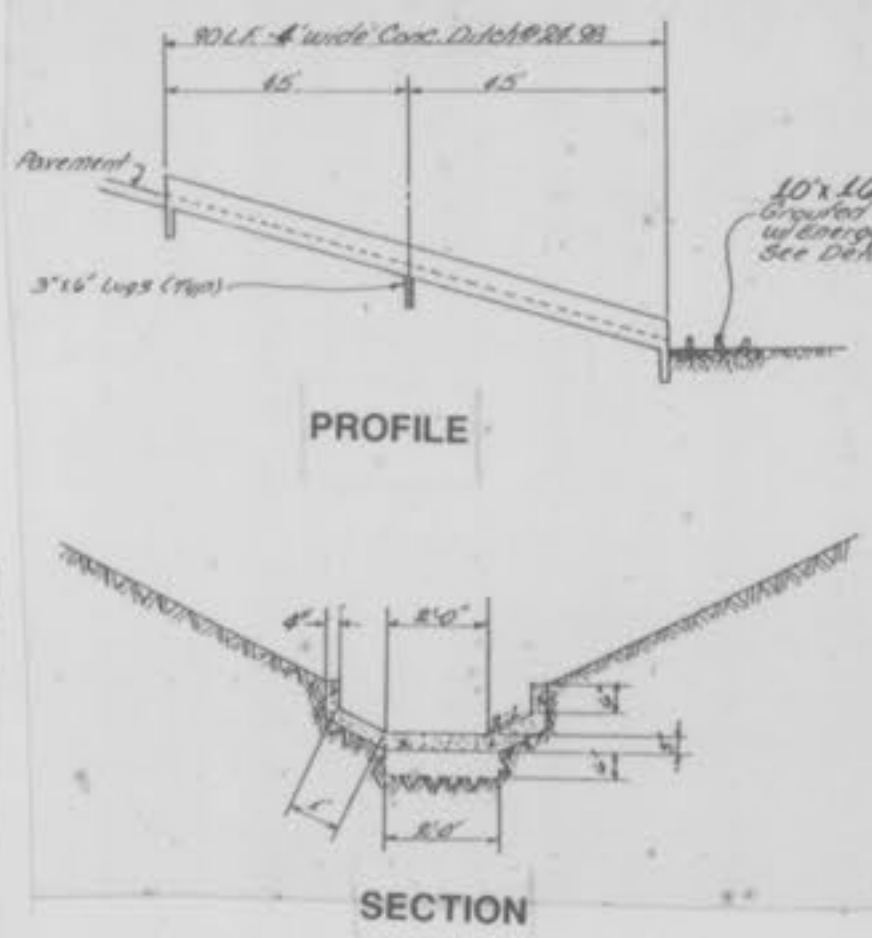
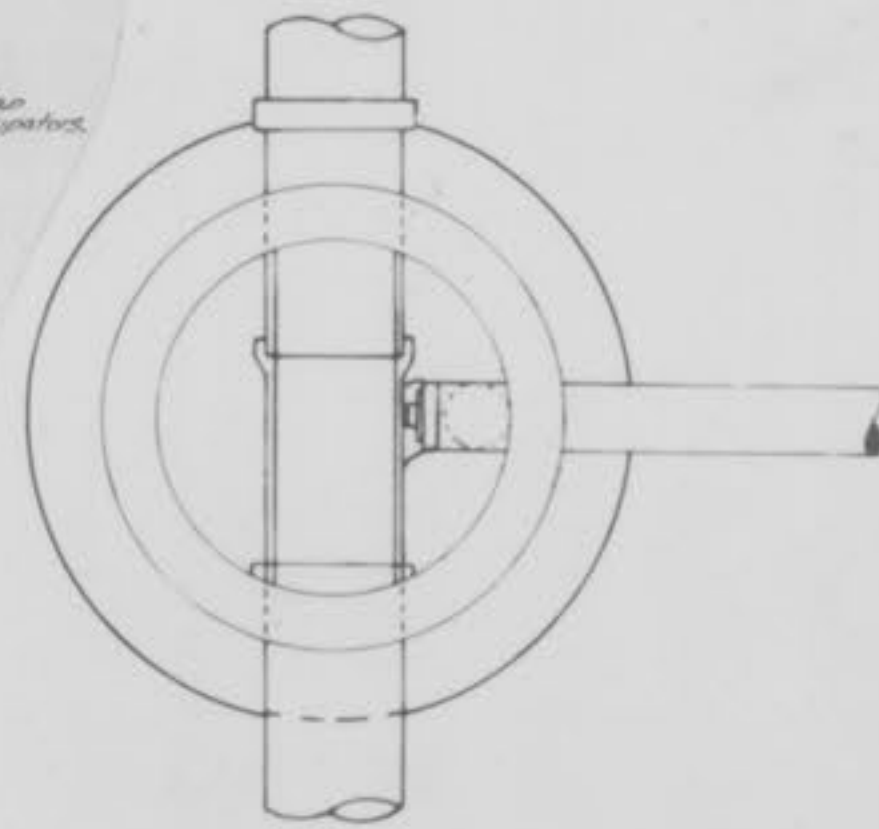


WALL THICKNESS	
DIA MH	"D" DIM PRE CAST
42" & 48"	5"
60"	6"
72"	7"

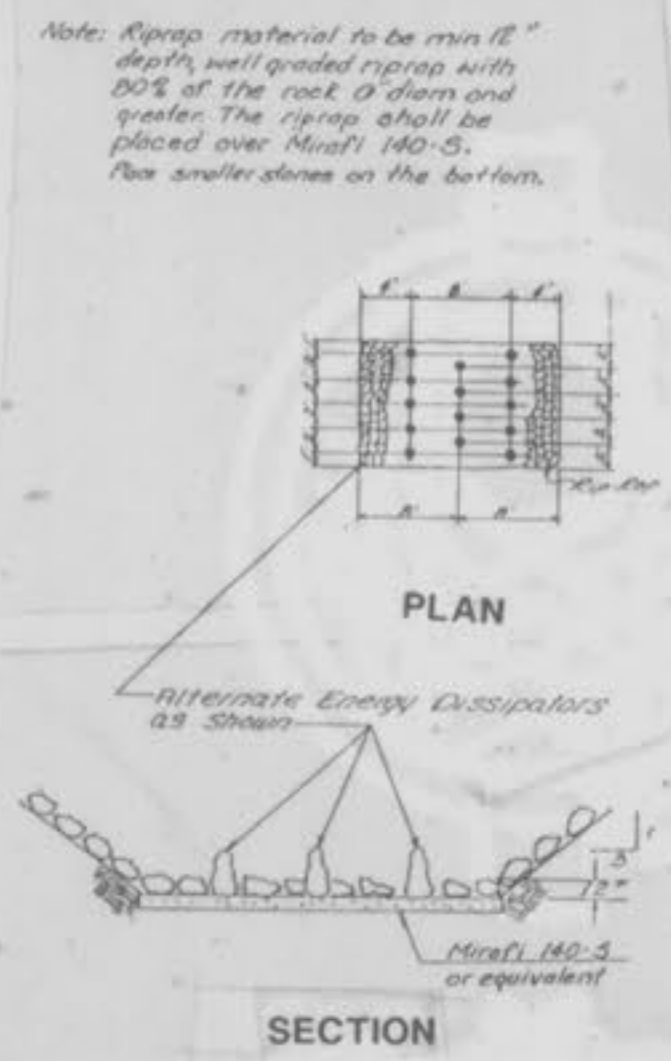
MANHOLE BASE THICKNESS	
DEPTH (FEET)	"D" DIM
0-20	8" w/ 4 BARS @ 12" CTRS EACH WAY
20-30	8" w/ 4 BARS @ 9" CTRS EACH WAY
30-40	10" w/ 5 BARS @ 10" CTRS EACH WAY



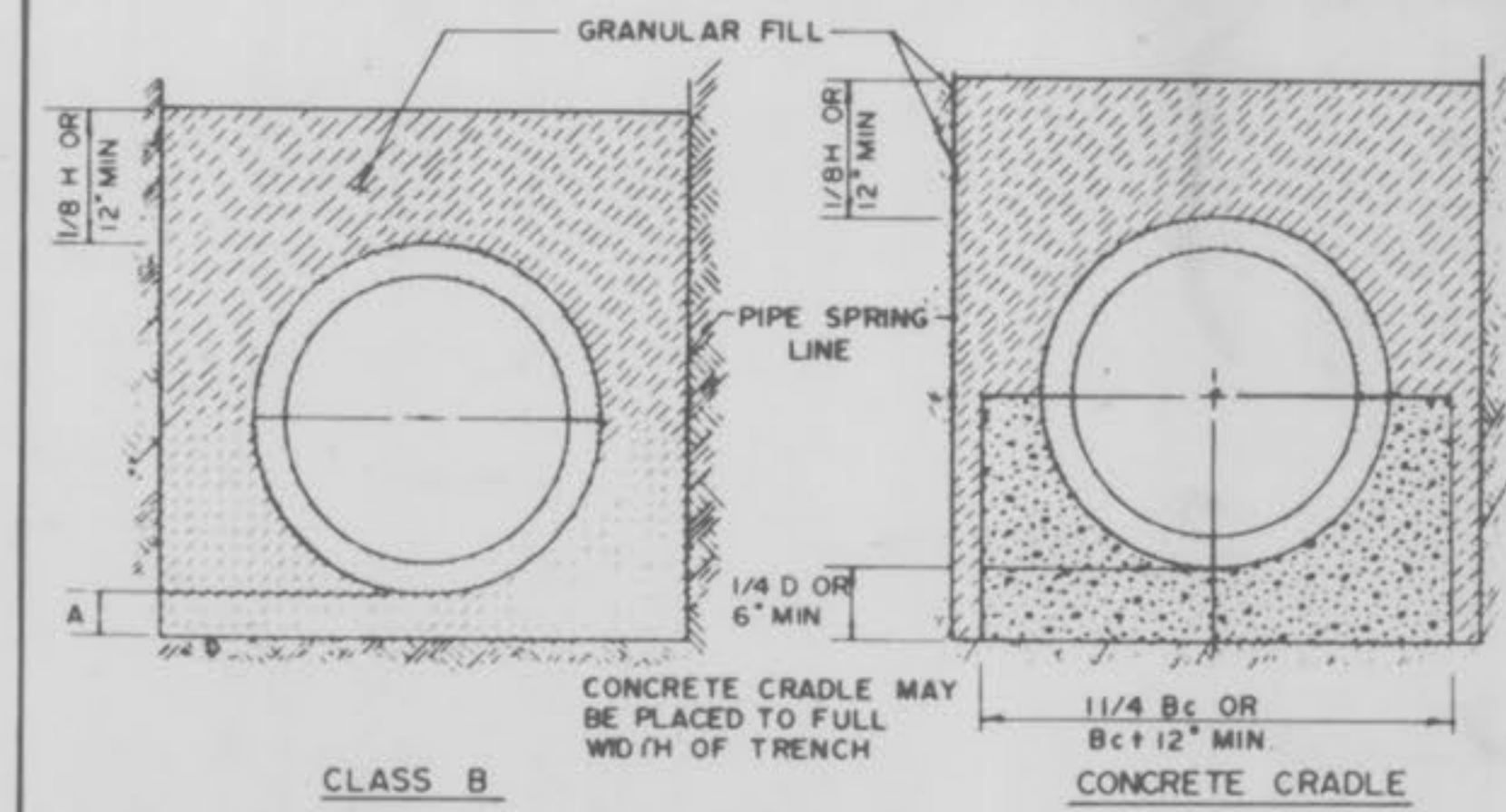
CONCRETE DITCH DETAIL n.t.s.



PLAN DROP MANHOLE



RIP-RAP W/ENERGY DISSIPATORS DETAIL n.t.s.



BEDDING DETAILS

LEGEND:
 Bc OUTSIDE DIA OF PIPE
 Hc BACKFILL COVER ABOVE TOP OF PIPE
 D NOMINAL PIPE SIZE
 A FILL BELOW PIPE (SEE TABLE B1 LOW)

GRANULAR FILL
 CONCRETE

TABLE OF FILL BELOW PIPE

D	A MIN.
27" & SMALLER	3"
30" TO 60"	4"
66" & LARGER	6"

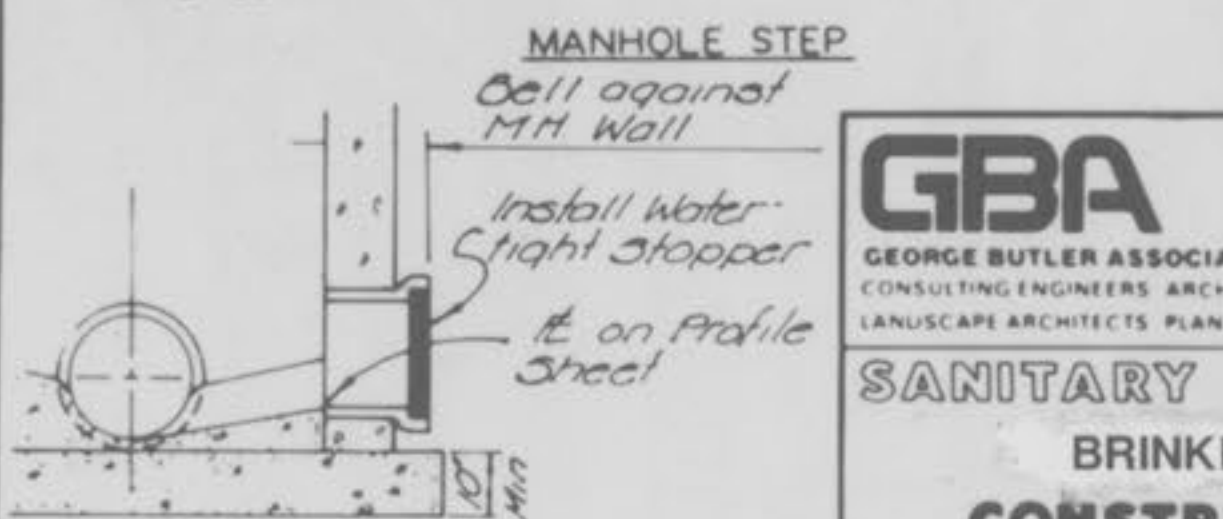
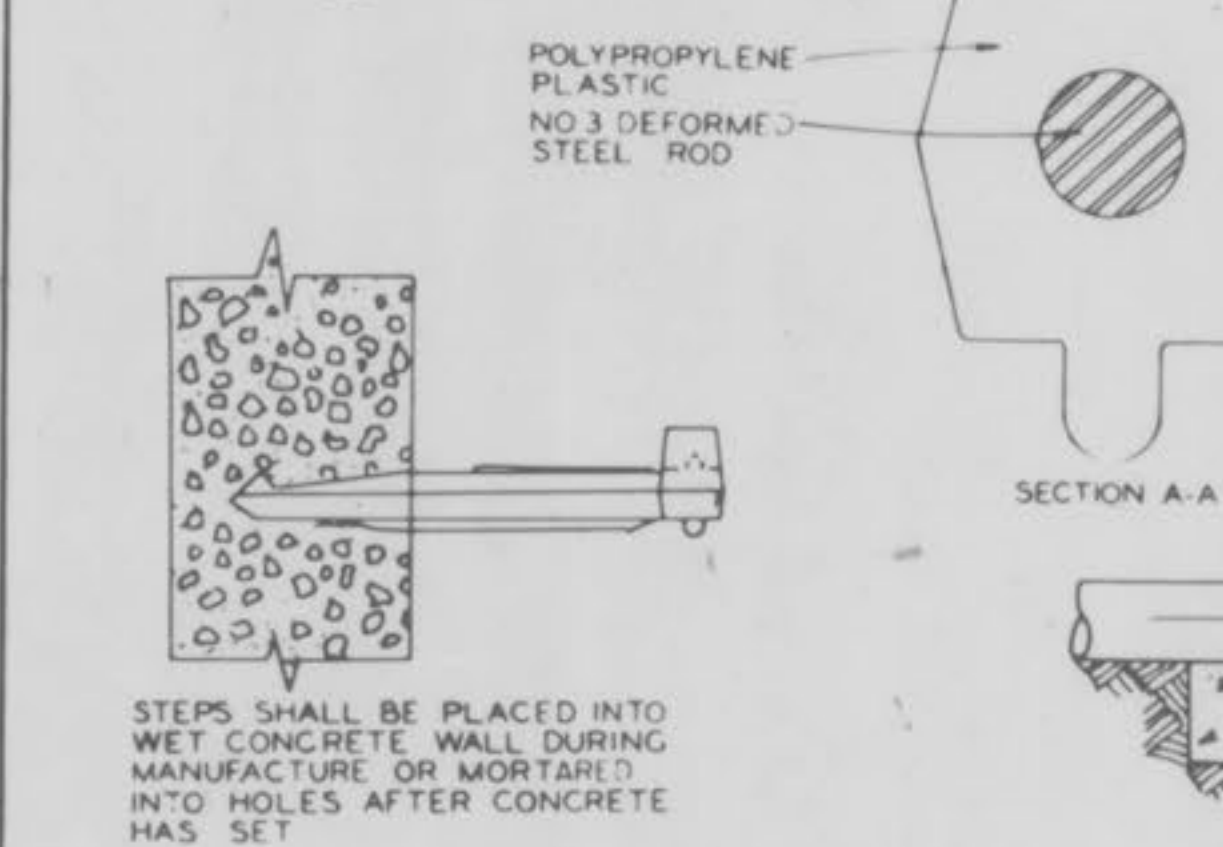
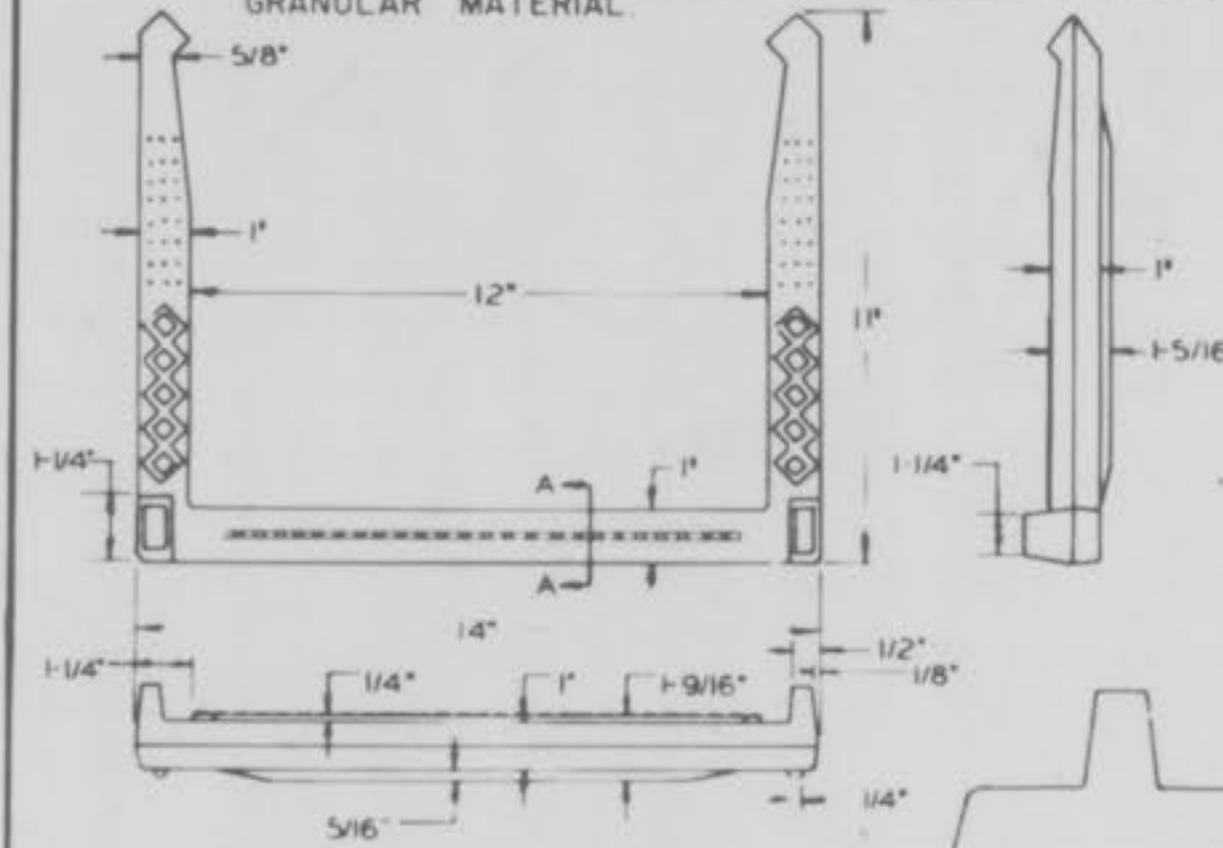
NOTES

1. GRANULAR FILL TO BE CRUSHED STONE OR PEA GRAVEL WITH NOT LESS 95% PASSING 1/2" AND NOT LESS THAN 95% TO BE RETAINED ON A #4, TO BE PLACED IN NOT MORE THAN 6" LAYERS AND COMPACTED BY SLICING WITH A SHOVEL (1/2" & #4 REFERS TO SIEVE SIZE)

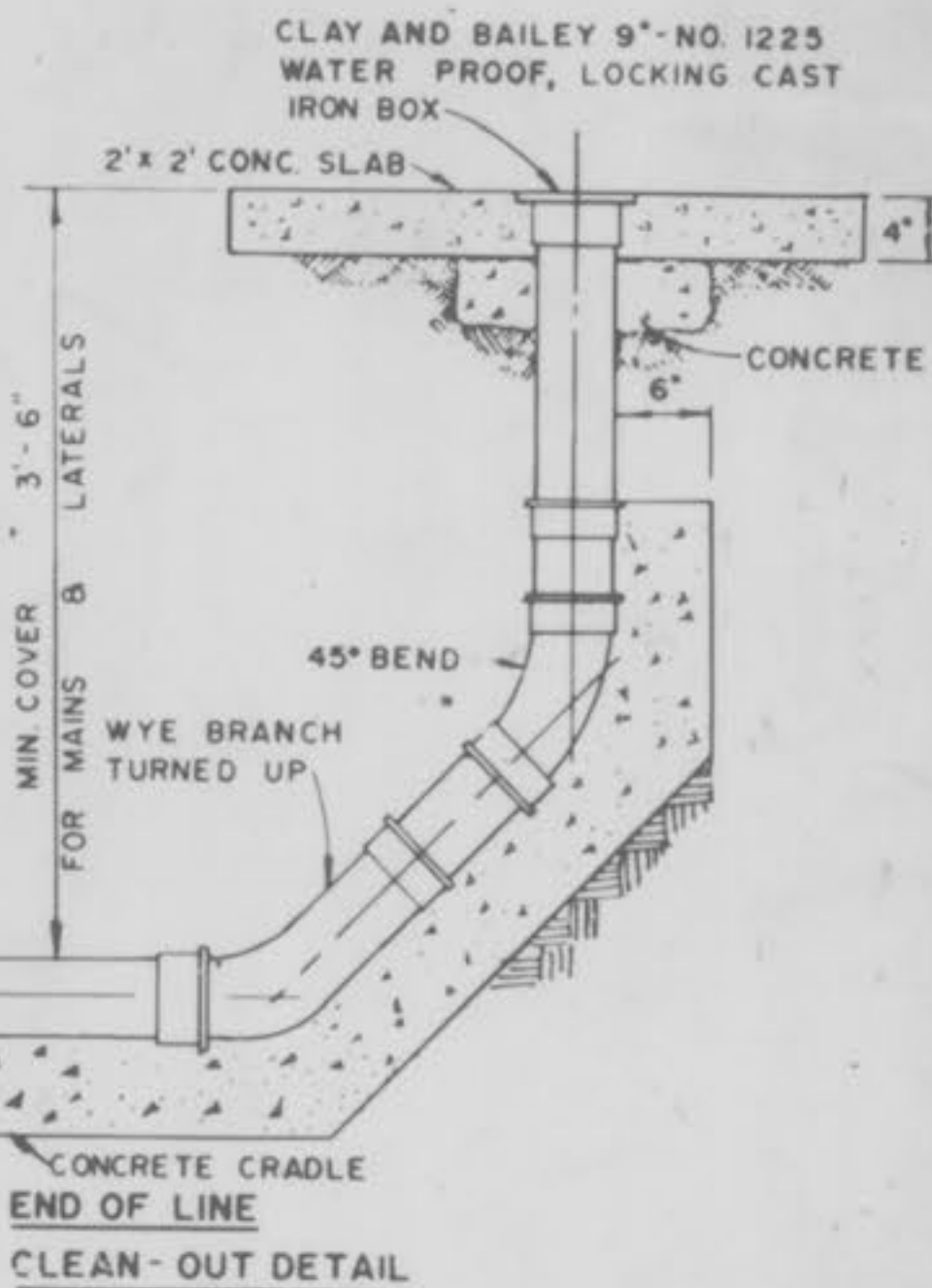
2. ALL BEDDING DETAILS APPLY TO BUILDING SEWER SERVICE LINES AS WELL AS OTHER SEWERS.

3. CONCRETE CRADLE SHALL BE USED WHEN TRENCH WIDTH EXCEEDS 24" PLUS THE PIPE DIAMETER.

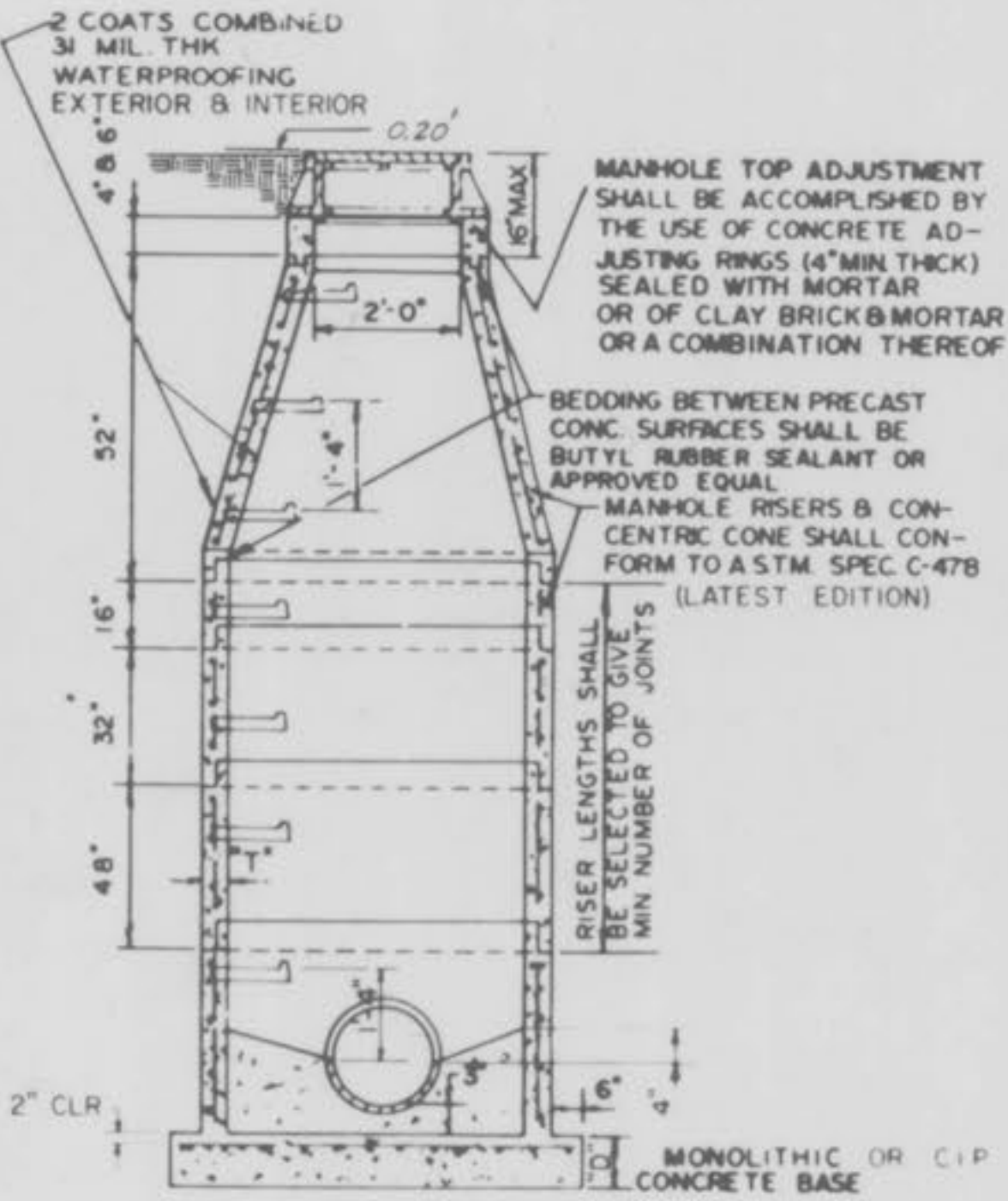
4. PVC PIPE SHALL BE BEDDED IN ACCORDANCE WITH ASTM D 2321 USING CLASS 1 (3/4" TO 1/4") GRANULAR MATERIAL.



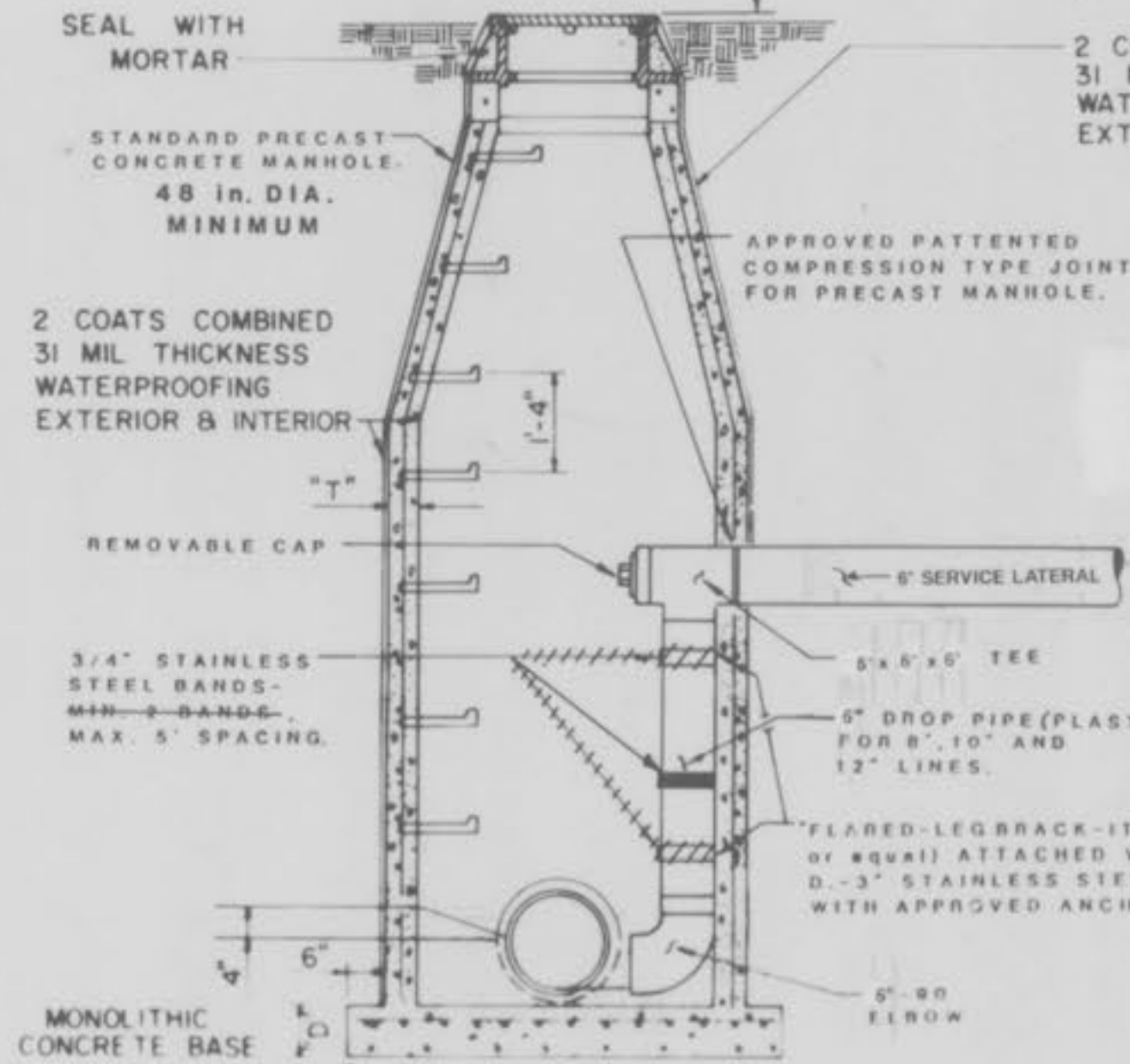
MANHOLE STUBOUT



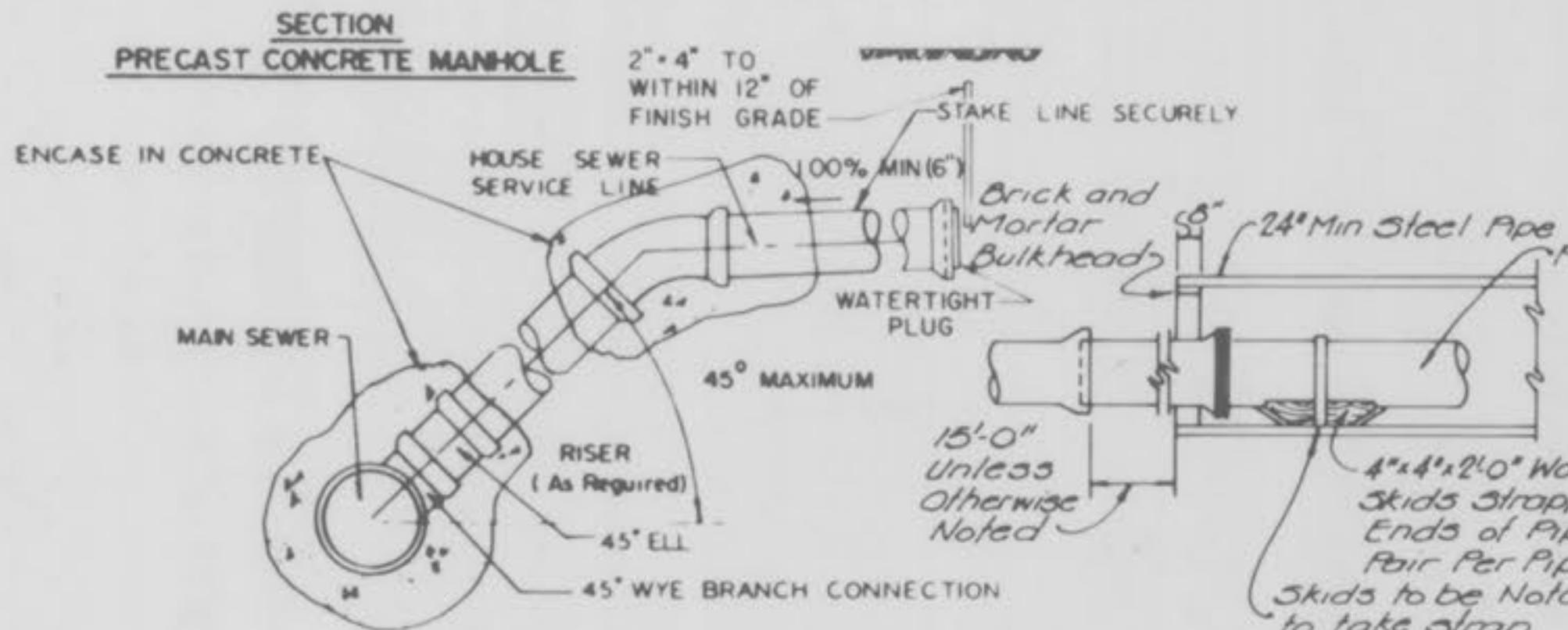
CLEAN-OUT DETAIL



SECTION PRECAST CONCRETE MANHOLE



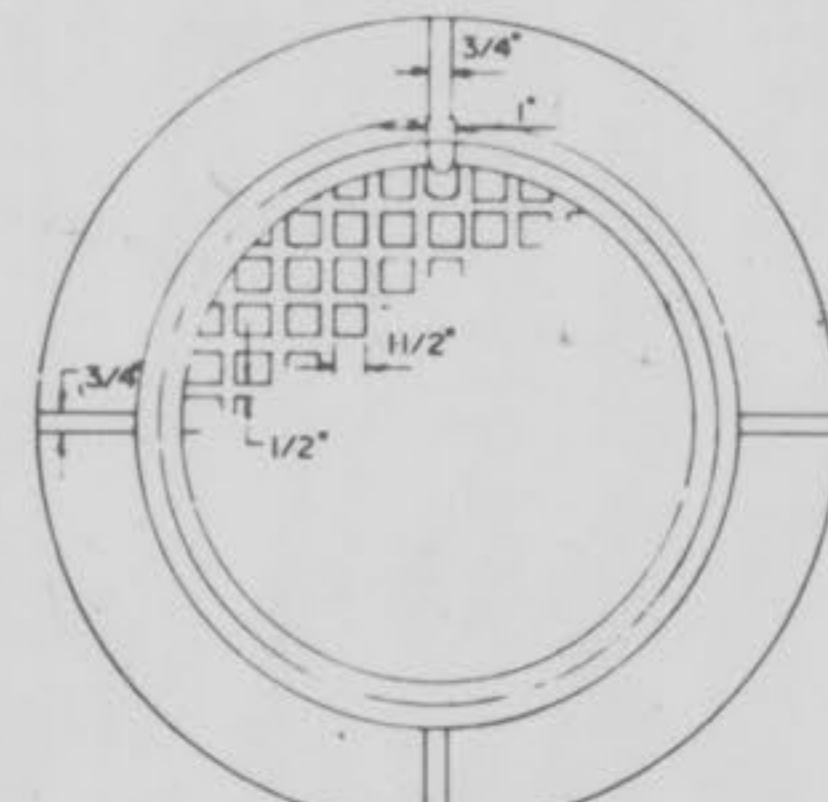
SECTION INSIDE DROP MANHOLE



SEWER SERVICE CONNECTION

NOTES:

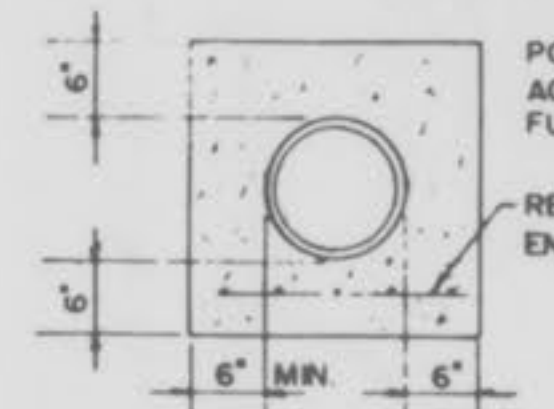
1. ANY MATERIAL EXCAVATED BENEATH PIPE ENTERING OR LEAVING MANHOLES SHALL BE REPLACED WITH CONCRETE.
2. ALL MANHOLE RINGS AND ADJUSTING RINGS SHALL BE SET IN MORTAR.
3. INSIDE DIAMETER OF MANHOLES TO BE 4'-0" FOR PIPE 21" & SMALLER, 5'-0" FOR PIPE 24" THRU 30", 6'-0" FOR PIPE OVER 30".
4. PLASTERING OF INSIDE OF MANHOLES SHALL BE THE OPTION OF THE CONTRACTOR.
5. ALL SEWERS EXTENDING FROM MANHOLES SHALL BE SUPPORTED WITH CONCRETE TO FIRST JOINT.
6. CONTRACTOR SHALL BE PAID FOR 6" CONCRETE ENCASUREMENT AROUND PIPE AS SHOWN IN DETAIL.
7. LAMP LINES BEFORE AND AFTER INSTALLATION OF CONCRETE ENCASUREMENT.
8. PRECAST MANHOLE SHALL BE WATERPROOFED OUTSIDE.
9. ALL CONC MANHOLES TO HAVE RUBBER GASKET ON ALL PIPE OPENINGS.
10. ALL PVC PIPE TO BE SDR-35.



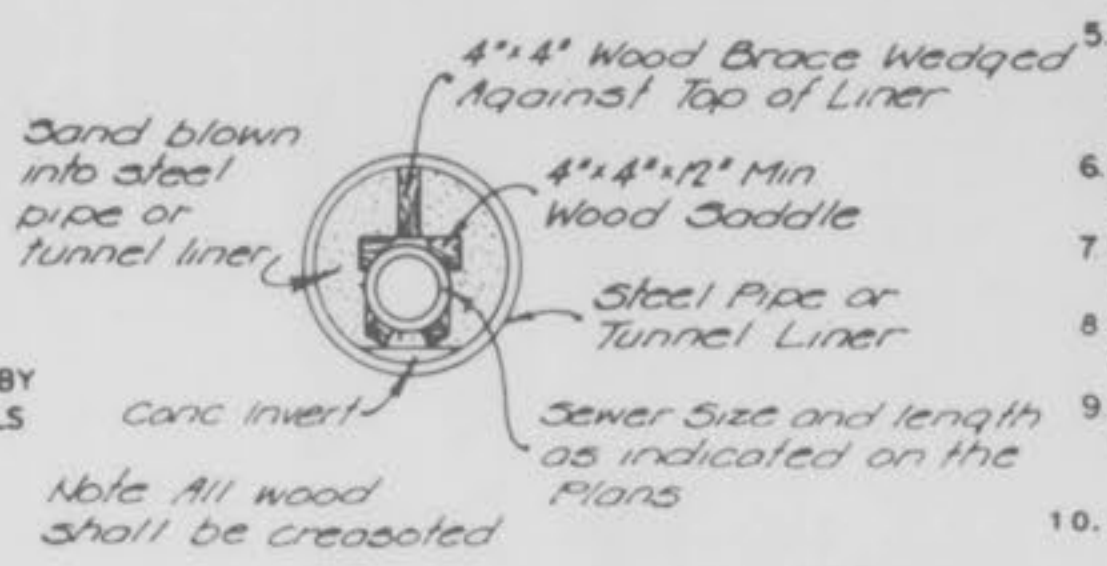
STANDARD MANHOLE RING AND COVER

CLAY & BAILEY - NO 2008 (NO. 2014 OR) *
 NEENAH - R-1736 (SPECIAL R-1736) *
 DEETER - 1315 (NO. 1313 O-RING)
 OR EQUAL

* INDICATES OPTIONAL BOLT DOWN LID



CONCRETE ENCASUREMENT



DETAIL OF CROSSING IN CONDUIT

GBA
 GEORGE BUTLER ASSOCIATES
 CONSULTING ENGINEERS, ARCHITECTS
 LANDSCAPE ARCHITECTS, PLANNERS

OFFICES:
 2415 100th & HARWAY DRIVE CENTER
 2415 JOHNSON DRIVE SHAWNEE MISSOURI KANSAS CITY
 1100 CITY CENTER SQUARE
 1100 MAIN KANSAS CITY MISSOURI 64105
 5011 118th LAYTON PLAZA
 6701 CORPORATE DRIVE KANSAS CITY MISSOURI 64120

SANITARY SEWER EXTENSIONS
BRINKER TRACTOR SALES
CONSTRUCTION DETAILS
FOR THE
CITY OF O'FALLON, MISSOURI

DESIGNED BY *Std* DRAWN BY *Std* CHECKED BY *Std*

JOB NO. 5288
 DATE *Sept. 1989*
 SCALE *As Shown*
 SHEET NO. **4** OF **4**

As Constructed 3-29-88