES 6" ABOVE THE BOTTOM. REINFORCING STEEL SHALL CONSIST OF NO. 4 BARS PLACED ON 6" CENTERS IN BOTH DIRECTIONS. THE COST OF REINFORCING STEEL IS TO BE INCLUDED IN THE PRICE BID FOR THE MANHOLE.



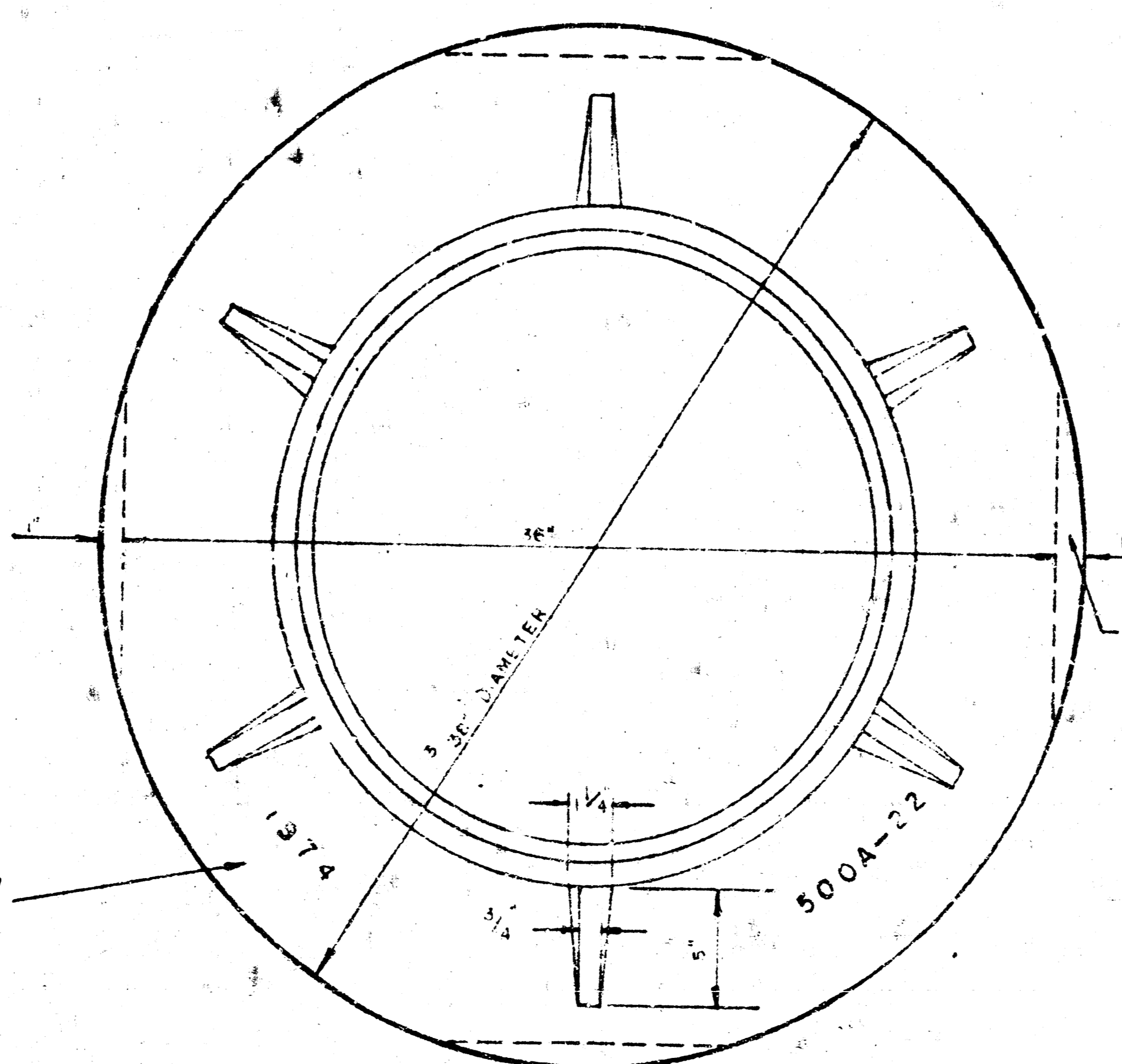
**MANHOLE COVER**



**MANHOLE COVER**



**SIDE VIEW**

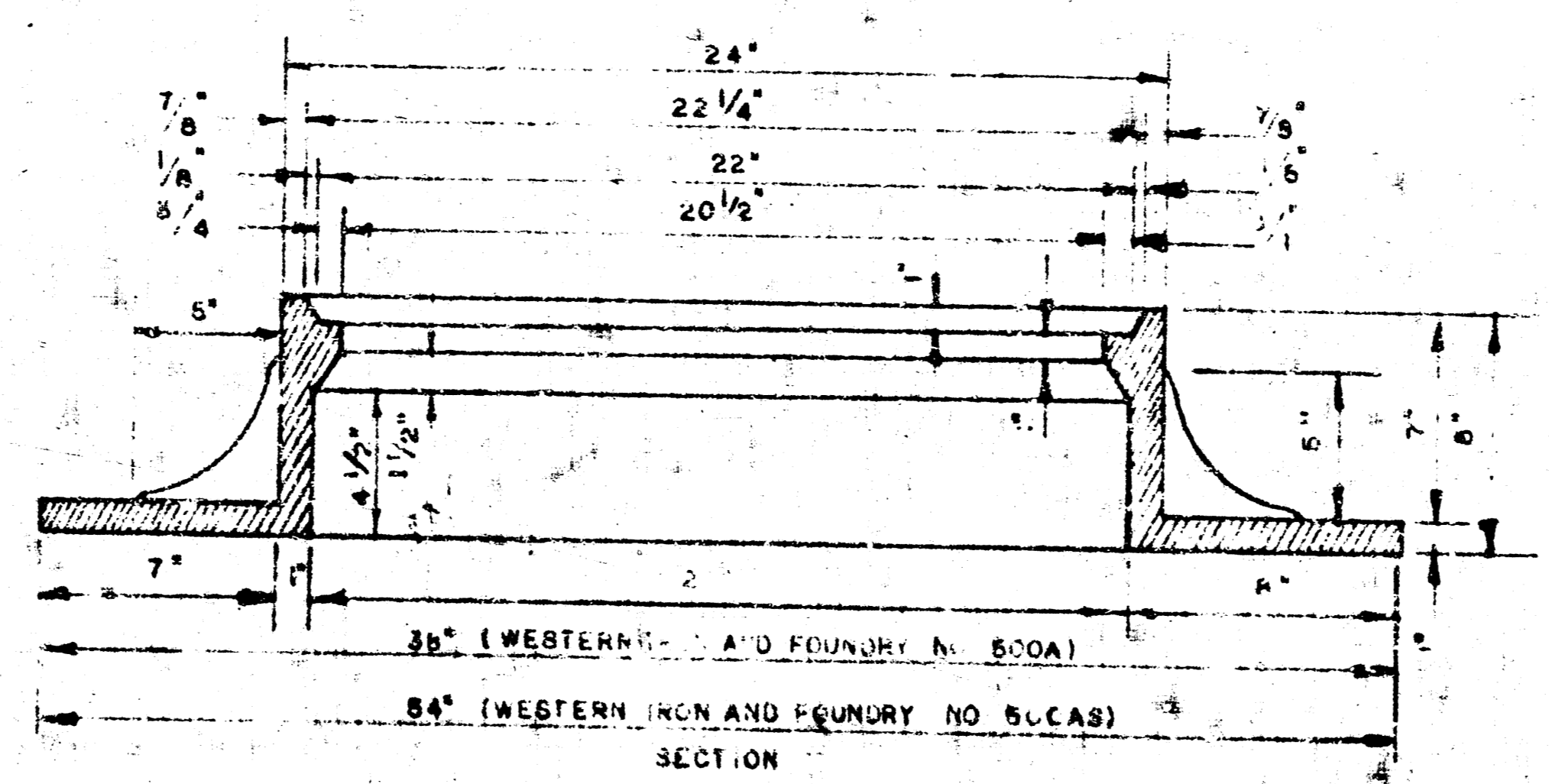


**MANHOLE RING**

WEIGHT 45 LBS. RING NO. 500A  
WEIGHT 80 LBS. RING NO. 500AS

YEAR CASTING IS MADE

CLASS OF CONCRETE TO BE USED IN THE INNER RING AND SEAT OF COVER TO BE DETERMINED BY THE ENGINEER



**SECTION**

**NOTE:** OPENING FOR INLET PIPE CUT IN MANHOLE WALL AND PIPE GROUDED IN PLACE WITH NON-SHRINKING GROUT. EXTERIOR OF COMPLETED CONNECTION TO BE SEALED WITH APPROVED COATING.

**SECTIONAL ELEVATION - INVERT**

**GENERAL NOTES**

MORTAR USED IN MASONRY CONNECTION SHALL CONTAIN 6 SACKS OF PER CUBIC YARD.

STANDARD MANHOLES TYPE AND STANDARD DROP MANHOLE TYPE "C" SHALL BE BID AS STANDARD HOLES FOR THE TYPE AND DIAMETER INDICATED.

OUTSIDE DROP MANHOLES TYPE SHALL BE BID AS STANDARD OUTSIDE DROP MANHOLES FOR THE TYPE AND DIAMETER INDICATED. ALL MANHOLE DIAMETERS WILL BE 4 FT UNLESS INDICATED OTHERWISE. MANHOLES WITH PIPE SIZES LARGER THAN 24" SHALL BE 5 FT DIAMETER.

THE FLOORS OF ALL MANHOLES SHALL BE SHAPED TO INCREASE HYDRAULIC EFFICIENCY USING 8 SACK MIX CONCRETE.

CAST IN PLACE CIRCULAR CONCRETE MANHOLES ARE TO BE CONSTRUCTED ONLY ON SEWERS NOT SUBJECT TO DETERIORATION OF CONCRETE DUE TO FORMATION OF HYDROGEN SULFIDE GAS AND IN LOCATIONS WHERE IT IS OBVIOUS THAT ANY ADJUSTMENT OF THE MANHOLE TOP ELEVATION WHICH MAY BE NECESSARY WILL REQUIRE MODIFICATION OF THE CONCRETE BARREL.

PIPES INSTALLED WITHIN THE MANHOLE EXCAVATION SHALL BE CRADLED WITH CONCRETE TO THE LIMITS OF THE MANHOLE EXCAVATION. COST OF CRADLE WITHIN MANHOLE EXCAVATION SHALL BE INCLUDED IN THE PRICE BID FOR THE MANHOLE.

REVISED  
DETAILS OF  
**SEWER APPURTENANCES**  
ADOPTED AS STANDARD DE  
BY  
ENGINEERING DIVISION