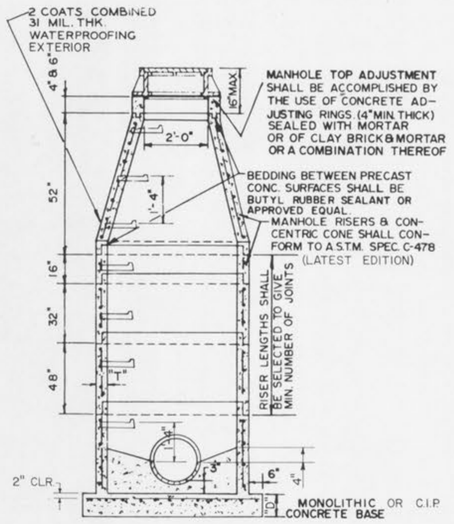
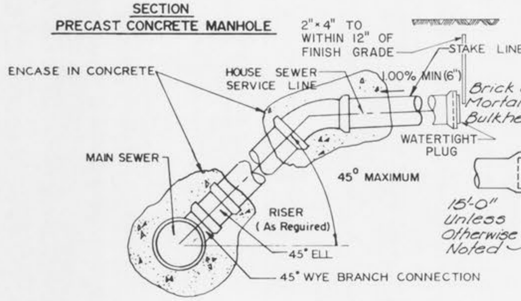
WALL THICKNESS	
DIA. M.H.	"T" DIM. PRE CAST
48"	5"
60"	6"
72"	7"

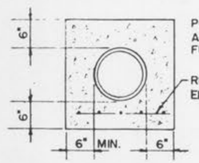
MANHOLE BASE THICKNESS	
DEPTH(FEET)	"D" DIM.
0-20	8"w/#4 BARS @ 12" CTRS. EACH WAY
20-30	8"w/#4 BARS @ 9" CTRS. EACH WAY
30-40	10"w/#5 BARS @ 10" CTRS. EACH WAY



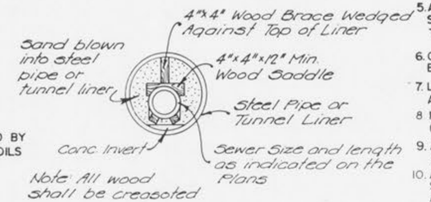
SECTION
PRECAST CONCRETE MANHOLE



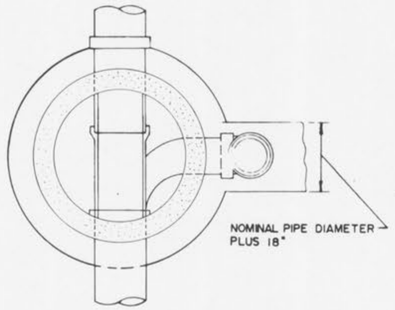
SEWER SERVICE CONNECTION



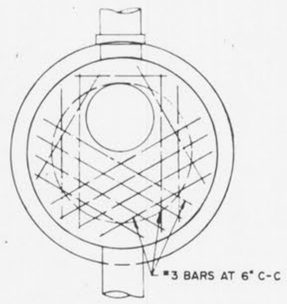
CONCRETE ENCASEMENT



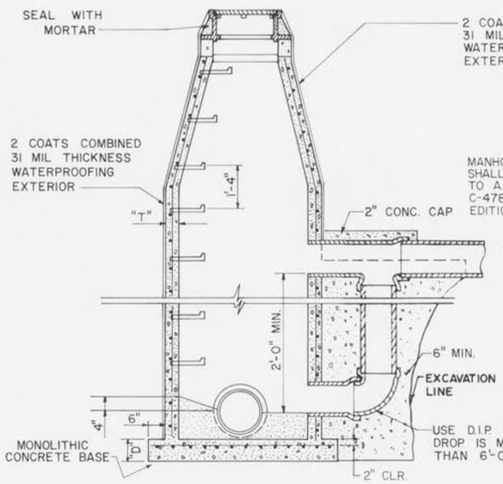
DETAIL OF CROSSING IN CONDUIT



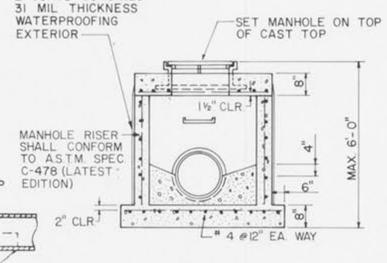
PLAN
DROP MANHOLE



PLAN
STANDARD SHALLOW MANHOLE



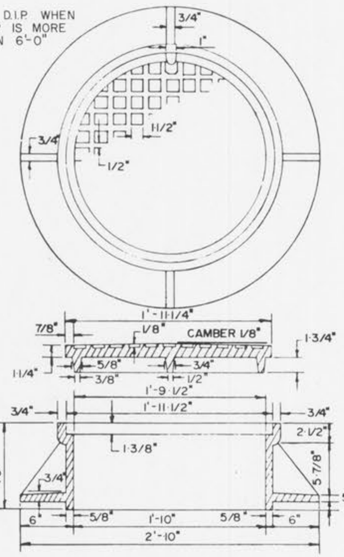
SECTION
DROP MANHOLE



SECTION
STANDARD PRECAST SHALLOW MANHOLE

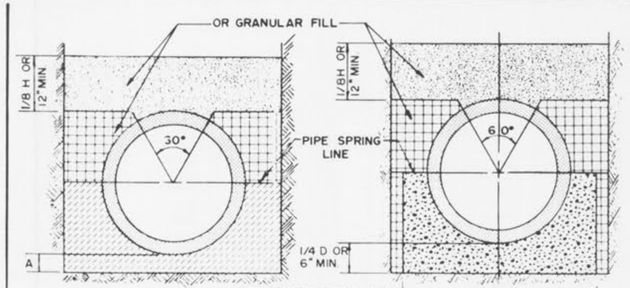
NOTES:

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 ENCASEMENT AROUND PIPE AS SHOWN IN DETAIL.
7. LAMP LINES BEFORE AND AFTER INSTALLATION OF CONCRETE ENCASEMENT.
8. PRECAST MANHOLE SHALL BE WATERPROOFED OUTSIDE.
9. ALL CONC. MANHOLES TO HAVE RUBBER GASKET ON ALL PIPE OPENINGS.
10. ALL P.V.C. SANITARY SEWER PIPE TO BE SDR-35 OR EQUAL CONFORMING TO ASTM-D-3034.
11. ALL TOPS OF MANHOLES TO BE SET 0.20' ABOVE FINISH GRADE.



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
* — Bolt Down Lid



BEDDING DETAILS

LEGEND:

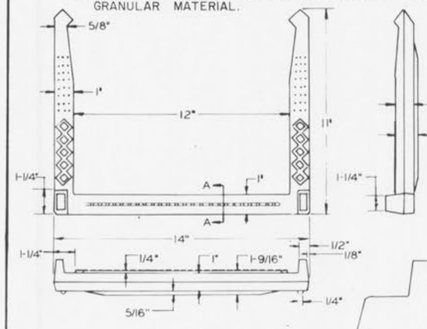
- Bc OUTSIDE DIA. OF PIPE
- H BACKFILL COVER ABOVE TOP OF PIPE
- D NOMINAL PIPE SIZE
- A FILL BELOW PIPE (SEE TABLE BELOW)
- HAND PLACED BACKFILL
- TAMPED BACKFILL
- GRANULAR FILL
- CONCRETE

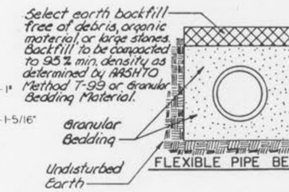
TABLE OF FILL BELOW PIPE

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

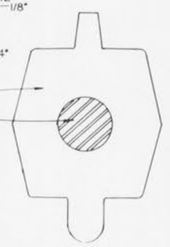
NOTES

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. TAMPED BACKFILL SHALL BE FINELY DIVIDED JOB EXCAVATED MATERIAL FREE FROM DEBRIS, ORGANIC MATERIAL AND STONES, COMPACTED TO 95% MAXIMUM DENSITY AS DETERMINED BY AASHO STANDARD METHOD T-99. GRANULAR FILL MAY BE SUBSTITUTED FOR TAMPED BACKFILL TO TOP OF THE PIPE.
3. HAND PLACED BACKFILL SHALL BE FINELY DIVIDED MATERIAL FREE FROM DEBRIS AND STONES.
4. ALL BEDDING DETAILS APPLY TO BUILDING SEWER SERVICE LINES AS WELL AS OTHER SEWERS.
5. CONCRETE CRADLE SHALL BE USED WHEN TRENCH WIDTH EXCEEDS 24" PLUS THE PIPE DIAMETER.
6. PVC PIPE SHALL BE BEDDED IN ACCORDANCE WITH ASTM D 2321 USING CLASS I (3/4" TO 1/4") GRANULAR MATERIAL.

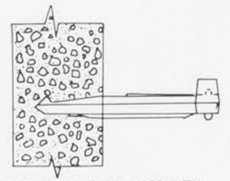




FLEXIBLE PIPE BEDDING

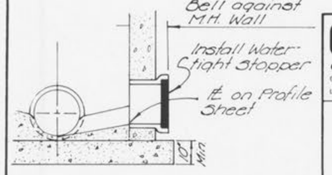


SECTION A-A



STEPS SHALL BE PLACED INTO WET CONCRETE WALL DURING MANUFACTURE OR MORTARED INTO HOLES AFTER CONCRETE HAS SET.

MANHOLE STEP



MANHOLE STUBOUT

GBA
GEORGE BUTLER ASSOCIATES
CONSULTING ENGINEERS ARCHITECTS
LANDSCAPE ARCHITECTS PLANNERS

OFFICES:
ONE PINE RIDGE PLAZA
9017 MELROSE DRIVE / LENEXA / KANSAS 66214
1100 CITY CENTER SQUARE
1100 MAIN / KANSAS CITY / MISSOURI 64105
SUITE A / COLONIAL PLAZA
114 E. ELM / O'FALLON / MISSOURI 63366

WESTRIDGE
SANITARY SEWER DETAILS
FOR
R. D. HARRIS CONSTRUCTION CO.

DESIGNED BY Std. | DRAWN BY Std. | CHECKED BY Std.

JOB NO. 3749
DATE Nov. 1984
SCALE As Shown
SHEET NO. 21 OF 22