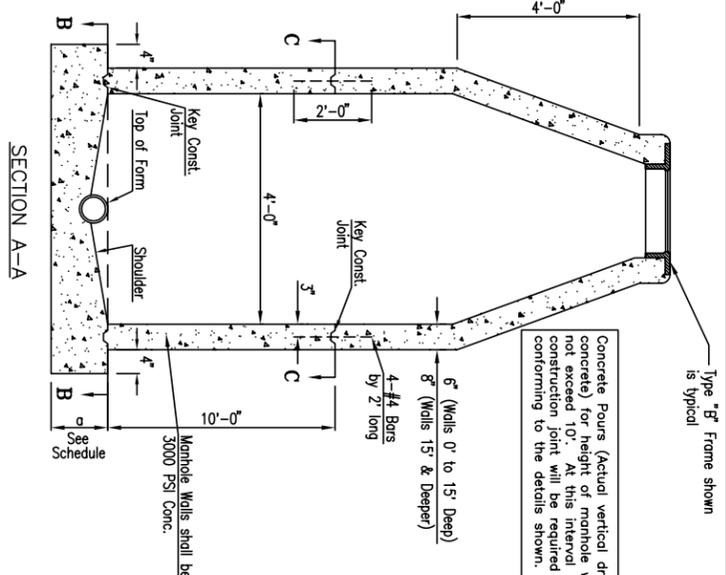


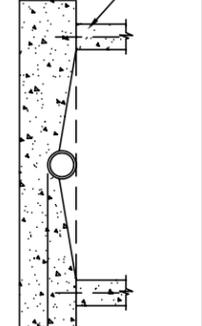
Type "B" Frame shown is typical  
Concrete Pours (Actual vertical drop of concrete) for height of manhole walls shall not exceed 10'. At this interval a construction joint will be required conforming to the details shown.



SCHEDULE OF BASE THICKNESS	Pipe Diameter	Thickness
1'-6"	8"	1-6"
10'	10"	1-8"
12'	12"	1-11"
15'	15"	2-2"
18'	18"	2-6"
21'	21"	2-10"
24'	24"	3-1"

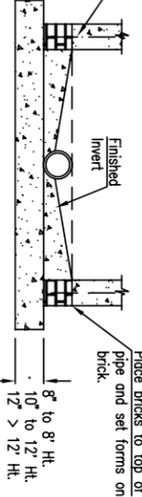
Forms shall rest on firm Bedding as directed by Field Engineer.

No Key Joint required. Use 4 - #4 Bars at 90° Angles



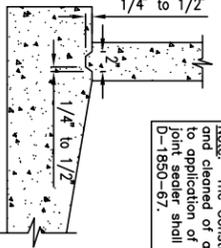
ALTERNATE NO. 1

Use 4 - #4 Bars at 90° Angles



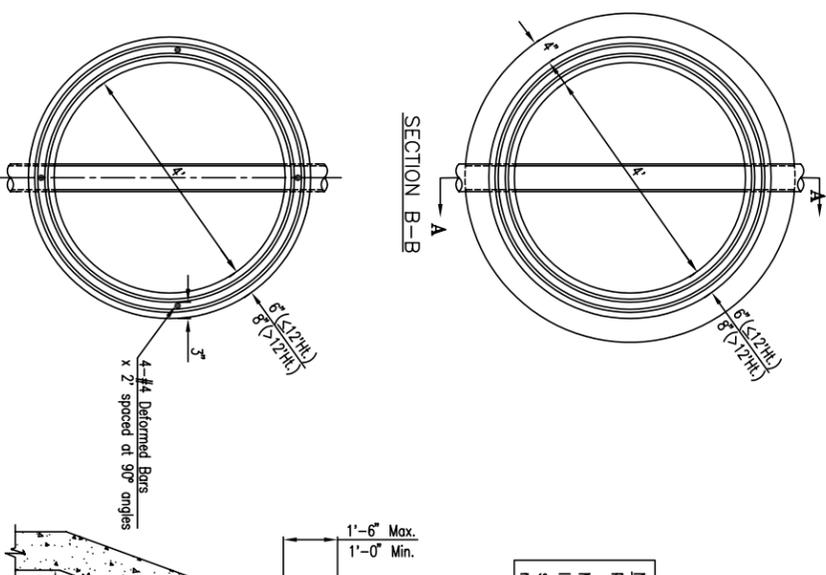
ALTERNATE NO. 2

Note: The Construction Joint shall be inspected and cleaned of any excess foreign matter prior to application of any concrete joint sealer. Concrete joint sealer shall comply with ASTM Designation D-1850-67.



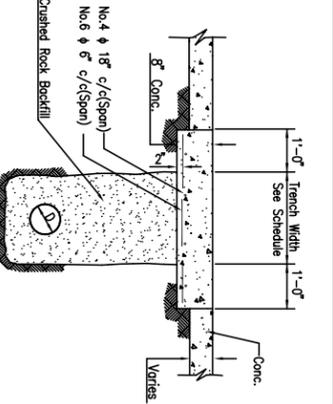
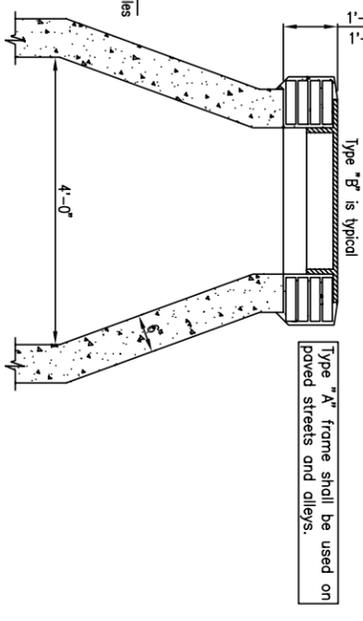
**KEY CONSTRUCTION JOINT FOR BOTTOM & WALLS DETAIL**  
N.T.S.

Note: The following Alternate Concrete Mix may be permitted:  
Mix design: 3000 lb. pump mix, 1416 lb. of rock, 1700 lb. of sand, 5 1/2 bags of cement, or 517 lbs., and sufficient water to produce a 4" slump. No vibration required when placing this mix.

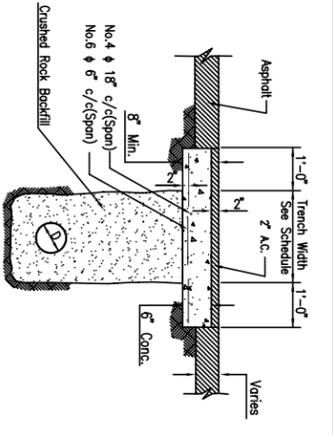


**POURED-IN-PLACE STANDARD MANHOLE**  
N.T.S.

**TYPICAL SECTION TO BE USED WITHIN STREET RIGHT-OF-WAY**  
N.T.S.

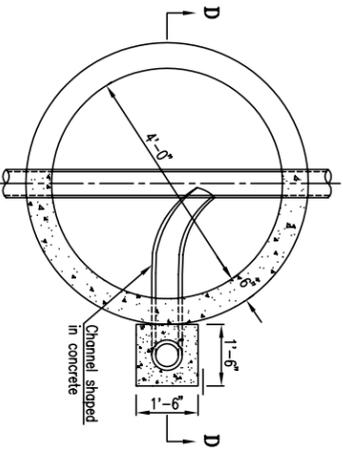


**TYPICAL PERMANENT REPAIR FOR P.C. CONCRETE PAVING**

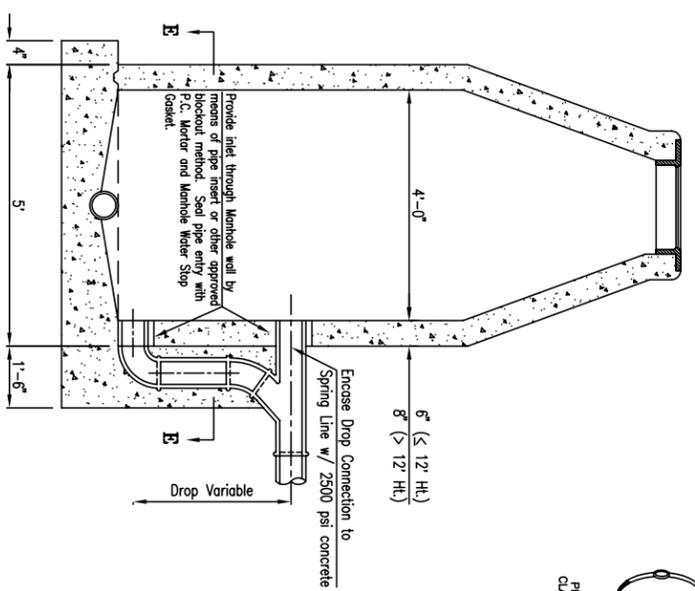


**TYPICAL PERMANENT REPAIR FOR ASPHALTIC CONCRETE PAVING**

NOTE: IF SANITARY SEWER IS INSTALLED IN FRONT YARD OR STREET R/W THE DITCH SHALL BE BACKFILLED WITH ROCK TO WITHIN 12" OF FINAL GRADE.

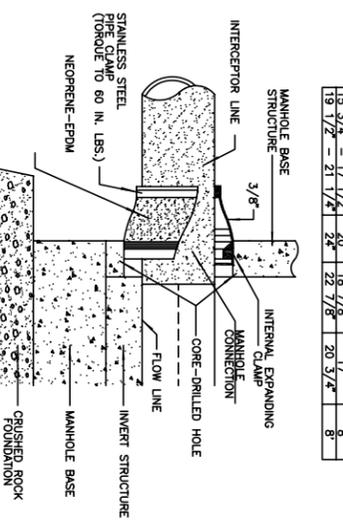


SECTION E-E



SECTION D-D

**POURED-IN-PLACE DROP MANHOLE**  
N.T.S.

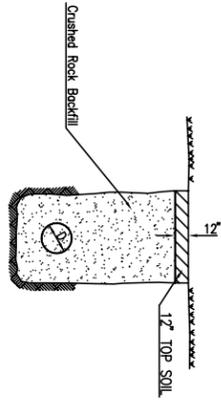


**STANDARD DETAIL FOR MANHOLE-PIPE CONNECTION**

SUGGESTED PIPE O.D. RANGE	HOLE & BOOT DIAMETER DIMENSIONS			
	A	B	C	D
3 1/2" - 4 1/2"	12"	8 1/2"	4 1/2"	6"
4 1/2" - 5 1/2"	12"	10 1/2"	6 1/2"	6"
5 1/2" - 6 1/2"	12"	10 7/8"	6 7/8"	6"
6 1/2" - 7 1/2"	12"	10 7/8"	6 7/8"	6"
7 1/2" - 8 1/2"	12"	10 7/8"	6 7/8"	6"
8 1/2" - 9 1/2"	12"	10 7/8"	6 7/8"	6"
9 1/2" - 10 1/2"	12"	10 7/8"	6 7/8"	6"
10 1/2" - 11 1/2"	12"	10 7/8"	6 7/8"	6"
11 1/2" - 12 1/2"	12"	10 7/8"	6 7/8"	6"
12 1/2" - 13 1/2"	12"	10 7/8"	6 7/8"	6"
13 1/2" - 14 1/2"	12"	10 7/8"	6 7/8"	6"
14 1/2" - 15 1/2"	12"	10 7/8"	6 7/8"	6"
15 1/2" - 16 1/2"	12"	10 7/8"	6 7/8"	6"
16 1/2" - 17 1/2"	12"	10 7/8"	6 7/8"	6"
17 1/2" - 18 1/2"	12"	10 7/8"	6 7/8"	6"
18 1/2" - 19 1/2"	12"	10 7/8"	6 7/8"	6"
19 1/2" - 21 1/2"	24"	22 7/8"	20 3/4"	8"

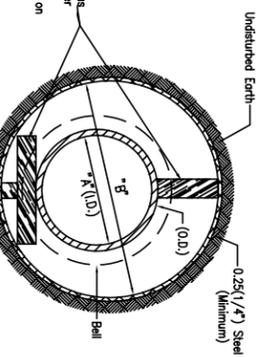
NOTE: ALL CLAMPS SHALL BE STAINLESS STEEL.

**TYPICAL SECTION FOR FRONT YARD SEWERS**



**GENERAL NOTES FOR POURED-IN-PLACE MANHOLES**

- Materials for concrete shall conform, as a minimum to the following:
  - Portland Cement: ASTM C 150
  - Aggregate for Mortar: ASTM C 144
  - Fine & Course Aggregate: ASTM C 33
- Water: Clean and free from deleterious substances. Total water content of concrete shall not exceed 6.5 gallons (34.2 liters) of water per 100 pounds (100 kg) of cement in the mix.
- The base shall be constructed of concrete having a minimum 3500 PSI compressive strength at 28 days (20,684 hr/m) and with a minimum slump of 4 inches (10 cm), vibrated or tamped. The base shall have a minimum diameter of 8 inches (20 cm) greater than the outside diameter of the manhole.
- The invert flow channel shall be formed during or immediately after the pouring of the manhole base and shall finish as soon as the concrete has set. The invert shall be finished to a true level and shall conform to the slope and in slope to that of the sewers. Sewer pipe, with the top half removed, shall be laid through the manhole whenever possible.
- The inside bottom of the manhole shall rise a minimum of 1 inch per foot (3.3 cm/m) from the side of the pipe or the flow channel to the wall of the manhole. Dips or projections capable of holding water or solid materials shall not be permitted. Concrete shall set for 24 hours before any pipe inside the manhole is trimmed.
- All sewers constructed of rigid or semi-rigid pipe extending from all manholes shall be encased with concrete with a distance of 3 feet (0.9 m) from the outside wall of the manhole. This support may be deleted if a flexible water-tight gasket is used to connect the sewer to the manhole. No support is required for sewers constructed of flexible pipe.
- Wall thickness uniformly shall be obtained through the use of spacers located at the top and bottom of the manhole. For deep manholes, spacers located at a depth of one-half the manhole depth shall also be utilized. Wall thickness shall be 6" for manholes 0' to 12' deep and wall thickness shall be 8" for manholes greater than 12' deep.
- The base may be poured monolithically with the rest of the manhole. The base shall have a minimum thickness under the pipe as follows:
  - 0 ft. to 8 ft. (0 - 2.4 m) manhole heights: 8 inches
  - 8 ft. to 12 ft. (2.4 - 3.7 m) manhole heights: 10 inches
  - 12 ft. (3.7 m) and above manhole heights: 12 inches
- The construction joint shall be inspected and cleaned of any excess foreign matter prior to application of concrete joint sealer. Concrete joint sealer shall comply with ASTM Designation D 1850-67.
- Forms shall be provided for the shaping and finishing of the manhole bottoms. A minimum interval of 24 hours shall elapse prior to pouring of manhole walls. Construction of manhole bottoms shall comply with the standard specifications for the construction of sanitary sewers and appurtenances.
- Mortar for finishing and sealing shall be Class "C". Any homecoming of concrete less than 2" deep in 6" manhole walls may be repaired using Class "D" Mortar.
- This manhole is standard only for sewers 36" in diameter or less provided that at junction points, special manholes may be required for sewers smaller than 36" in diameter.
- Interior surfaces of all manhole walls shall receive two (2) coats of an approved sealer. A minimum interval of 24 hours shall elapse between applications of sealer.
- Manholes shall conform to the requirements of Oklahoma State Department of Environmental Quality. The more restrictive requirement between The City of Moore and the ODEQ shall govern in cases where there are discrepancies.



**TYPICAL SECTION FOR BORING PUBLIC STREETS**

**The City of MOORE Oklahoma**

Poured-in-Place Manhole Sanitary Sewer Standard Details No. 301

APPROVED BY: [Signature] DATE: 03/08/2008  
 DESIGNED BY: [Signature] DATE: 03/05/2008  
 CHECKED BY: [Signature] DATE: 03/05/2008