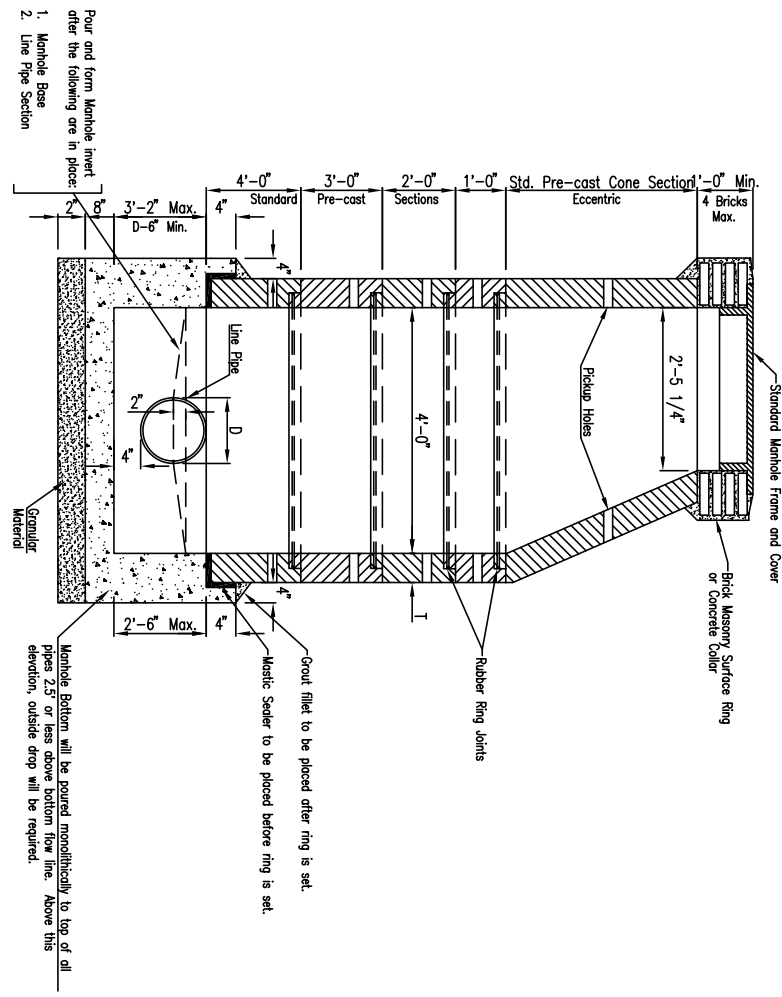


**STANDARD DETAIL FOR  
BASE SECTIONS**

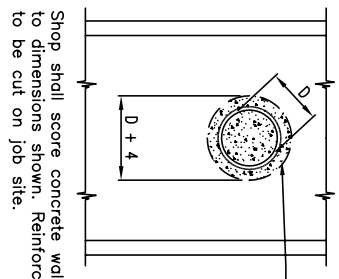


**TYPICAL BASE DETAILS  
4'-0" DIAMETER MANHOLE  
(Eccentric Cone)**  
N.I.S.

Pour and form Manhole invert after the following are in place:  
1. Manhole Base  
2. Lin Pipe Section

Manhole Bottom will be poured monolithically to top of all pipes 2.5' or less above from the Manhole invert. Above this elevation, outside drop will be required.

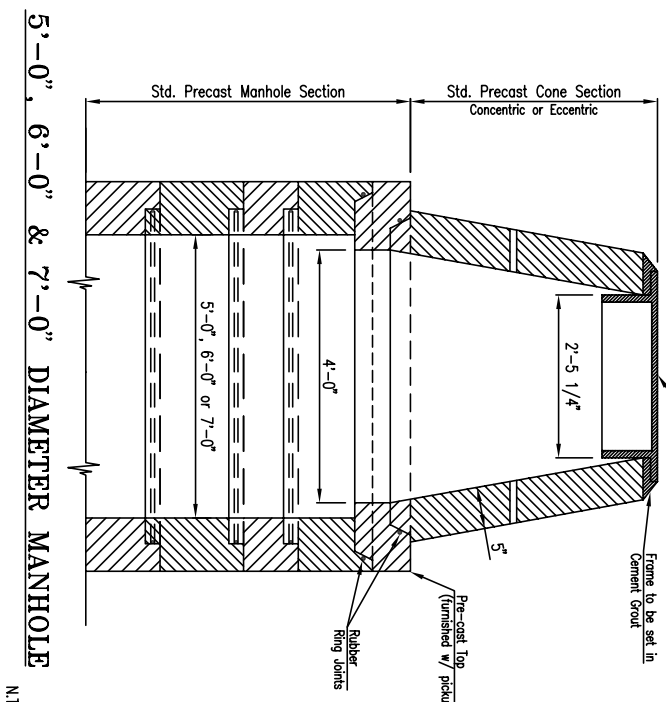
Mastic Sealer to be placed before ring is set.  
Grout fill to be placed after ring is set.



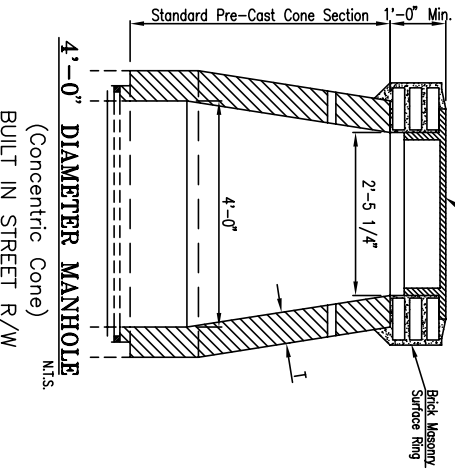
**PIPE CONNECTION DETAILS**

Shop spall score concrete walls to dimensions shown. Reinforcing to be cut on job site.

P.C. Mortar and Manhole Water-Stop Gasket or Flexible Water Tight Gasket

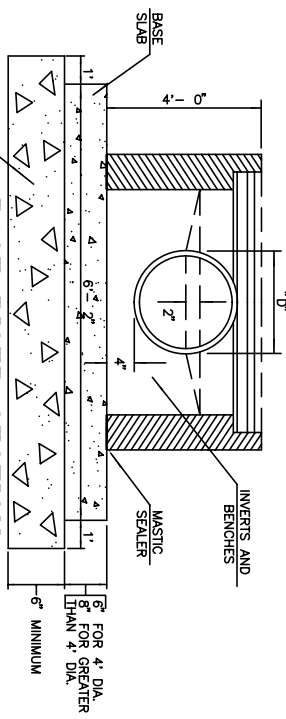


**5'-0", 6'-0" & 7'-0" DIAMETER MANHOLE**  
N.I.S.

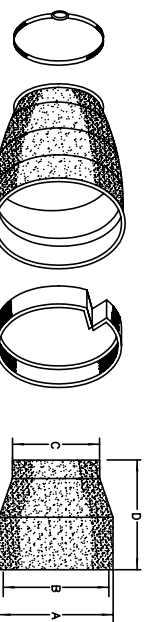
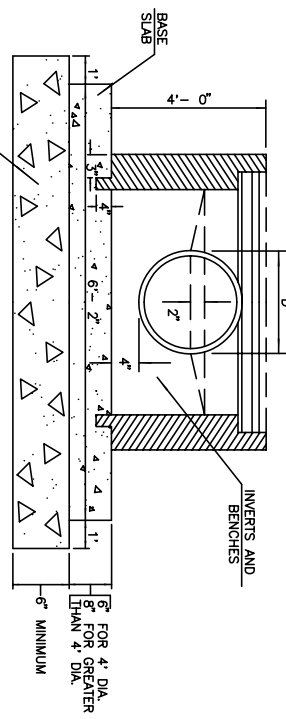


**4'-0" DIAMETER MANHOLE  
(Concentric Cone)  
BUILT IN STREET R/W**  
N.I.S.

**BASE RISER SECTION WITH MASTIC SEALER**  
OPTION "A"

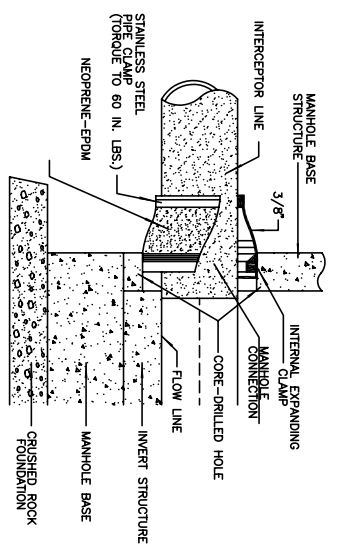


**BASE RISER SECTION WITH PERFORMED SOCKET**  
OPTION "B"

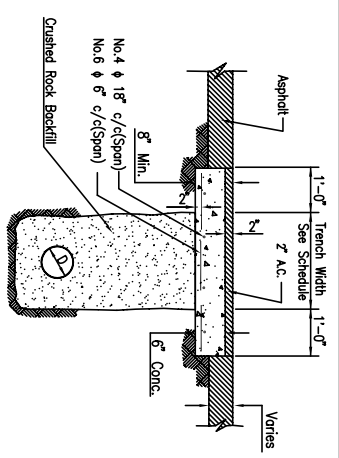


NOTE: ALL CLAMPS SHALL BE STAINLESS STEEL.

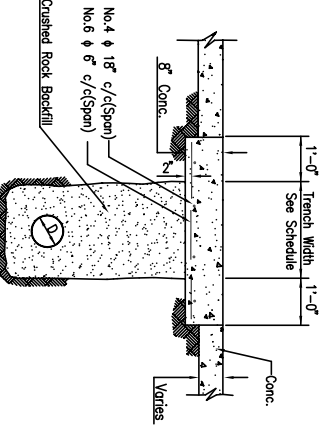
SUGGESTED O.D. RANGE	HOLE & BOOT DIAMETER DIMENSIONS			
	A	B	C	D
3 1/2" - 4 1/2"	1 1/2"	6 1/8"	4 1/4"	6"
5 3/8" - 6 1/2"	1 7/8"	10 1/8"	6 1/2"	8"
8 3/16" - 9 3/4"	1 3/4"	10 7/8"	9 1/4"	8"
10 3/4" - 12 1/2"	1 7/8"	14 7/8"	10 1/2"	8"
12 7/8" - 15 3/4"	2"	18 7/8"	13 1/4"	8"
14 1/2" - 16 1/4"	2 1/8"	18 7/8"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



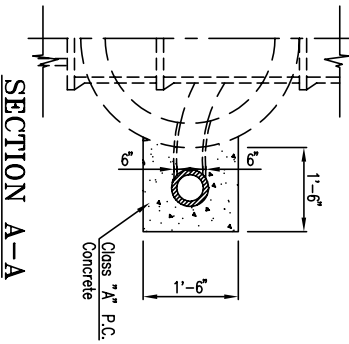
**STANDARD DETAIL FOR  
MANHOLE-PIPE CONNECTION**  
N.I.S.



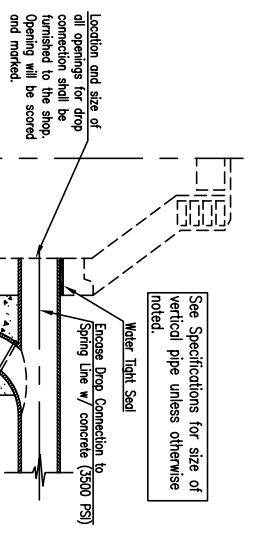
**TYPICAL PERMANENT REPAIR FOR ASPHALTIC CONCRETE PAVING**



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



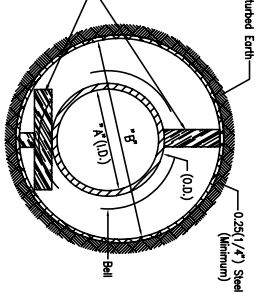
**SECTION A-A**



**DROP MANHOLE CONNECTION**  
N.I.S.

**GENERAL NOTES FOR  
PRECAST MANHOLES**

- All pre-cast components shall be reinforced per their respective ASTM specifications.
- All joints shall have approved rubber rings.
- All lifting holes shall be repaired with a mixture of cement and sand grout firmly packed.
- The interior surfaces of manhole and cone sections shall be coated with two (2) coats of approved sealer.
- The minimum compressive strength of the concrete in manhole and cone sections shall be 4000 PSI.
- Cement used in the construction of pre-cast reinforced concrete manholes shall conform to the requirements of the standard specifications for portland cement (ASTM designation: C 150).
- The minimum shell thickness for pre-cast concrete reinforced manholes shall be:  
At a depth of 0 to 16 feet: One-twelfth (1/12) internal shell diameter or 4 inches (10cm), whichever is greater.  
At a depth greater than 16 feet: One-twelfth (1/12) internal shell diameter or 5 inches (13cm), whichever is greater.
- Any pre-cast reinforced concrete section which has been damaged in transit or on site such that the water tightness of the section has been affected adversely shall not be utilized in the construction of the manholes.
- Materials for concrete used for manhole bases shall conform, as a minimum, to the following current specifications:  
ASTM C 150 Portland Cement  
ASTM C 144 Aggregate for Mortar  
ASTM C 33 Fine & Coarse Aggregate  
Water: Clean and free from deleterious substances. Total water content of concrete shall not exceed 6.5 gallons (54.2l) of water per 100 pounds (100kg) of cement in the mix.
- The base shall be poured of a minimum 3500 PSI (20.68kN/m<sup>2</sup>) concrete with a maximum slump of 4 inches (10cm), vibrated or tamped. The base shall have a minimum diameter of 8 inches (20cm) greater than the outside diameter of the manhole. The base shall have a minimum of 8 inch (20cm) thickness beneath the manhole wall.
- The invert flow channel shall be formed during or immediately after the pouring of the manhole base, and burst finished as soon as the concrete has sufficiently set. The flow channel through manholes shall be made to conform to slope and in slope to that of the sewers. Sewer pipe, with the top half removed, shall be laid through the manhole wherever possible. The inside bottom of the manhole shall rise a minimum of 1 inch per foot (8.3 cm/m) from the side of the pipe or the flow channel to the wall of the manhole. Lips or projections capable of holding water or solid materials will not be permitted. The concrete shall set for 24 hours before any pipe inside the manhole is trimmed.
- All sewer constructed of rigid or semi-rigid pipe extending from all manholes shall be encased with concrete to a distance of 3 feet (0.9m) from the outside wall of the manhole. This support may be deleted if a flexible, watertight gasket is used to connect the sewer to the manhole. No support is required for sewers constructed of flexible pipe.
- The interior surface of all manhole walls shall receive two (2) coats of an approved sealer. A minimum 24 hours shall elapse between coats.
- Manholes shall conform to the requirements of Oklahoma 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**

Precast Manhole Sanitary Sewer Standard Details  
No. 302

APPROVED BY: [Signature] DATE: 03/08/2008  
DESIGNED BY: [Signature] DATE: 03/08/2008  
CITY ENGINEER