**Table P-1: Approximate Angle of Repose for Sloping of Sides of Excavations**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Approximate Angle of Repose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compacted Angular Gravels</td>
<td>1 (63°26')</td>
</tr>
<tr>
<td>Slightly Compacted Sand</td>
<td>2 (45°)</td>
</tr>
<tr>
<td>Well Round Loose Sand</td>
<td>2 (26°34')</td>
</tr>
<tr>
<td>Solid Rock, Shale or Cemented Sand and Gravels (90°)</td>
<td>1 (90°)</td>
</tr>
<tr>
<td>Compacted Sharp Sand</td>
<td>1 (33°41')</td>
</tr>
</tbody>
</table>
| Clays, Silts, Loams or Non-Homogenous Soils | Require Shoring and Bracing. The Presence of Ground Water Requires Special Treatment.

**Table P-2: Trench Shoring & Sheetin - Minimum Requirements**

<table>
<thead>
<tr>
<th>Length of Trench</th>
<th>Kind of Condition of Earth</th>
<th>Min. Spacing</th>
<th>Max. Spacing</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 to 10 ft.</td>
<td>Hard, Compacted</td>
<td>3 x 4 or 2 x 6</td>
<td>8 x 10</td>
</tr>
<tr>
<td>10 to 15 ft.</td>
<td>Hard, Compacted</td>
<td>3 x 4 or 2 x 6</td>
<td>8 x 10</td>
</tr>
<tr>
<td>15 to 20 ft.</td>
<td>Hard, Compacted</td>
<td>3 x 4 or 2 x 6</td>
<td>8 x 10</td>
</tr>
<tr>
<td>Over 20 ft.</td>
<td>Hard, Compacted</td>
<td>3 x 4 or 2 x 6</td>
<td>8 x 10</td>
</tr>
</tbody>
</table>

Trench jacks may be used in lieu of, or in combination with, cross braces. Steel sheet piles or anchor rods, steel shoring, or wood shoring. Concrete or gravel fill, sheet piling and backfill of equal strength may be substituted for sheet piles. Shoring is not required in solid rock, hard shale, or hard slag. Where desirable, steel sheet piling and bracing of equal strength may be substituted for wood.
MIN.

DOMESTIC TURBINE AND COMPOUND METER, DOUBLE CHECK DETECTOR ASSEMBLY, VAULT DETAILS

SHALL NOT HAVE FENCES OR OTHER OBSTRUCTIONS INSTALLED IN FRONT OF THEM.

4. A DOMESTIC TURBINE AND COMPOUND METER VAULT MUST REMAIN EASILY ACCESSIBLE FROM THE STREET AT ALL TIMES

3. A DOUBLE CHECK DETECTOR ASSEMBLY VAULT WILL NOT BE ALLOWED TO BE INSTALLED IN A SIDEWALK OR PAVED AREA.

ALL TIMES AND SHALL NOT HAVE FENCES OR OTHER OBSTRUCTIONS INSTALLED IN FRONT OF THEM.

2. FIRE LINES SHALL NOT CROSS PROPERTY LINES OR ENCROACH ONTO ADJACENT PROPERTY.

4. A COMBINATION FIRE LINE AND DOMESTIC WATER METER VAULT MUST REMAIN EASILY ACCESSIBLE FROM THE STREET AT ALL TIMES

3. A DOMESTIC TURBINE AND COMPOUND METER VAULT WILL NOT BE ALLOWED TO BE INSTALLED IN A SIDEWALK OR PAVED AREA.

1. A DOUBLE CHECK DETECTOR ASSEMBLY SHALL NOT SERVE MULTIPLE PROPERTIES.

1. A DOMESTIC TURBINE AND COMPOUND METER SHALL NOT SERVE MULTIPLE PROPERTIES.

NOTES:

DOMESTIC TURBINE AND COMPOUND METER VAULT

DOUBLE CHECK DETECTOR ASSEMBLY (LEAK DETECTOR)

COMBINATION FIRE LINE AND DOMESTIC WATER METER VAULT

FLANGE BOLT REMOVAL.

2) TEST SPOOL NOT REQUIRED WITH METERS WITH BUILT IN TEST PORTS.

APPROVED EQUAL

(6" Min. DEPTH)

w/ WATER STOP & LINKSEAL GASKET OR

CRUSHED STONE w/ WATER STOP & CRUSHED STONE

1. ALL JOINTS TO BE WATERTIGHT w/ RAMINECK ADHESIVE OR PER

NOTES:

SUMP

CONC.

GROUT

PRECAST OR POURED IN PLACE

6"

12"x12"x1"

8"

6"

12" CLASS 200 MJ OR FLG

10 DIAMETERS (MIN.) OF STRAIGHT SECTION PIPE PRIOR TO FLG OF METER.

VALVE CHECK

COPPER SETTER PRIOR TO FLG OF METER.

VALVE YOKE

BENDS AS REQUIRED FOR WATER METER SET

FLG x P.E. SPOOL PIECE

BILCO J-3AL OR PCM-3 ALUMINUM DOOR

** BENDS AS REQUIRED FOR WATER METER SET

FLG COUPLING ADAPTORS

FLANGED SPOOL PIECE OR PVC w/ FLG COUPLING ADAPTORS

** USE BILCO J-3AL H20 FOR VAULTS REQUIRING WATER EASEMENT (25'x30' TYPICAL)

** USE BILCO J-3AL OR PCM-3 ALUMINUM DOOR FOR VAULTS REQUIRING WATER EASEMENT (15'x15' TYPICAL)

** H-10 LOADING REQUIREMENT

CONCRETE GROUT

CONCRETE GROUT

CONCRETE GROUT

CONCRETE GROUT

CONCRETE GROUT

CONCRETE GROUT

CONCRETE GROUT

CONCRETE GROUT

CONCRETE GROUT

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