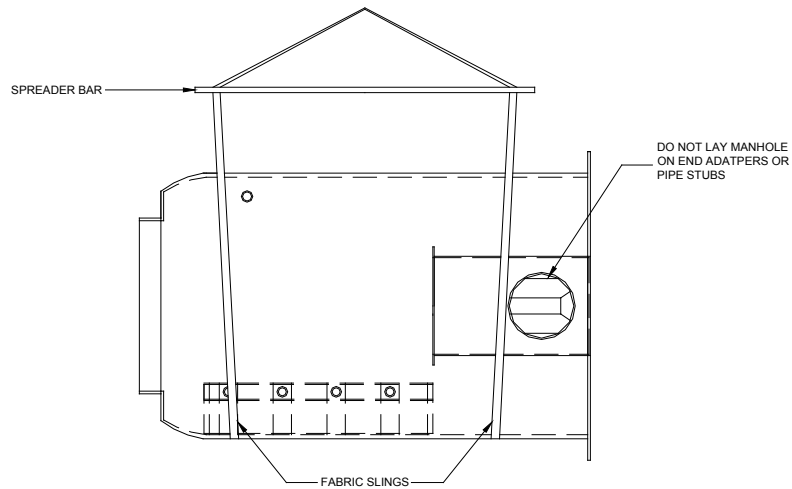


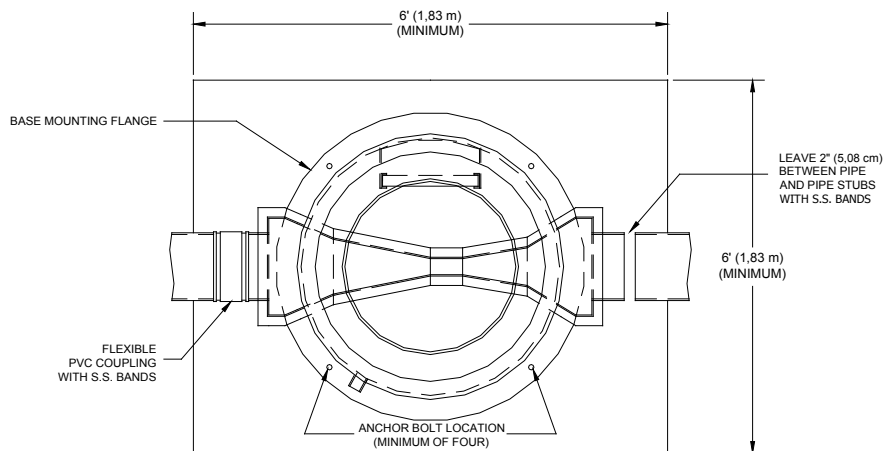


TRACOM METERING MANHOLE INSTALLATION INSTRUCTIONS

1. Follow all instructions provided by the project engineers in the form of specifications, blue prints, etc.
2. UNLOADING AND STORAGE OF THE MANHOLE
 - a. Use a spreader bar and **FABRIC** sling for handling, as shown below. Do **NOT** use a cable or chain, as these will serrate the fiberglass.



- b. The manhole must be stored on a smooth surface, free of sharp objects. If the manhole is laid horizontally, it must be placed in such a way so as to avoid damage to the inlet and outlet end adapters or any portion of the flume extending outside of the manhole barrel.



3. SITE PREPARATION

- a. Excavation of the site should be wide enough for the manhole slab while providing a safe working area. The concrete slab should be **level to 1/8 inch**. The surface of the slab should be troweled **smooth**.

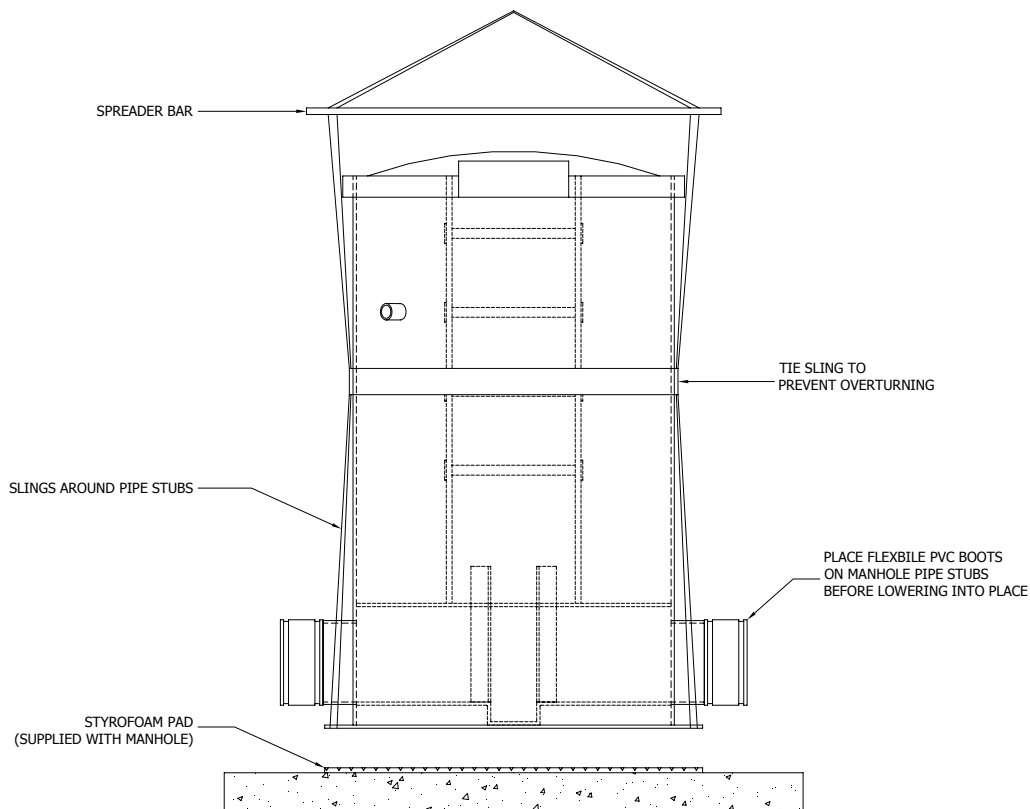


TRACOM METERING MANHOLE INSTALLATION INSTRUCTIONS (CONTINUED)

- b. The slab should be of sufficient size to encompass the **ENTIRE** manhole (including the pipe stubs and a sufficient portion of the inlet/outlet pipes) and should be sized by the engineer to ensure that flotation does not occur.

4. PLACING THE MANHOLE ON THE SLAB

- a. Level the slab to 1/8 inch, with grout if necessary.
- b. Place the Styrofoam pad provided with the manhole on the concrete slab in the desired location.
- c. Attach the flexible boots to the pipe stub connections on the manhole.
- d. Attaching optional gooseneck vent (If ordered)
1. Remove all pieces from each other.
 2. Place intermediate piece in the middle of the appropriate hole
 3. Insure PVC arm with screen is on the outside of the manhole
 4. Use PVC glue to attach each end with the use of the intermediate piece to secure vent.
- e. Move and position the manhole (or manhole base section in the case to two-piece manholes) using a fabric sling and spreader bar, as shown below.
- f. Verify the direction of flow through the flume. **DO NOT RELY SOLELY ON THE FLOW ARROW.**

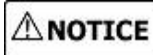


- g. Layout the anchor bolt pattern according to the engineer's specifications. Drill through the manhole mounting flange and Styrofoam pad and into the concrete slab in accordance with the anchor bolt manufacturer's recommendations for diameter and depth. **Wedge style anchor bolts are recommended.**
- h. Secure the anchor bolts. **Do not tighten completely. CHECK THE LEVEL OF THE FLUME AND ADJUST THE ANCHOR BOLTS AS NECESSARY.**



TRACOM METERING MANHOLE INSTALLATION INSTRUCTIONS (CONTINUED)

- i. It is important to grout the area outside the manhole barrel between the flume and the concrete pad so as to fully support the flume. For flumes where at least a portion of the unit sits above the concrete pad at a height greater than the distance between the pipe stubs and the pad, concrete pillars or pre-cast block may be required to support the flume during grouting and backfilling.
- j. **A concrete shoulder should be poured between the flume and the manhole barrel. The purpose of the shoulder is to allow for any blockage overflow to drain back into the flume and out the manhole when the blockage is removed. In lieu of a complete concrete shoulder, sand may be poured between the flume and the manhole barrel to within 3 inches of the top of the flume. The sand must then be capped with sloped concrete cap.**



If the internal shoulder is poured, the flume must be braced internally so as to avoid distortion of the floor and sidewalls. Do not use a vibrator.

- k. For two-piece manholes, wipe down the contact surfaces of the mating flanges on the base and top sections of the manhole. Apply a very generous bead of urethane caulk (provided with the manhole) to the mating flanges and move the top section into position. Location notches are provided on both flanges to assist in orienting the two sections. In addition, vertical locating marks are painted on the outside of the barrel section. Align the location notches in the flanges (the vertical locating marks will also line up) and bolt the manholes sections together with the stainless steel hardware provided. Looking into the manhole, verify that the ladder sections are in-line with one another. Once it has been verified that the ladder section are in-line with one another, on the inside of the manhole apply a bead of urethane caulk to the seam created where the two manhole section mate together.

5. BACKFILLING THE SITE

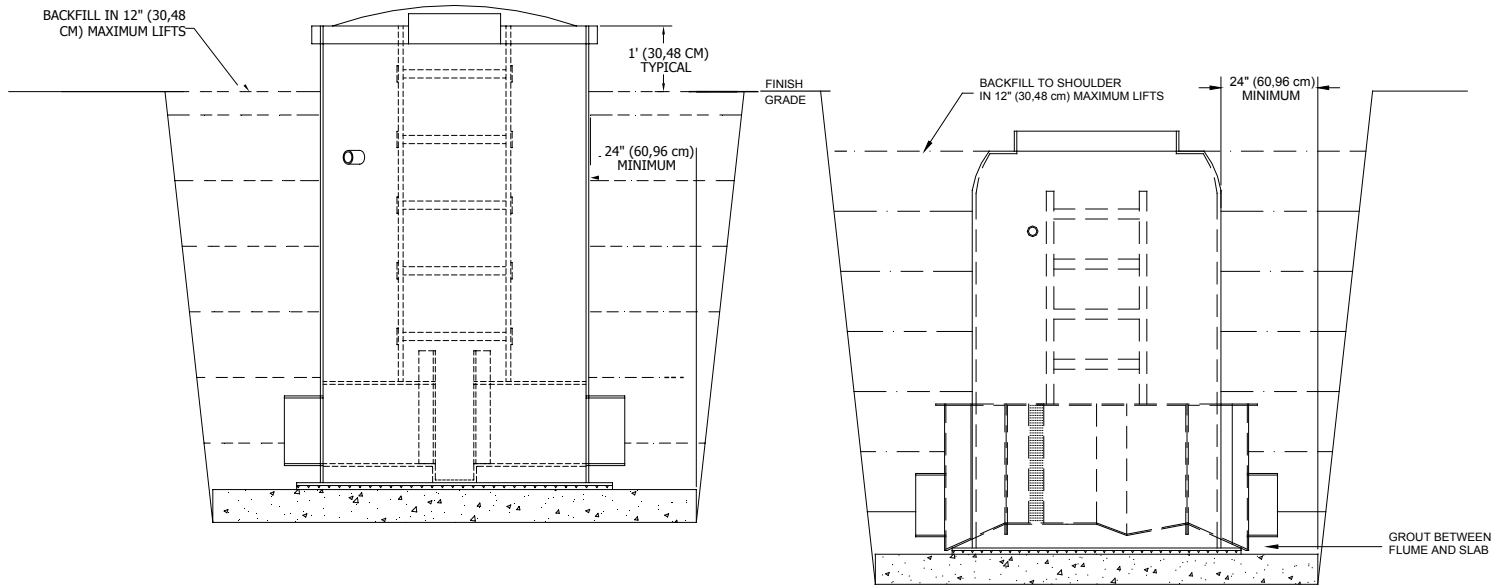
- a. Verify the level of the flume one last time.
- b. Groundwater or surface runoff should not be permitted to accumulate in the open excavation around the manhole when it has not been completely backfilled.
- c. Backfill materials must be placed evenly around the manhole in maximum lifts of 12 inches and should extend a minimum of 24 inches.
- d. A gravel material naturally round, 1/4-3/8 inch in size, is best for backfill material since it compacts easily. Pea gravel is the recommended backfill material.

- e. If materials other than pea gravel are to be used for backfill, large soil lumps, rock, concrete, etc. over 1 inch in size must be removed.



Soil conditions vary, thus knowledgeable engineering advice is recommended to assure proper backfill materials and procedures are used.

TRACOM METERING MANHOLE INSTALLATION INSTRUCTIONS (CONTINUED)



WARNING

METERING MANHOLES MAY BE CLASSIFIED AS CONFINED SPACE ENTRY LOCATIONS. CONSULT ALL APPROPRIATE LOCAL, STATE AND FEDERAL REGULATIONS BEFORE ENTERING.

WARNING

ALWAYS COMPLY WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS REGARDING EXCAVATION AND TRENCHING.

NOTICE

IF IN DOUBT AS TO THE SIZE, NUMBER, OR SPACING OF ANCHOR BOLTS, THE SIZING OR SPECIFICATION OF THE CONCRETE SLAB, OR THE NATURE OF THE PROPER BACKFILL MATERIAL, CONSULT KNOWLEDGEABLE PROFESSIONAL ENGINEERING ADVISE BEFORE CONTINUING.

NOTICE

SHOULD ANY PORTION OF THE INSTALLATION INSTRUCTIONS NOT BE CLEAR, DO NOT PROCEED UNTIL ALL QUESTIONS HAVE BEEN ANSWERED.