
D.P.W. Job. No. 5711
Sheet 8 of 14 Sheets
PLAN OF MANHOLE COVER
Scale 1-1/2" = 1'-0"
SANITARY SEWER
1" Dia. Hole
Cast Iron
SECTION A - A
BOTTOM VIEW OF COVER
Scale 1-1/2" = 1'-0"
SECTION N-N
Scale: 1-1/2" = 1'-0"
PLAN OF MANHOLE FRAME
Scale 1-1/2" = 1'-0"
8 Ribs spaced equally
SECTION B - B
PLAN OF COVER
1/8" Raised Letters
BOTTOM OF COVER
ELEVATION
SECTION
DROP MANHOLE CHIMNEY CASTINGS
Scale 1-1/2" = 1'-0"
DETAIL OF CONCRETE JACKET
3/8" ⌀ Hoops, 10" centers, lapped 15" at ends. (or butt-weld)
4 - 1/2" ⌀ longitudinal bars.
Minimum Trench Width
See Table above
CONSTRUCTION AT PROPERTY LINE
Scale 1/2" = 1'-0"
Note: Permission is to be secured from property owner before construction at property line is started.
Property Line
Ground
2" x 2" Redwood
Excavation line for lateral installation
6" x 4" Reducer (Extra heavy C.I. soil pipe)
6" Lateral for House Connection
4" T.C. Cap with joint compound.
Contractor shall set Concrete Blocks on undisturbed ground. Where ground is too low, the Contractor shall not heap up dirt under the Concrete Block but shall use Concrete Bricks to take up the deficiency, scraping away beneath Concrete Block to give sufficient room for Brick.
Note: Minimum width of cradle shall be minimum trench width.
Class C Concrete
Concrete Cradle
Concrete Block
Brick
ELEVATION SHOWING METHOD OF LAYING PIPE
Min. Trench Width
See Table to left
1/2 Min. Trench Width
for pipe 12" and smaller
for pipe larger than 12"
Place cradle concrete to support all "Y" branches.
METHOD OF BACKFILL
In Street Areas, top 12" to be excess Stone etc. if available — See Specs. Fill to be dry and rolled with 5 Ton Truck or equivalent.
In lawn areas, top 12" shall be topsoil, thoroughly water tamped.
Fill may be from trenches if suitable. No adobe or fill containing more than 50% of rock permitted. Place in 18" layers and water tamp by flooding.
Fine coral, dirt or sand (Hand shoveled into trench)
Fill to be water tamped using pipe nozzles in two increments when pipe is not cradled. See Specifications.
2nd Filling Flooded
1st Filling Flooded
DETAIL OF PRECAST CONCRETE BLOCKS
Showing method of use of Bricks to set pipe on firm ground.
Radius to fit outside diameter of pipe.
DETAILS
WOODEN BRIDGE OVER TRENCHES AT ROAD CROSSINGS
Scale 1/4" = 1'-0"
4" x 4"
2" x 12" Planks
10 - 3" x 12" Joists equally spaced
2" x 12" Sill
DETAILS
CROSS WALKS OVER TRENCHES
Scale 1/4" = 1'-0"
Posts, Top rail and Side rails S4S
CHIMNEY DETAIL FOR CAST IRON SEWER LINE
Scale 1/2" = 1'-0"
Detail above this line similar to Standard Chimney Detail.
8" V.C. Pipe
10" V.C. Pipe Collar (or other suitable material)
Joint Material
8" C.I. Pipe
8" 1/8 bend C.I. Pipe
C.I. Pipe
Note: Chimney to be jacketed as showned on Standard Chimney Detail
PIPE FLOATATION PREVENTION
Scale 1" = 1'-0"
2" x 6"
Wedge
2" x 4" about 10'0C
3" x 4"
Note: Suggested Method for preventing Pipe from floating when pouring cradle. Contractor may use any other Method if approved by the Engineer.
PLAN
SECTION H-H
TYPE A RUNGS
WROUGHT IRON M.H. STEPS
Scale 1-1/2" = 1'-0"
1" ⌀ Bar
Tread to be scored in 1/4" squares
Corners of tread to be rounded.
PLAN
SECTION I - I
TYPE B RUNGS
Scale 3" = 1'-0"
SECTION J-J
SECTION K-K
CAST IRON M.H. STEPS
Scale 3" = 1'-0"
Face of wall when used in concrete or brick.
Type B
METHOD OF INSTALLATION
Grade
℄ of chimney
No machine backfilling between these points. Backfill to be brought up evenly on each side of chimney by hand shoveling.
Note: All reinforcing rods 1/2" round except lateral ties.
Vitrified Tile Cap
6" x 6" x 6" Double "Y"
Class "B" Conc.
1/4" ⌀ Lateral ties 12" O.C.
1/2" ⌀ Vertical
Payment Height
12'-0" Max. depth
"A" Bars 2" Cover
"B" Bars 2" Cover
Standard Vit. Tile "Y" with 8" branch.
4 - 1/2" ⌀ - 16" O.C. 2" Cover
Variable O.D. of pipe
SECTION B - B
Scale 1/2" = 1'-0"
SECTION C - C
Scale 1/2" = 1'-0"
1/2" ⌀ Vertical 2" min cover
1/4" ⌀ Lateral ties 12" O.C. 2" Cover
SECTION A - A
Scale 1/2" = 1'-0"
Determine in field.
CHIMNEY DETAILS
Note: Dimensions shown may be varied to accomodate specific brand of pipe furnished by Contractor.
Note: Contractor shall use such Standard Details shown above as are applicable to, and called for, on this project.
When lateral sewers are constructed from the trunk sewer to the property line, the grade of such lateral sewer shall be 1/4" per lineal foot unless otherwise ordered by the engineer.

TRENCH WIDTHS

Pipe Size	Min. Width
6"	24"
8"	24"
10"	24"
12"	30"
15"	30"
18"	36"
21"	36"
24"	45"
27"	45"
30"	50"

DIM. OF CONC. CRADLE

Pipe Size	"Y"
6"	3"
8"	3"
10"	3"
12"	3"
15"	4"
18"	5"
21"	5"
24"	6"
27"	7"
30"	7"

CONCRETE BLOCK DIMENSIONS

Pipe Size	"A"	"B"	"C"
6"	1'-2"	6"	3"
8"	1'-5"	6"	3"
10"	1'-7"	6"	3"
12"	1'-7"	6"	3"
15"	1'-8"	6"	4"
18"	1'-9"	6"	4"
21"	1'-10"	6"	4"
24"	1'-11"	6"	4"
27"	2'-0"	6"	4"
30"	2'-3"	6"	4"

STEEL SCHEDULE

Mark	Steel	Shape	Req.
"A"	1/2 ⌀	45°, 45°, Determine in field.	2 Pcs.
"B"	1/2 ⌀	22-1/2°, 24"	4 Pcs.

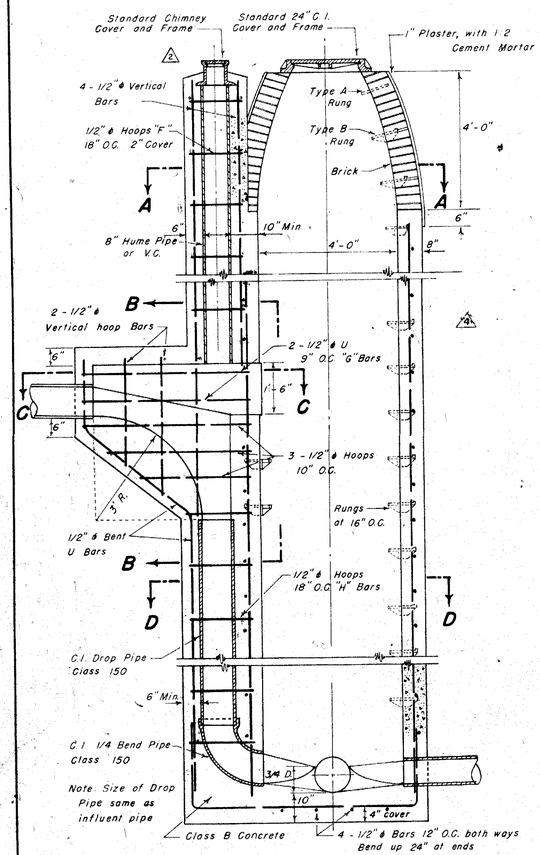
Revision	Date	Brief	Made by	Approved
3	10/2/53	Added Tab Support on M.H. cover	T.S.	
2	8/23/50	Const. at prop. line altered	Y.N.	
1	10/20/49	M.H. Castings modified	H.B.	

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
DIVISION OF SEWERS

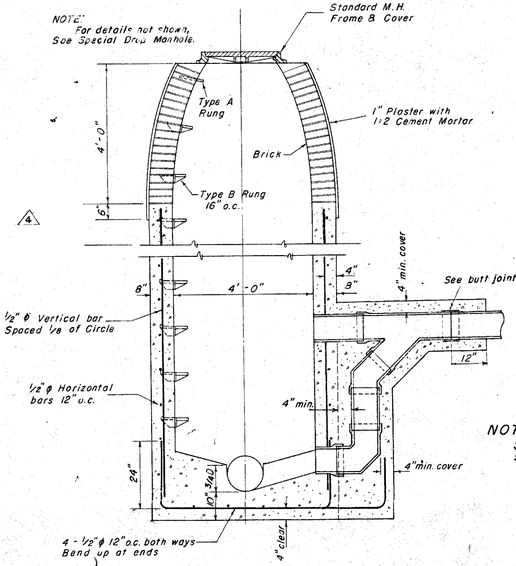
STANDARD DETAILS

ENGINEER F. Sunn — DATE 4-1-49
DRAFTSMAN F. Sunn, A. Kanayama — CHECKED BY
SCALE As Shown — TRACER A. Kanayama
APPROVED — APPROVED
CHIEF ENGINEER — ENGINEER, DIV. OF SEWERS
ENGINEER, BUREAU OF PLANS

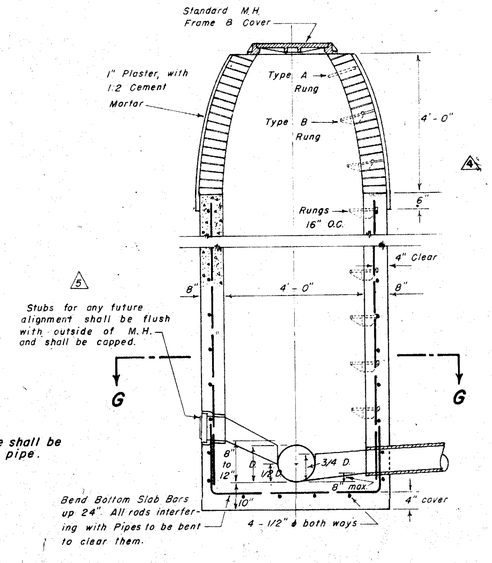
D.P.W. Jr
Sheet D dr. 5711
4 sheets



SPECIAL DROP MANHOLE



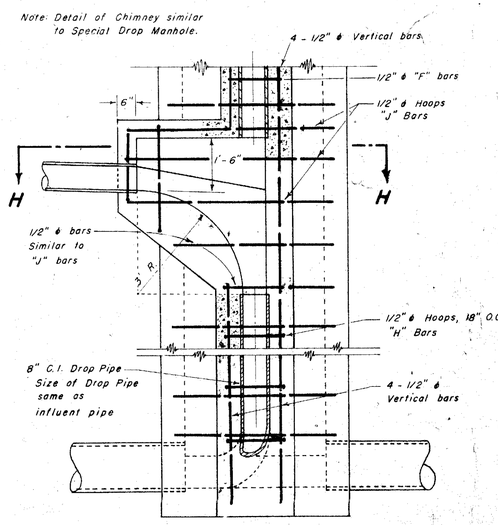
3 DROP MANHOLE
For invert differences greater than 5'-0"



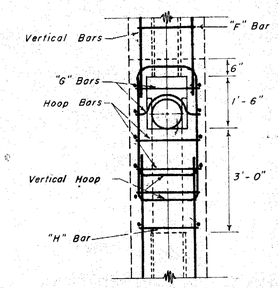
PLAIN MANHOLE

4

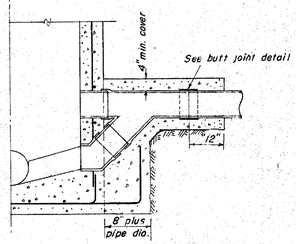
NOTE:
Size of drop pipe shall be same as influent pipe.



SPECIAL SIDE DROP MANHOLE SECTION 1-1

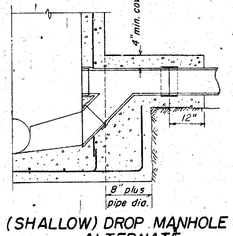


SECTION B-B



3 (SHALLOW) DROP MANHOLE

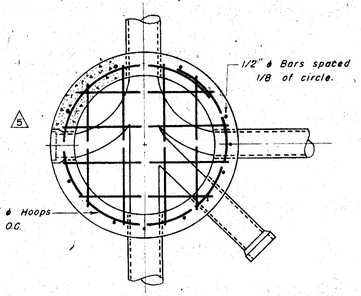
NOTE:
Use this drop detail for invert differences of 5'-0" and less.



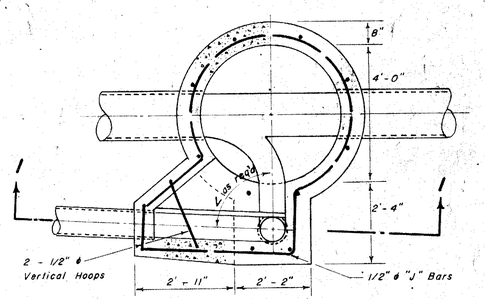
(SHALLOW) DROP MANHOLE ALTERNATE

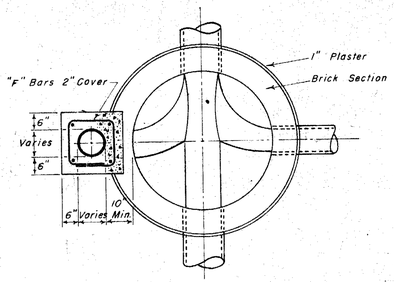
3

NOTE:
Cut pipe vertically through "Y" or extension for drops where detail to left cannot be used

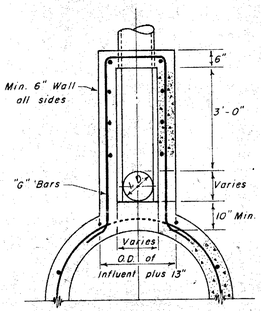


SECTION G-G

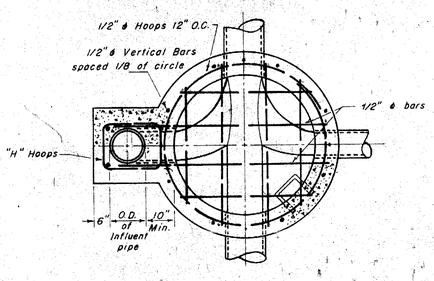




SECTION A-A



SECTION C-C



SECTION D-D

NOTES

1 Manhole rungs shall not be aligned above any flow line.

2 When not otherwise noted, manhole stubs shall be sloped as follows:

Pipe Size	Rise Per Foot
6"	1/8"
8"	3/32"
10"	1/16"
12"	1/16"

3 All reinforcing rods interfering with pipes shall be bent to clear them.

4 Data for special manholes not shown shall be similar to that for Plain Manholes.

5 Bar laps to be 40 diameters in length.

6 No rungs shall be installed in manholes less than 3' high

REVISION	DATE	BRIEF	MADE BY	APPROVED
5	10/9/53	Stubs for future mode flush with outside of M.H.	M.M.	
4	10/28/52	Deleted note covering steel for manholes less than 30 ft. in height	T.S.	
3	6/9/50	Open Drop Manhole details deleted & Drop Manhole details modified.	H.L.	
2	10/20/49	Concrete placed around Chimney Frame	H.B.	
1	8/30/48	Notes 1 & 6 added	N.Y.	

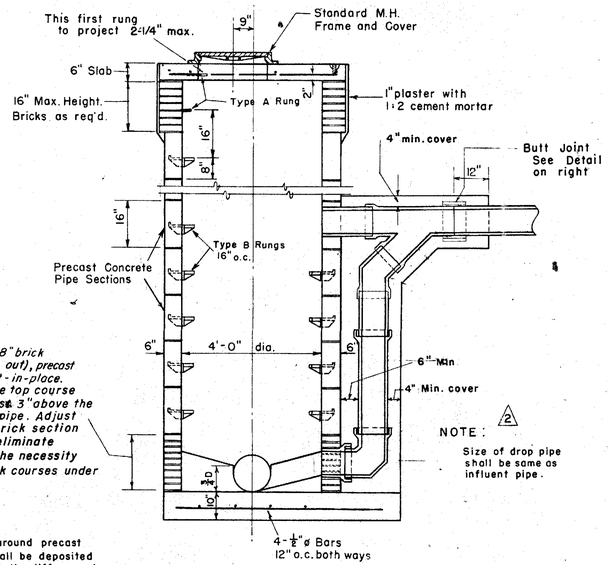
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
DIVISION OF SEWERS

STANDARD DETAILS

ENGINEER — F Sunn — DATE — 4-1-49
DRAFTSMAN — E. Sung, A. Kanayama — CHECKED BY — [illegible]
SCALE — 3/4"-1'-0" — TRACER — A Kanayama
APPROVED: [signature] CHIEF ENGINEER
APPROVED: [signature] ENGINEER, DIV. OF SEWERS
[signature] ENGINEER, BUR. OF PLANS

5711.9

D.P.W. Job No 5711
Sheet 10 of 14 Sheets



This section to be of 8" brick (plastered inside and out), precast M.H. Section or cast-in-place. If brick is used, the top course shall extend at least 3" above the top of the highest pipe. Adjust the height of the brick section (if used here) to eliminate wherever possible the necessity for additional brick courses under the top slab.

NOTE :

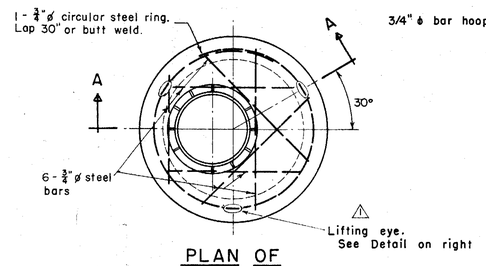
When backfilling around precast manholes, material shall be deposited in such a manner that the difference in elevation or one side of the manhole shall not exceed the elevation on the other side by more than 5 feet.

NOTE : Size of drop pipe shall be same as influent pipe.

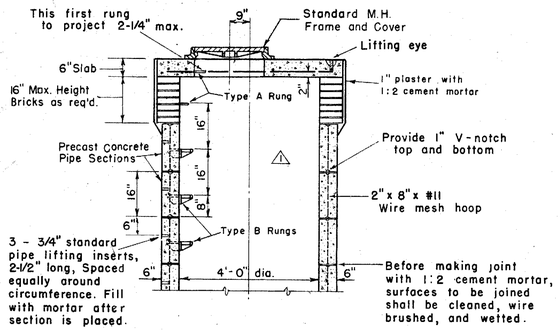
DROP MANHOLE
USING PRECAST CONCRETE PIPE SECTIONS
FOR MANHOLES LESS THAN 10 FT. IN HEIGHT

Scale: 1/2" = 1'-0"

NOTE : (Shallow) Drop M.H. may be constructed similarly

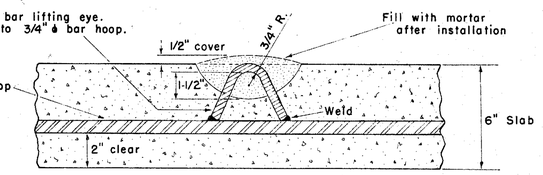


PLAN OF PRECAST MANHOLE
Scale: 1/2" = 1'-0"

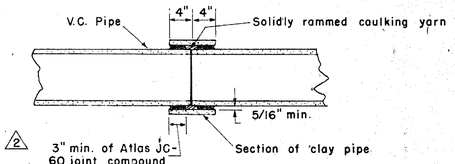


SECTION A-A
Scale: 1/2" = 1'-0"

NOTE : Pipe Sections may be made in heights other than 16" if desired.



SECTION OF LIFTING EYE
Scale: 3" = 1'-0"



BUTT JOINT DETAIL
Scale : 1" = 1'-0"

Revision	DATE	BRIEF	Made by	APPROVED
2	10/28/52	Reduced permissable height. Added notes on backfilling, size of drop and joint compound.	T.S.	
1	6/7/50	Revised details of Precast Manholes	A.K.	

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
DIVISION OF SEWERS

STANDARD DETAILS

ENGINEER F. Sunn
DRAFTSMAN A. Konoyama
SCALE As Noted
APPROVED: CHIEF ENGINEER

DATE July 13, 1949
TRACER H. Lum
CHECKED BY
APPROVED: DIVISION ENGINEER
ENGINEER, BUR. OF PLANS

5711.10