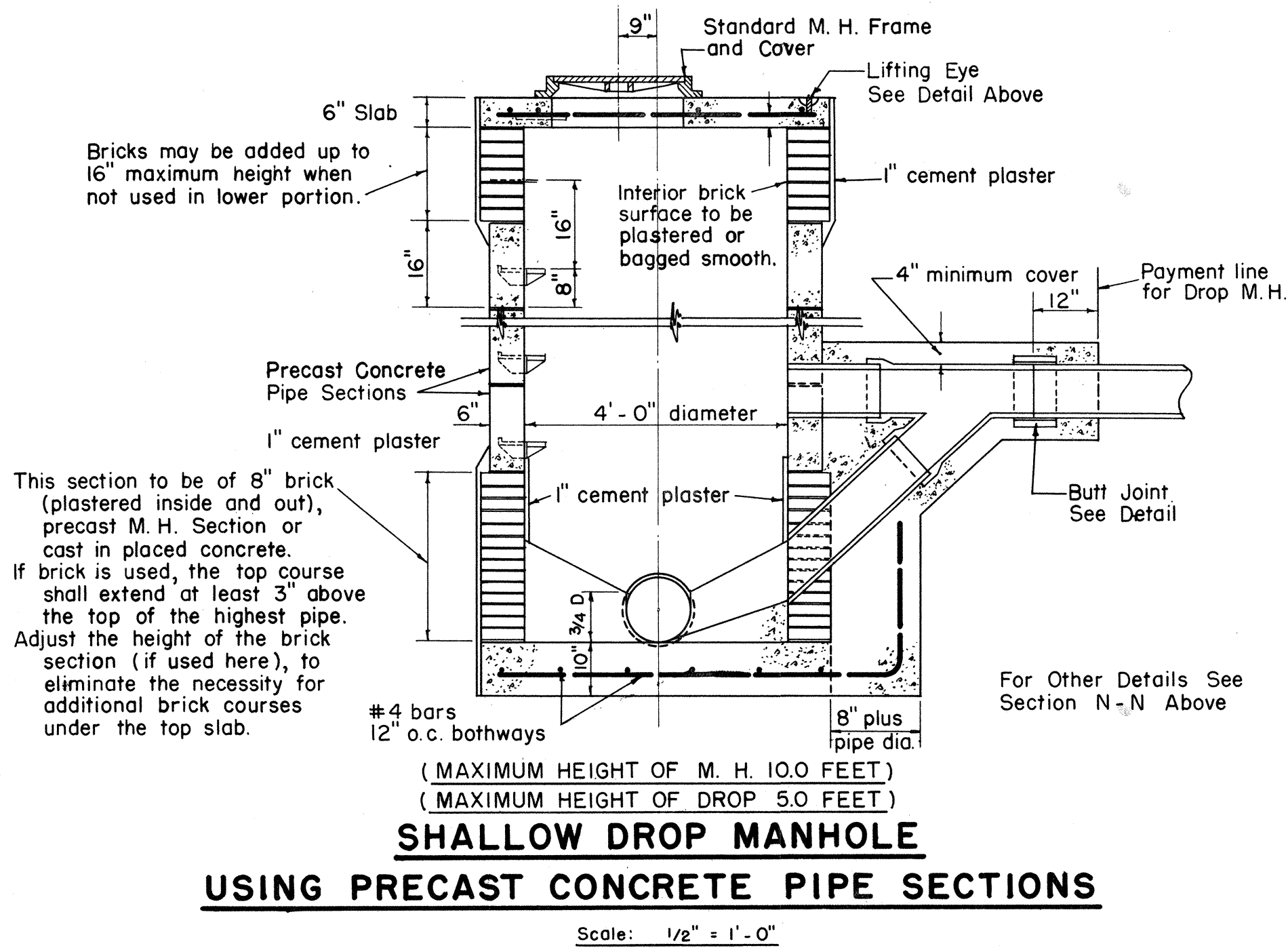
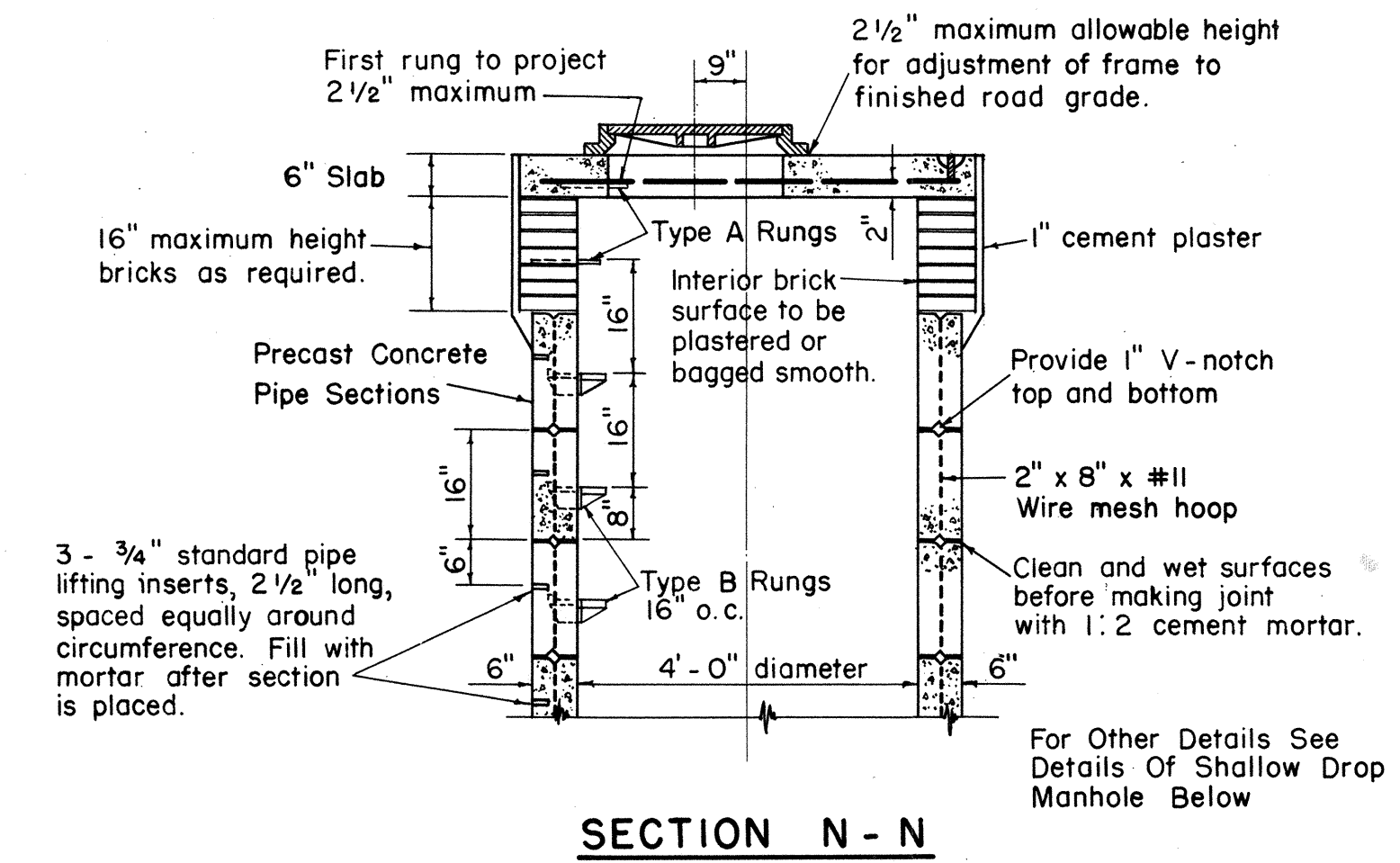
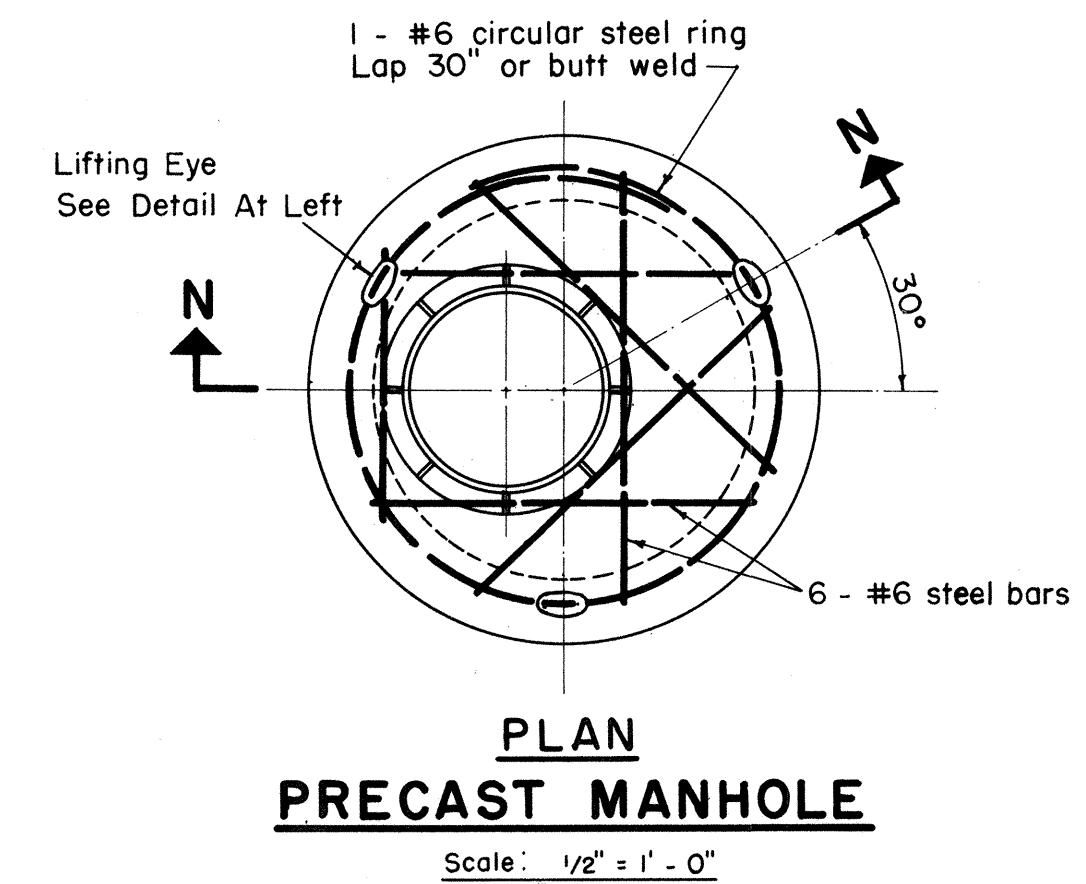
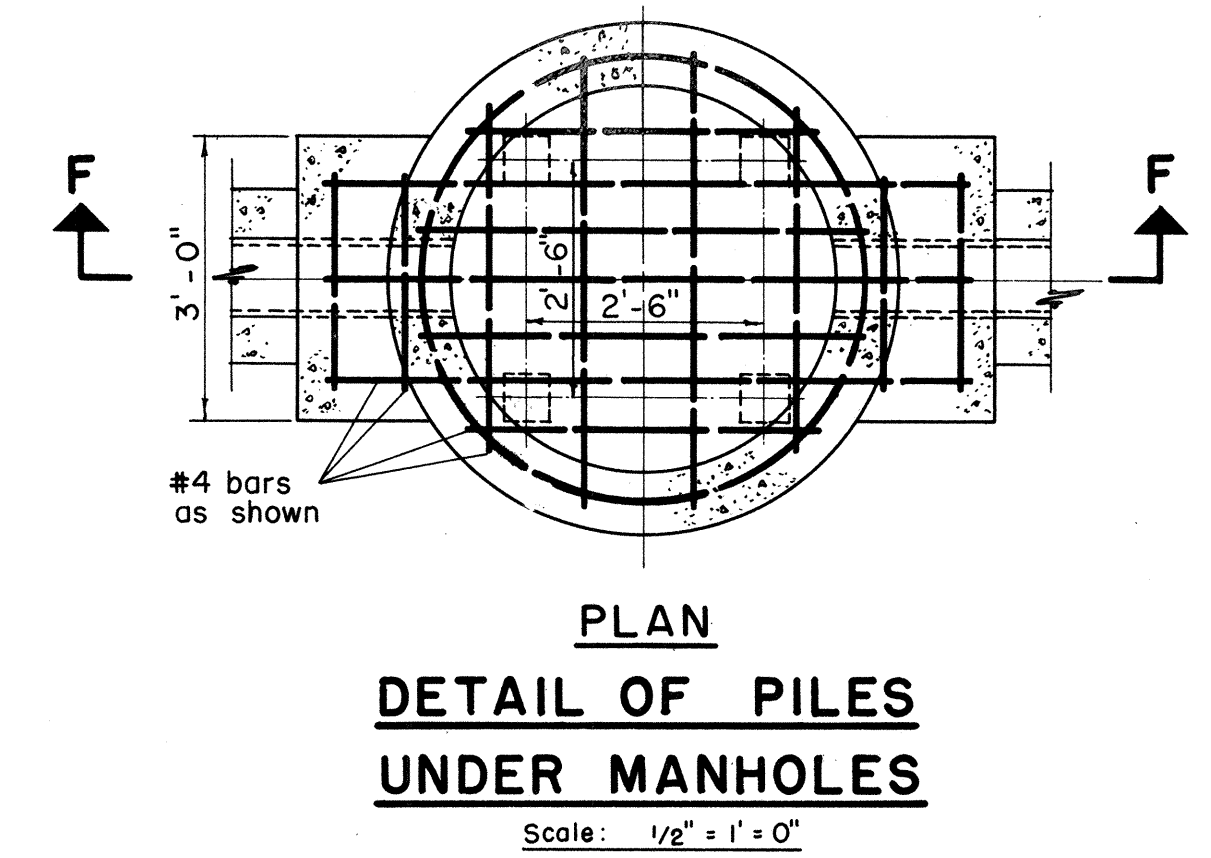
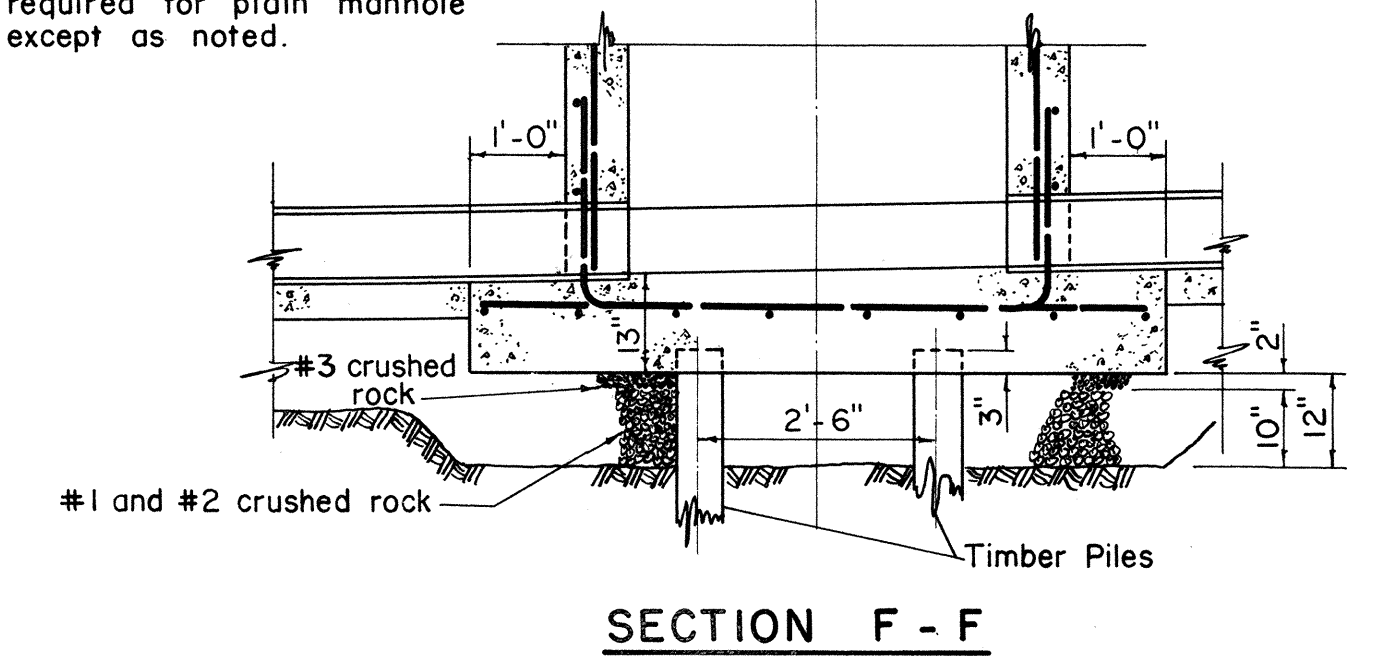
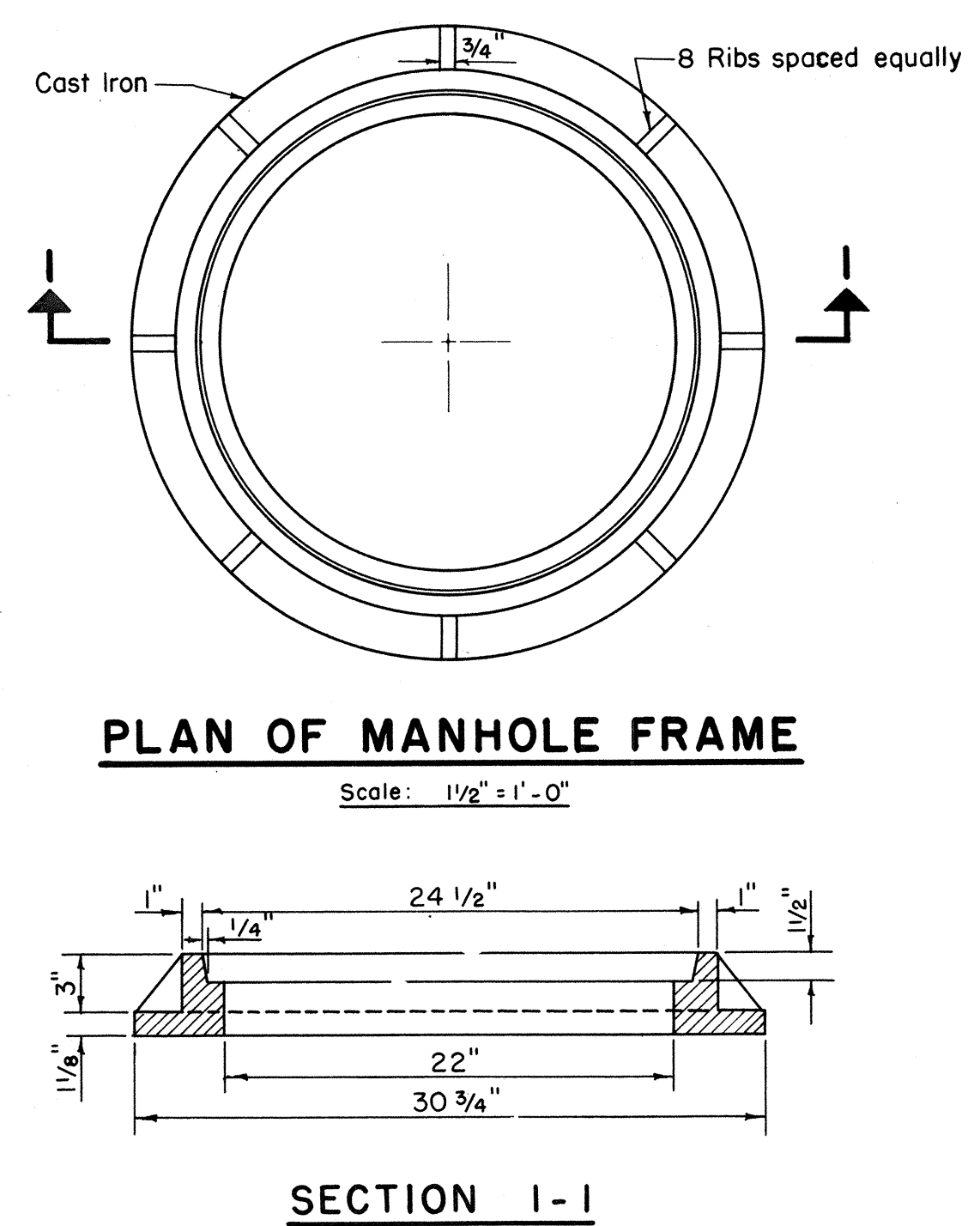
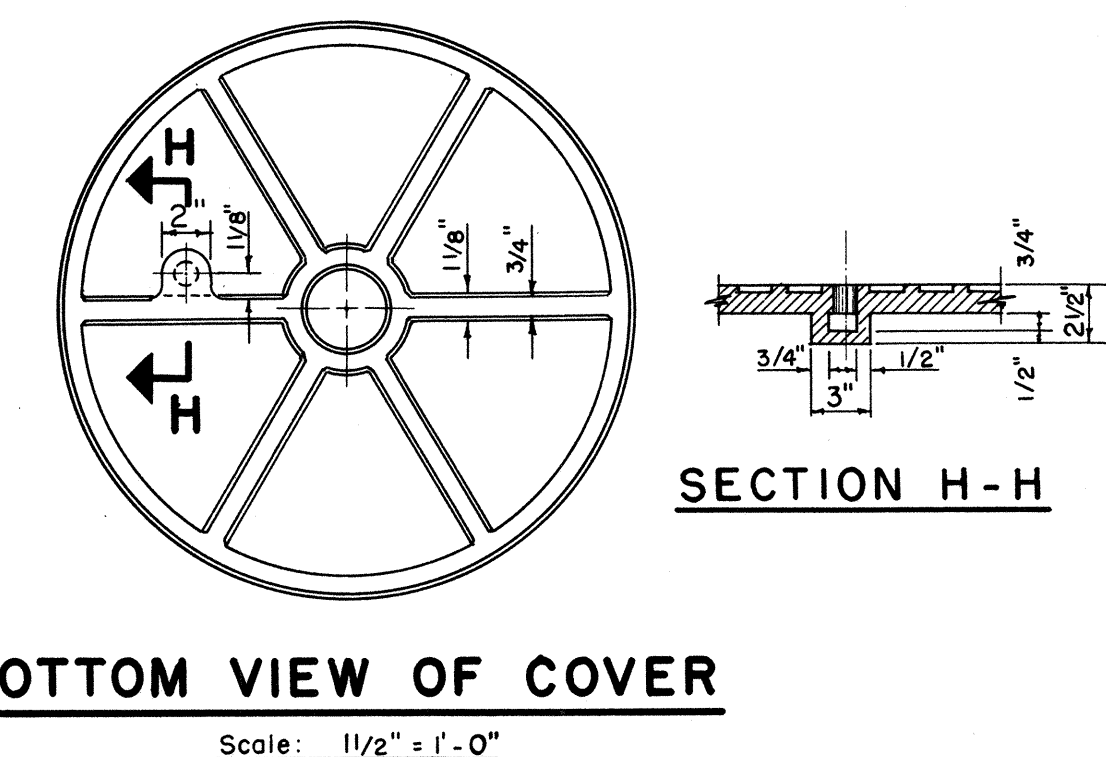
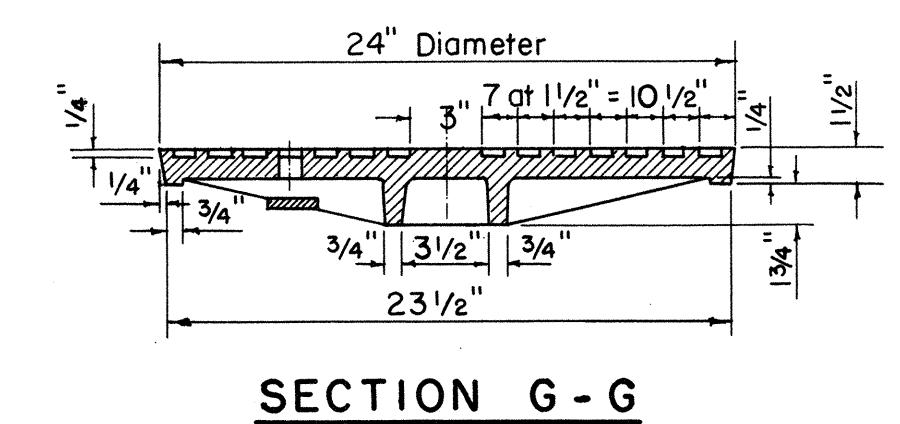
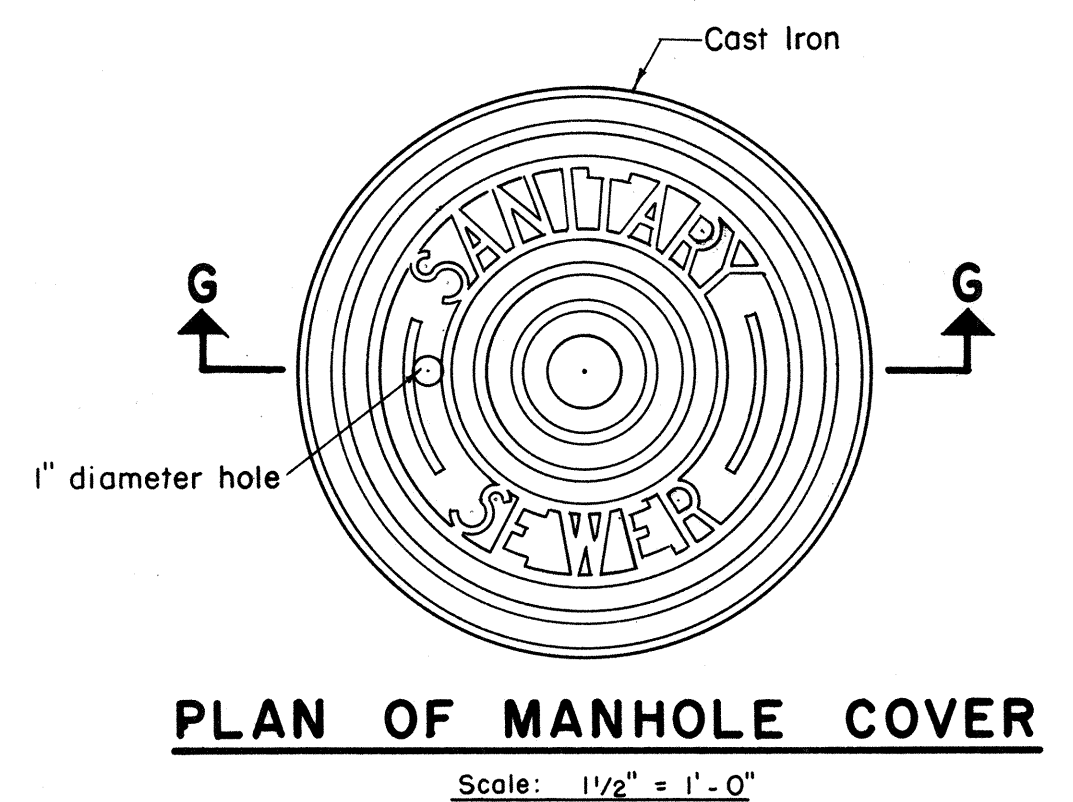
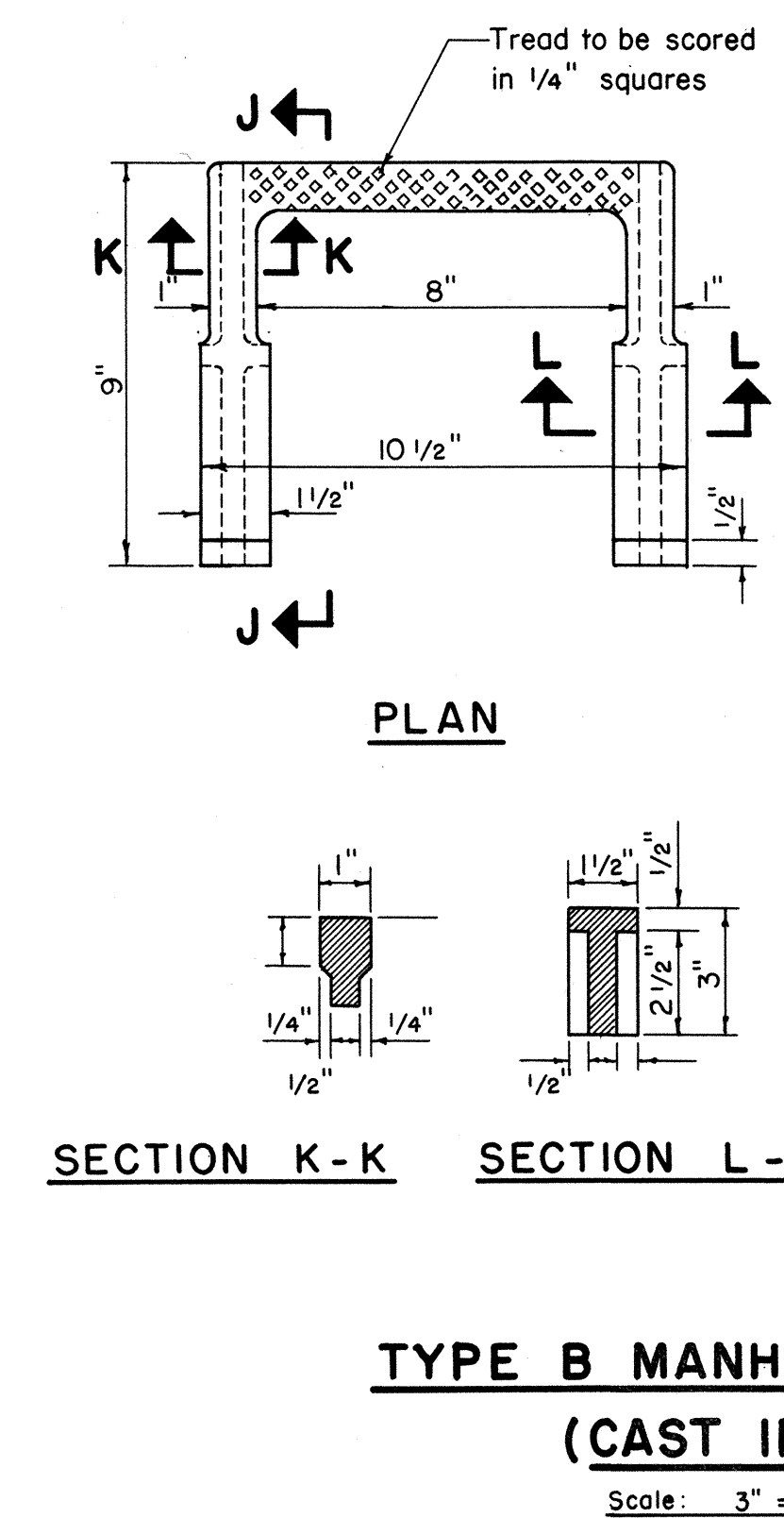
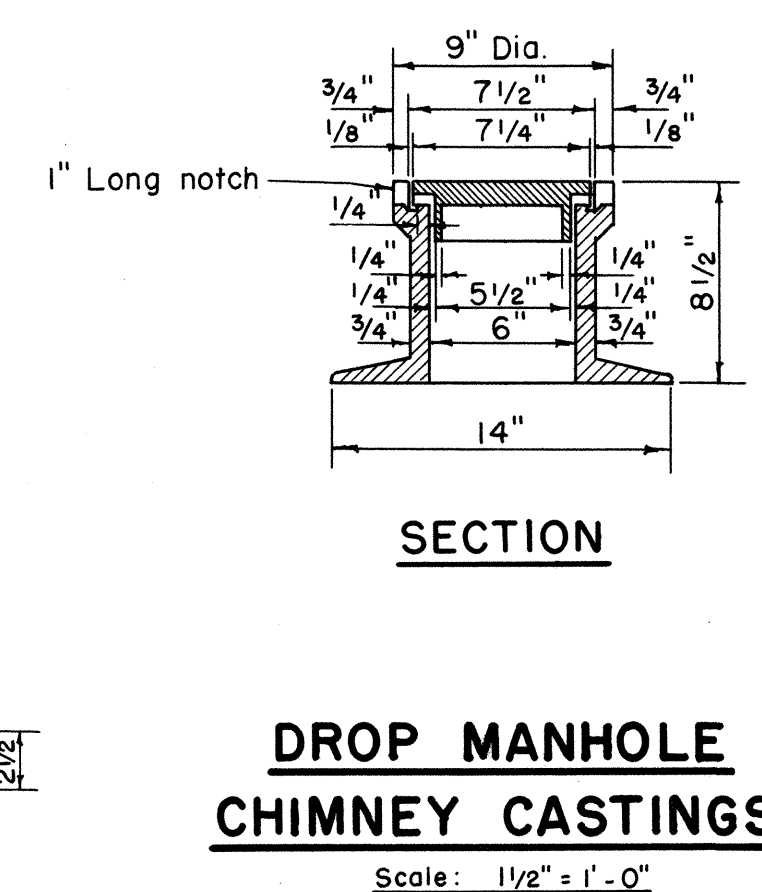
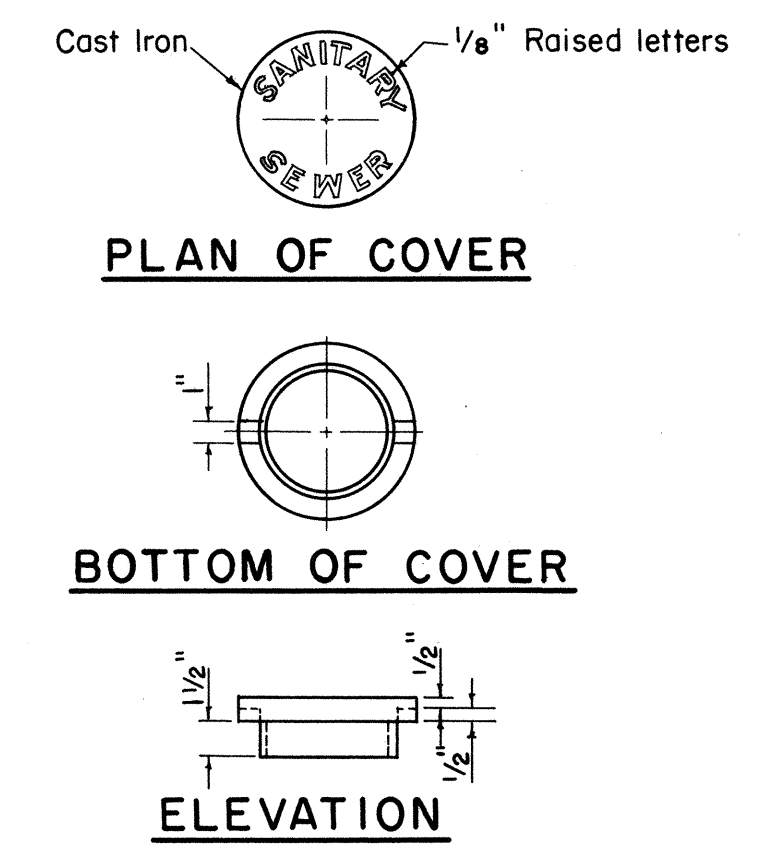
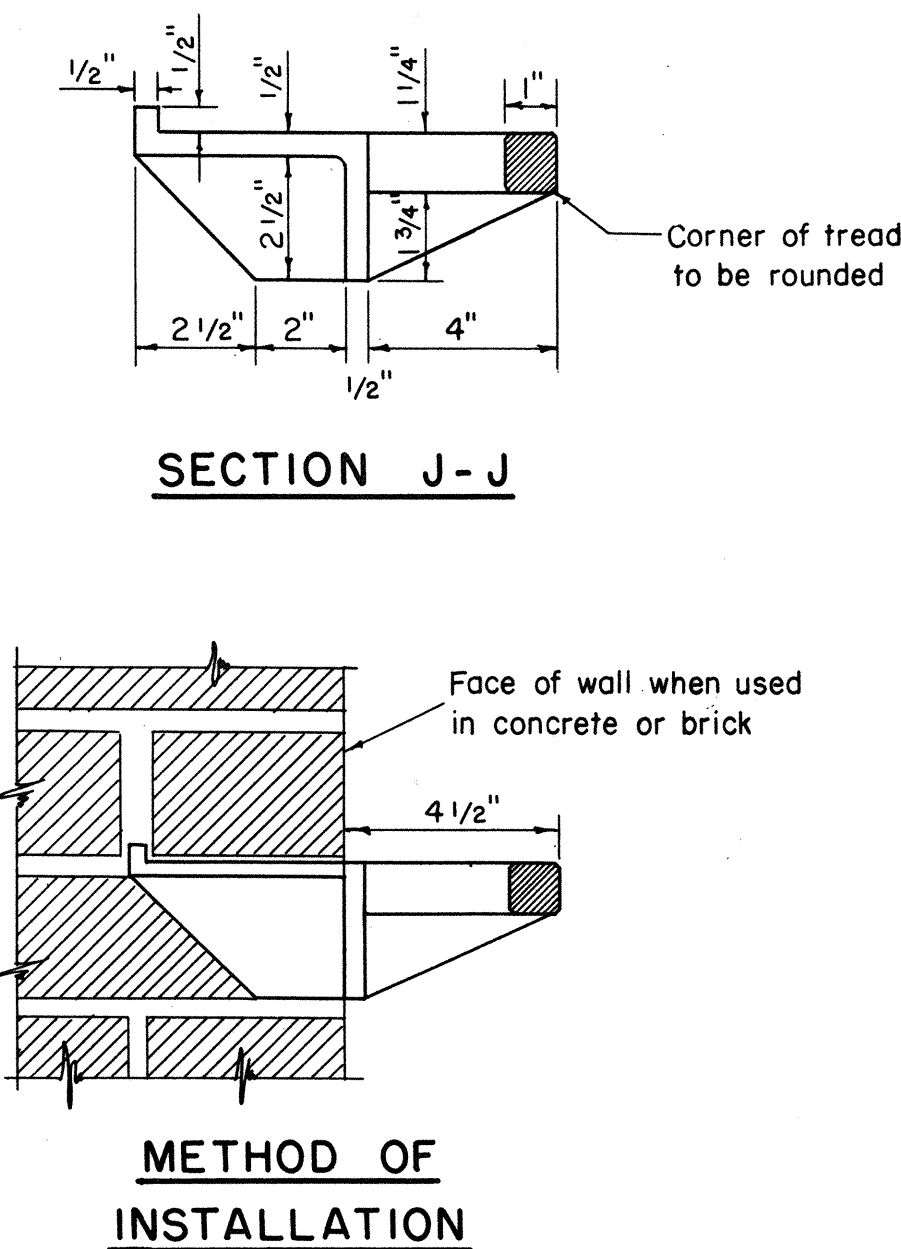
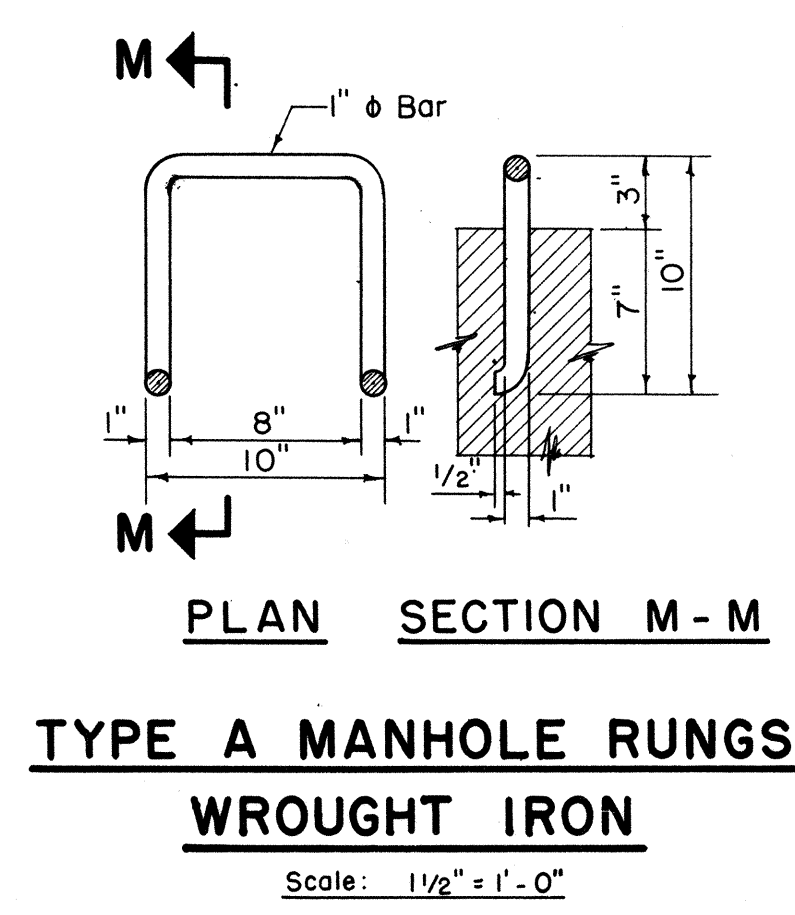
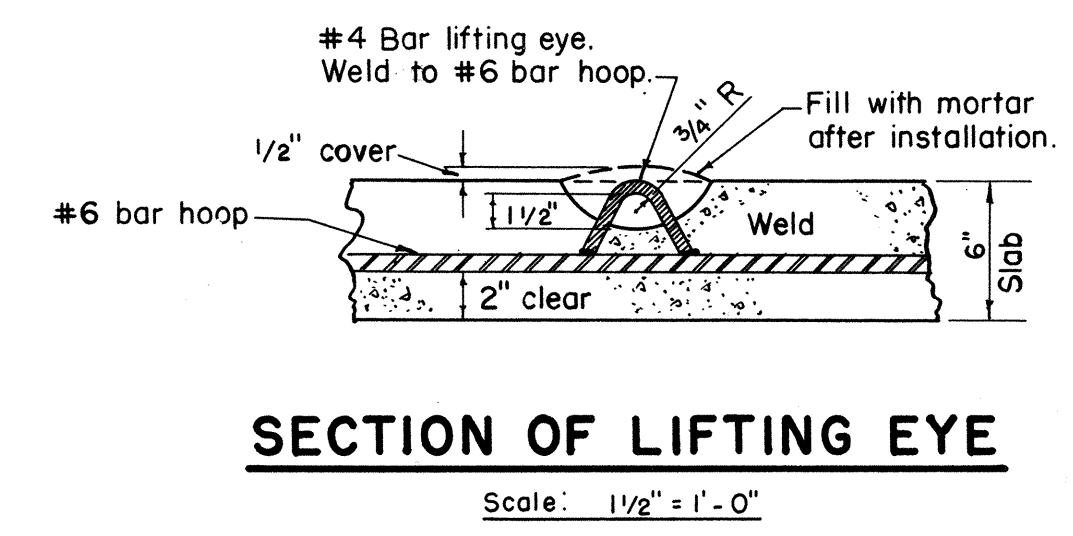


| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | F-090-1(6)         | 1961        | 16        | 71           |

NOTE: Reinforcing steel shall be the same as that required for plain manhole except as noted.



- NOTE:
- When backfilling around Precast Manhole, material shall be deposited in such a manner that the difference in elevation on one side of the manhole shall not exceed the elevation on the other side by more than 5 feet.
  - Pipe Sections may be made in heights other than 16 inches if desired.
  - Size of drop pipe shall be same as influent pipe.



DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
STATE OF HAWAII

PROJECT NO. F-090-1(6)

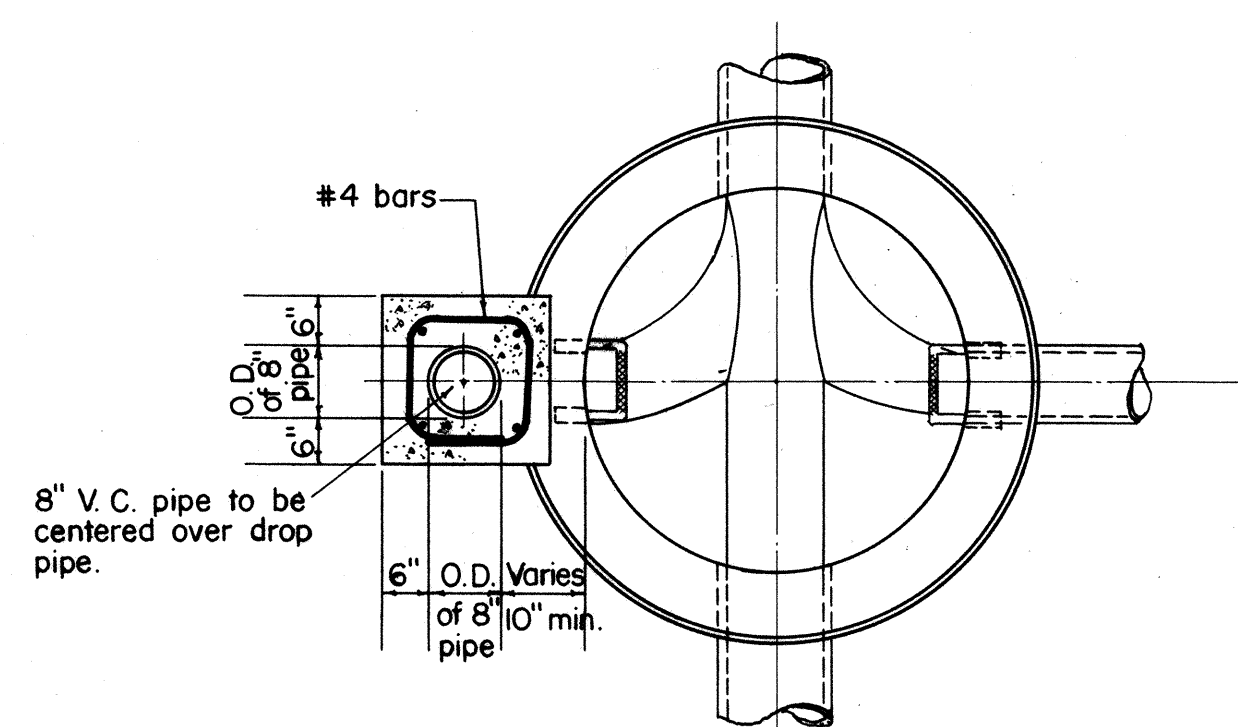
DEPARTMENT OF PUBLIC WORKS  
CITY AND COUNTY OF HONOLULU  
DIVISION OF SEWERS

REVISED  
STANDARD DETAILS  
(SUPERSEDES STANDARD DATED 11-1-54)

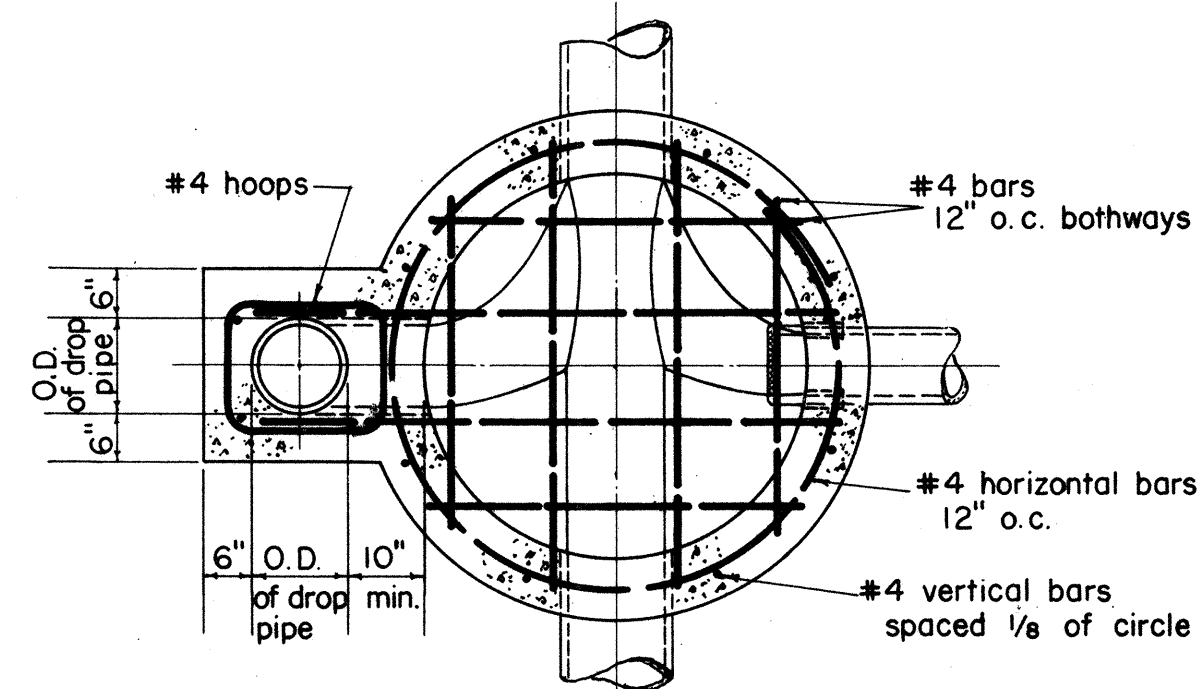
ENGINEER: *A. T. Tamm* DATE: *October 4, 1957*  
DRAFTSMAN: *T. Tamm* CHECKED BY: *A. T. Tamm*  
SCALE: *As Shown* TRACER: *P. M.*  
APPROVED: *A. T. Tamm* APPROVED: *A. T. Tamm*  
CHIEF ENGINEER: *A. T. Tamm* DIVISION ENGINEER: *A. T. Tamm*



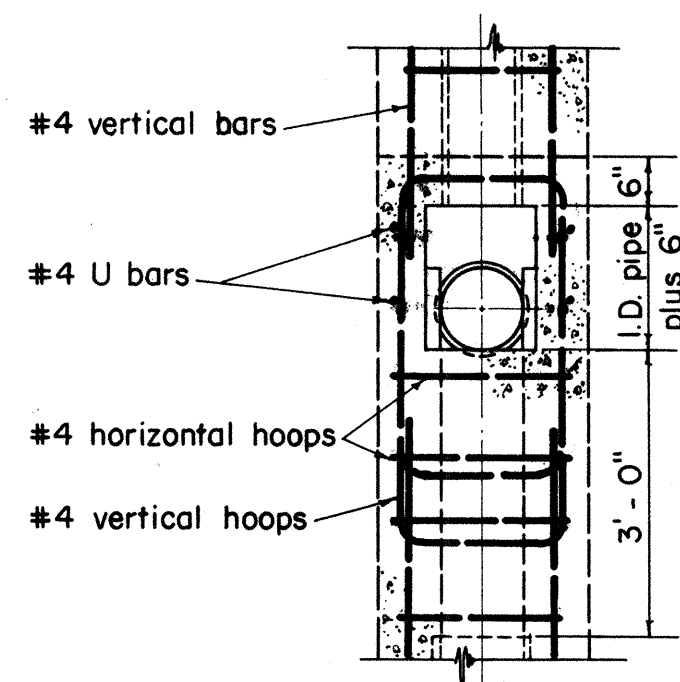
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | F-090-1(6)         | 1961        | 17        | 74           |



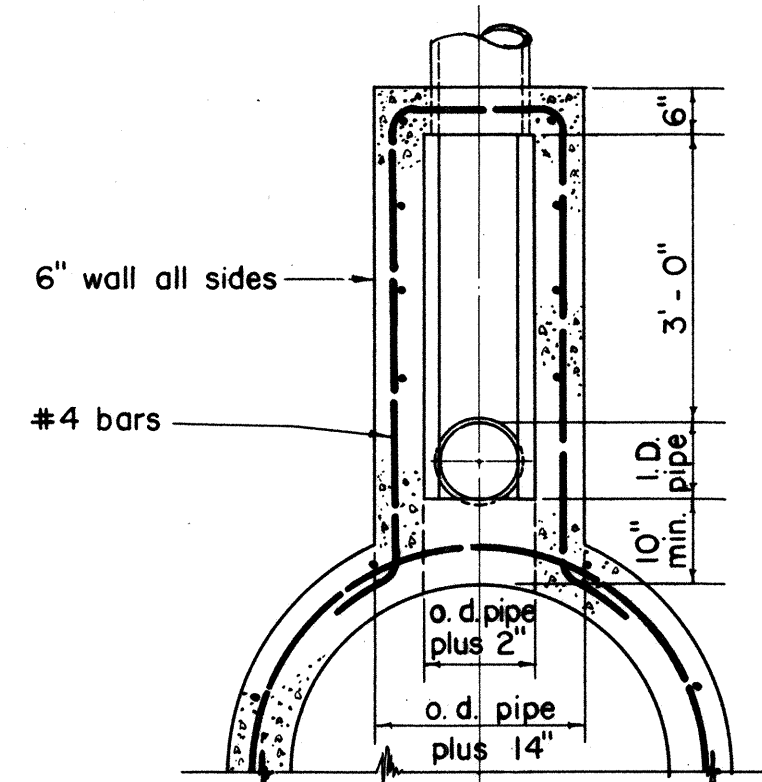
SECTION A-A



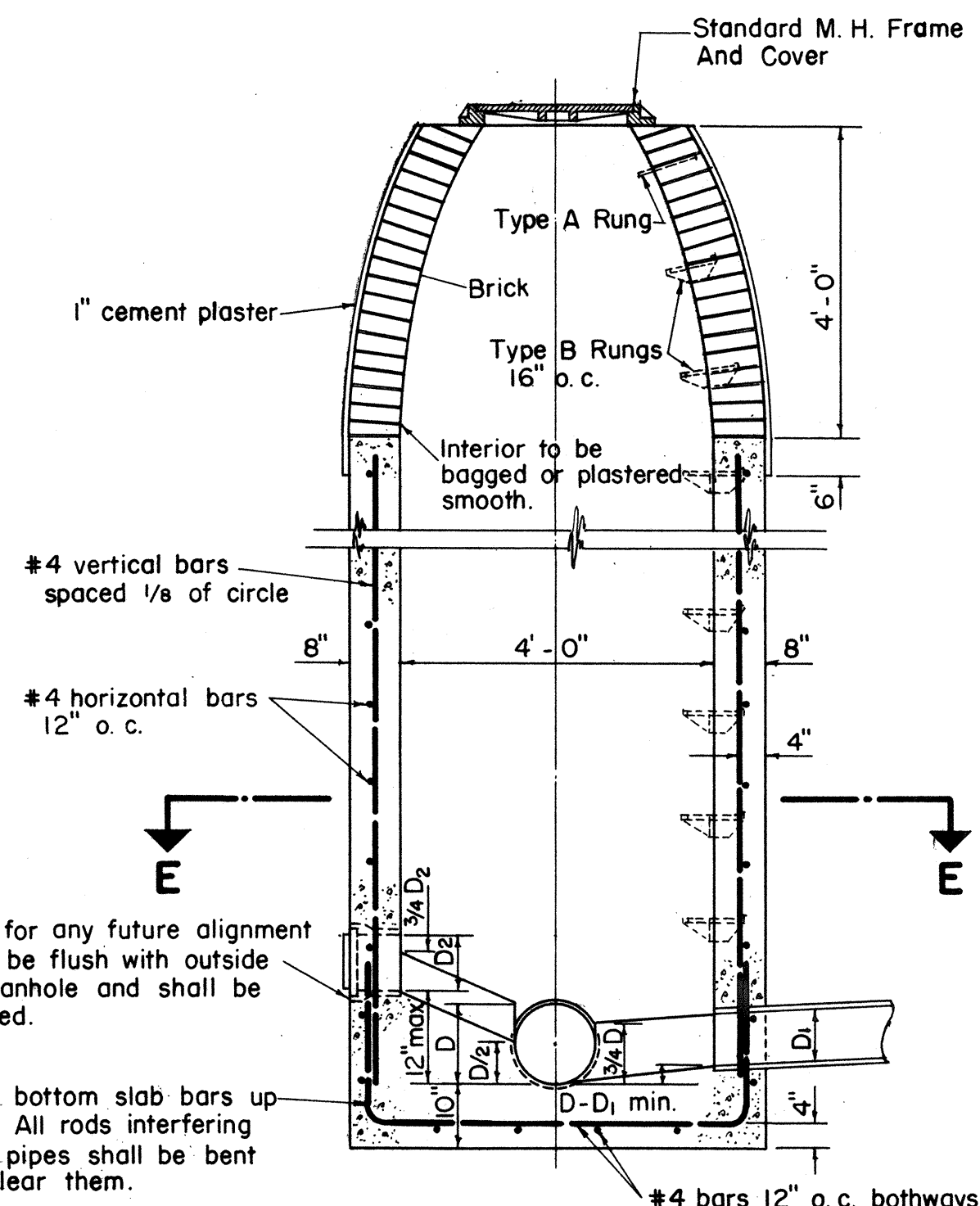
SECTION B-B



SECTION C-C

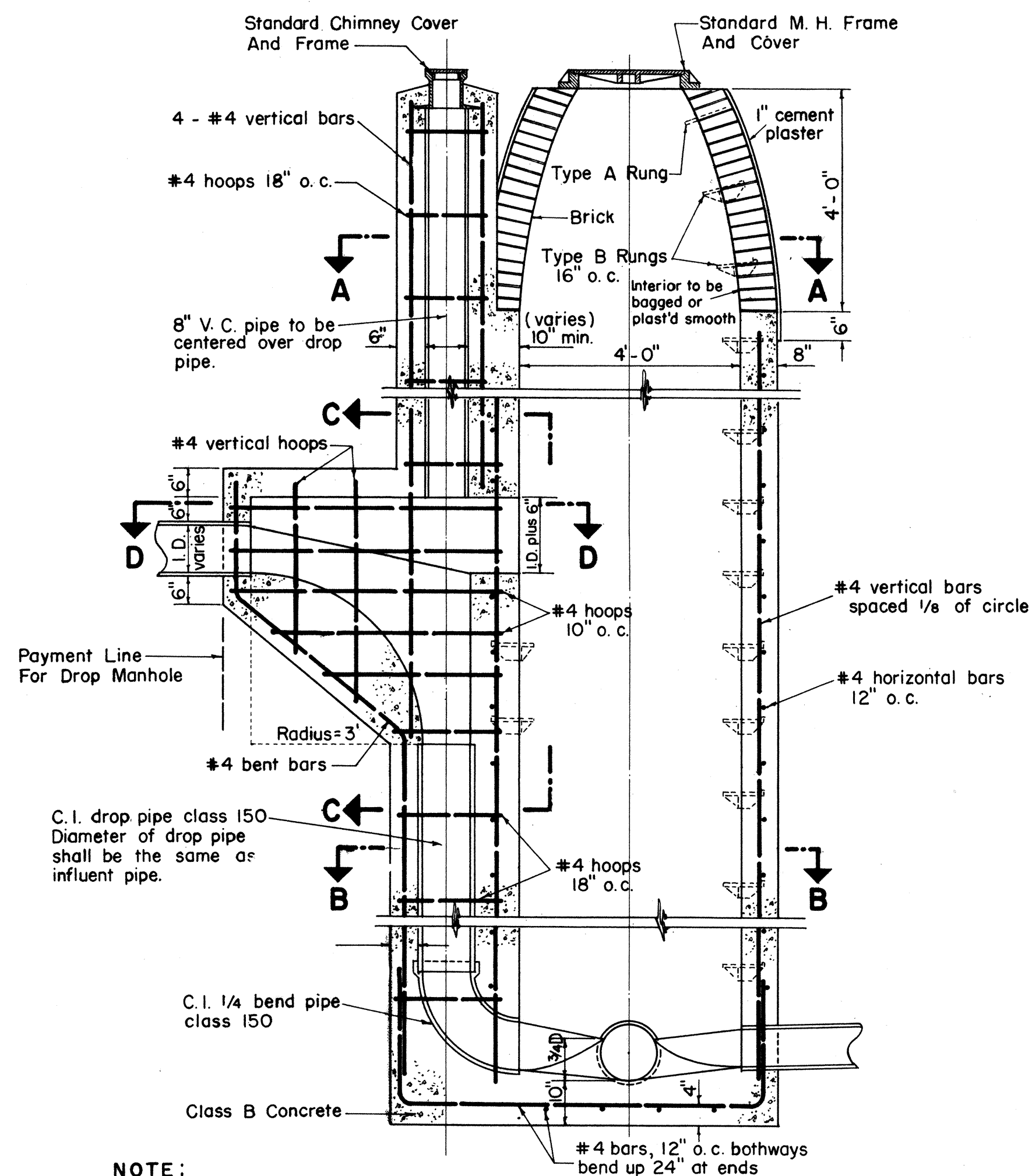


SECTION D-D



PLAIN MANHOLE

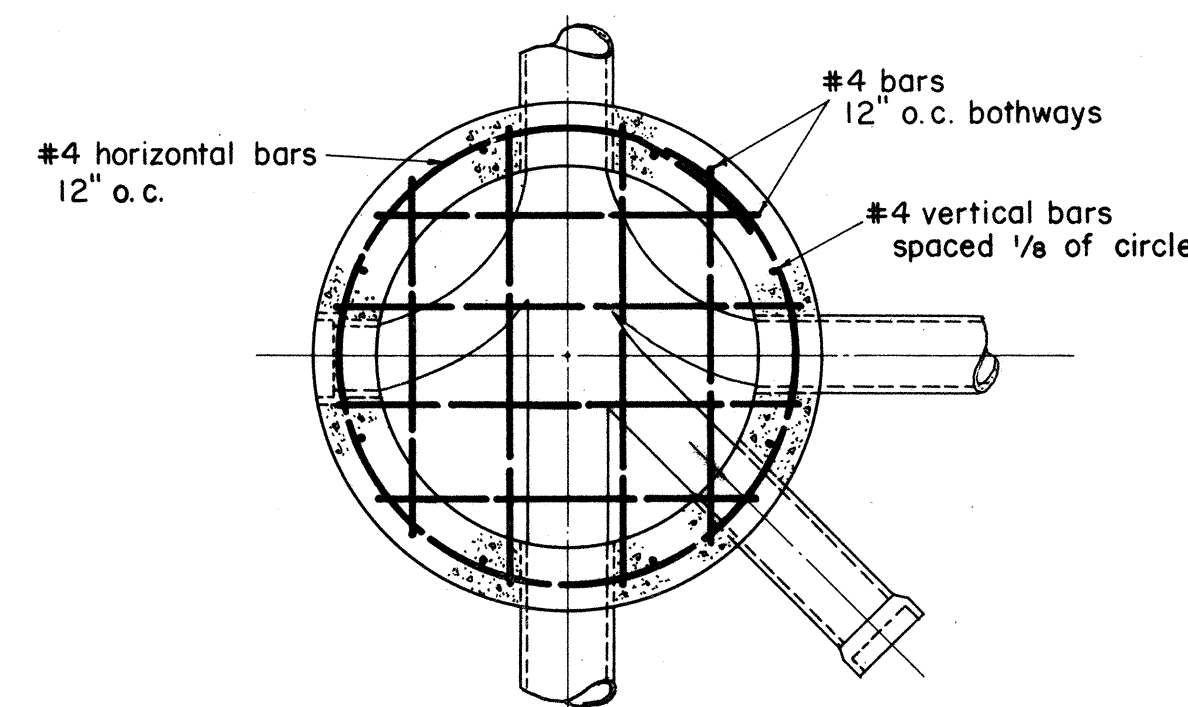
Scale: 1/2" = 1'-0"



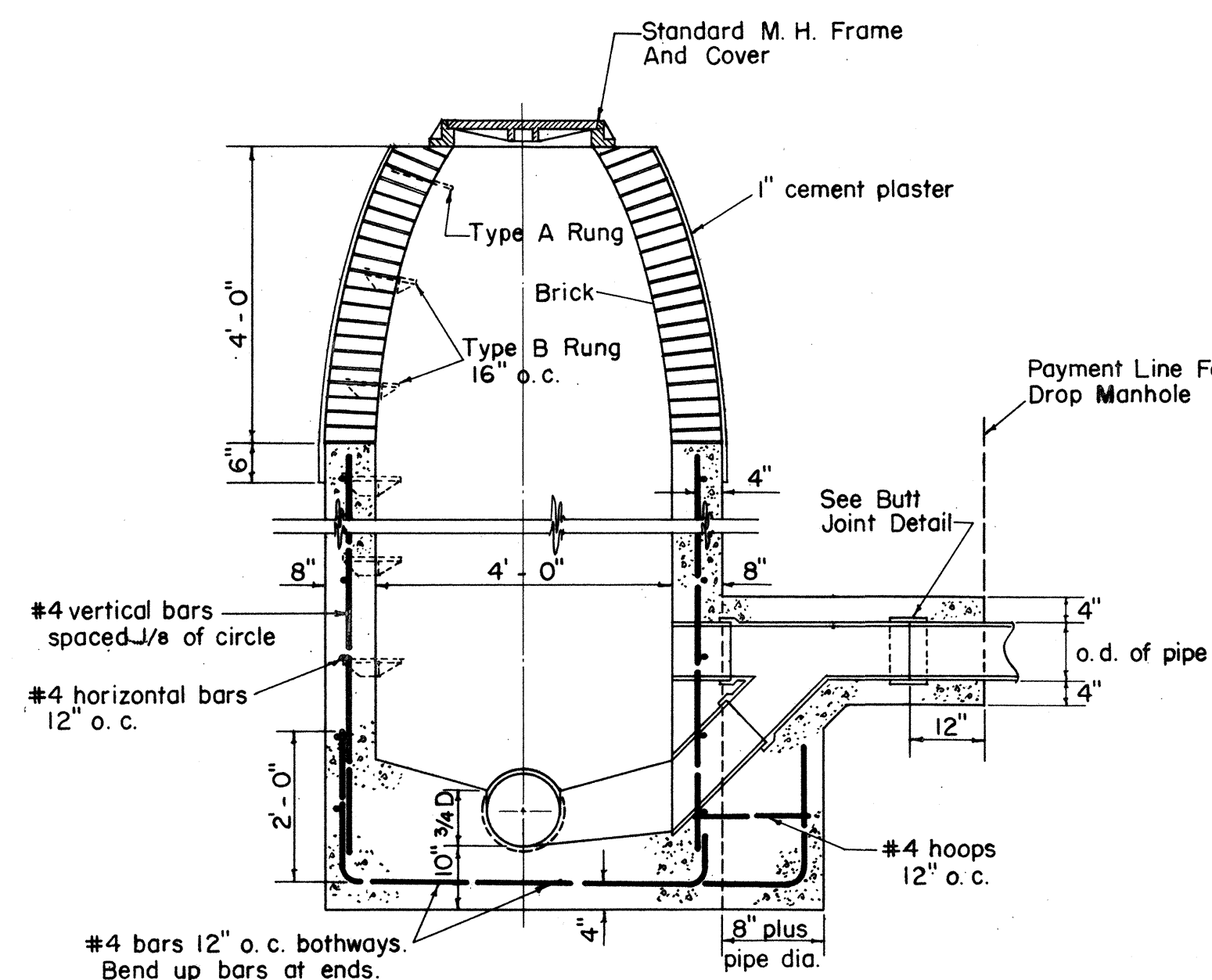
DROP MANHOLE

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

NOTE:  
2" Minimum Cover  
On Reinforcing Steel



SECTION E-E



(FOR DROPS UNDER 5.0 FEET)  
(SHALLOW) DROP MANHOLE

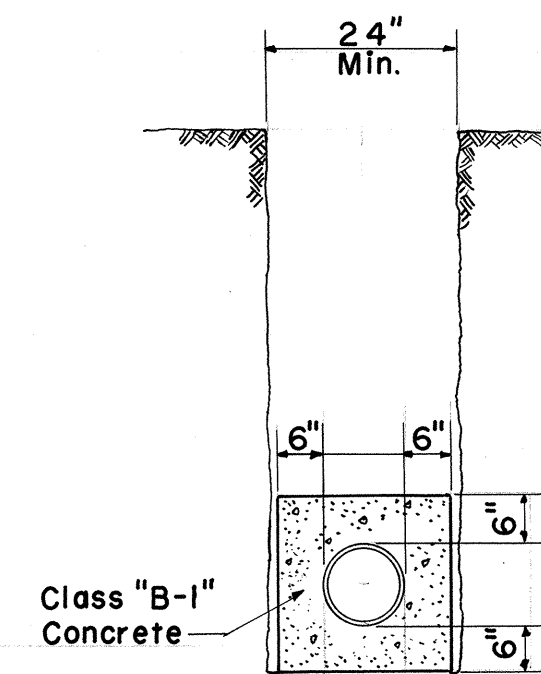
Scale: 1/2" = 1'-0"

NOTE:

- Manhole rungs shall not be aligned above any flow line.
- No rungs shall be installed in manholes less than 3' high.
- When not otherwise noted, manhole stubs shall be sloped as follows:

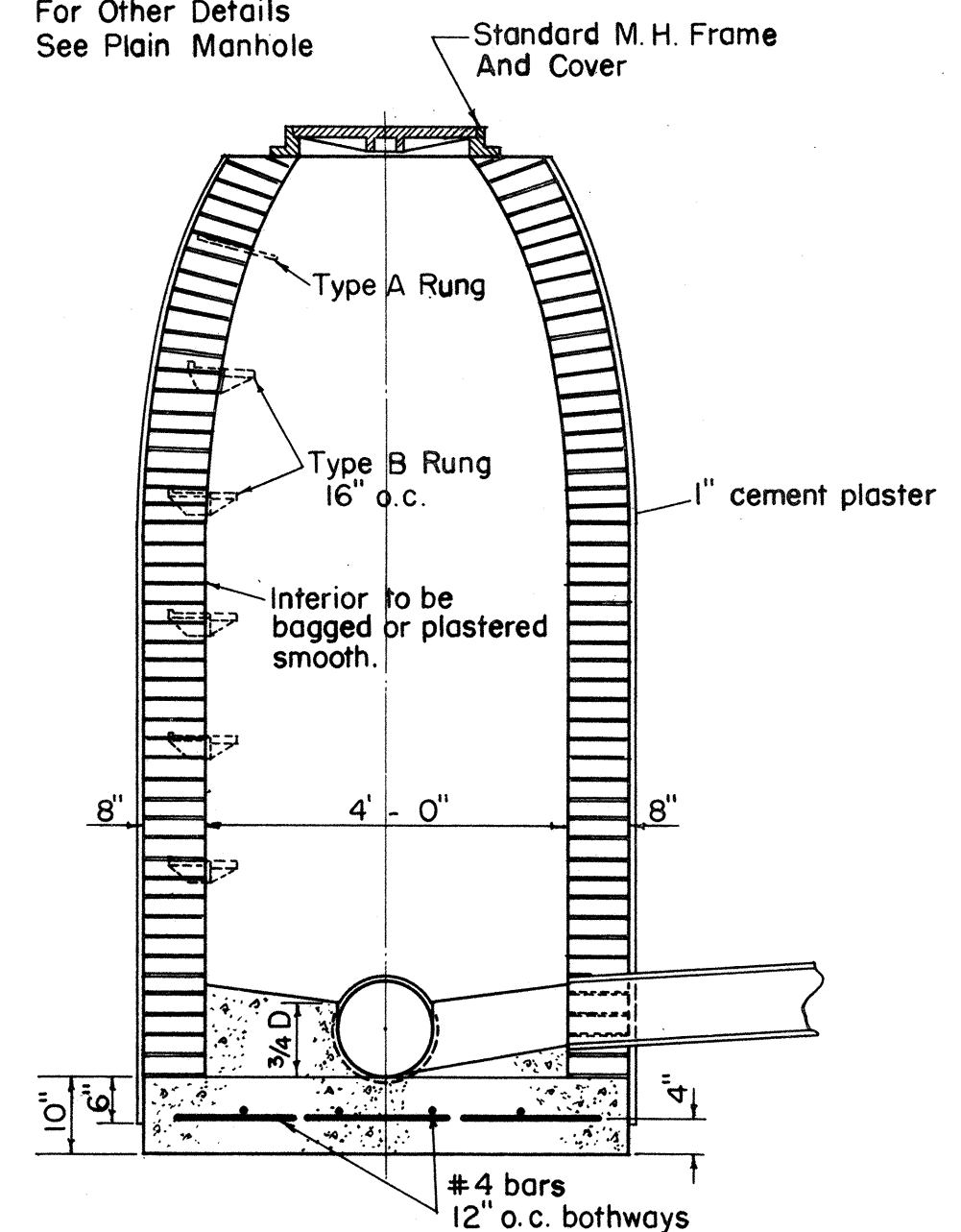
| Pipe Size | Rise Per Foot |
|-----------|---------------|
| 6"        | 1/8"          |
| 8"        | 3/32"         |
| 10"       | 1/16"         |
| 12"       | 1/16"         |

- All reinforcing rods interfering with pipes shall be bent to clear them.
- Bar laps to be 40 diameters in length.
- Data for special manholes not shown shall be similar to that for plain manholes.
- Size of drop pipe in all Drop Manholes shall be same as influent line.
- Manhole wall to be of reinforced concrete to height 1' above normal ground water table.



DETAIL OF  
CONCRETE JACKET

NOTE:  
For Other Details  
See Plain Manhole



(MAXIMUM HEIGHT - 10.0 FEET)  
BRICK MANHOLE

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

Payment for excavation for manholes shall be made under unit price for trench excavation and shall be measured to one foot outside of walls from original ground elevation to authorized bottom elevation.  
Payment for manhole walls (brick, precast concrete or cast-in-place concrete) shall include brick, precast concrete pipe sections, mortar, concrete, reinforcing steel, cast-iron steps, galvanized wrought iron rungs, and plastering.  
Payment for manhole bases shall include concrete, reinforcing steel, and the construction of inverts.

DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
STATE OF HAWAII

PROJECT NO. F-090-1(6)

|                                                                                 |                              |        |  |
|---------------------------------------------------------------------------------|------------------------------|--------|--|
| DEPARTMENT OF PUBLIC WORKS<br>CITY AND COUNTY OF HONOLULU<br>DIVISION OF SEWERS |                              |        |  |
| REVISED<br>STANDARD DETAILS<br>(SUPERSEDES STANDARD DATED 11-1-54)              |                              |        |  |
| ENGINEER: <i>A. T. Tamm</i>                                                     | DATE: <i>October 4, 1957</i> |        |  |
| DRAFTSMAN: <i>P. Tamm</i>                                                       | CHECKED BY: <i>P. Tamm</i>   |        |  |
| SCALE: <i>1/2" = 1'-0"</i>                                                      | TRACER: <i>P. Tamm</i>       |        |  |
| APPROVED: <i>P. Tamm</i>                                                        | APPROVED: <i>P. Tamm</i>     |        |  |
| CHIEF ENGINEER                                                                  | DIVISION ENGINEER            |        |  |
| W. B. SEC.                                                                      | PROFILE                      | G. B.  |  |
| W. M. BY:                                                                       | F. W. BY:                    | S. BY: |  |