

"Tapping at the Speed of Light"

Sponsored by
The Pipe Tapping Committee
PNWS - AWWA



Highland Water District
"The Best Shocks"
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* Dan Smith - Solder
* Steve White - Solder
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NW Oregon
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Spokane
"chances R"
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Chuck Fletcher - Copper
Jerry Coulter - Coach
SPC 4
APRIL 14, 1998
OVAR

Introduction

- A tapping team shall consist of 4 persons.
- 3 – Workers & 1 – Coach.
- The team will be required to:
- Tap a water pressurized ductile iron pipe.
- Install a corporation stop.
- Cut & flare 3/4" copper tubing.
- Install a water service line.
- Install a curb stop.
- Connect to a meter yoke.

INTRODUCTION

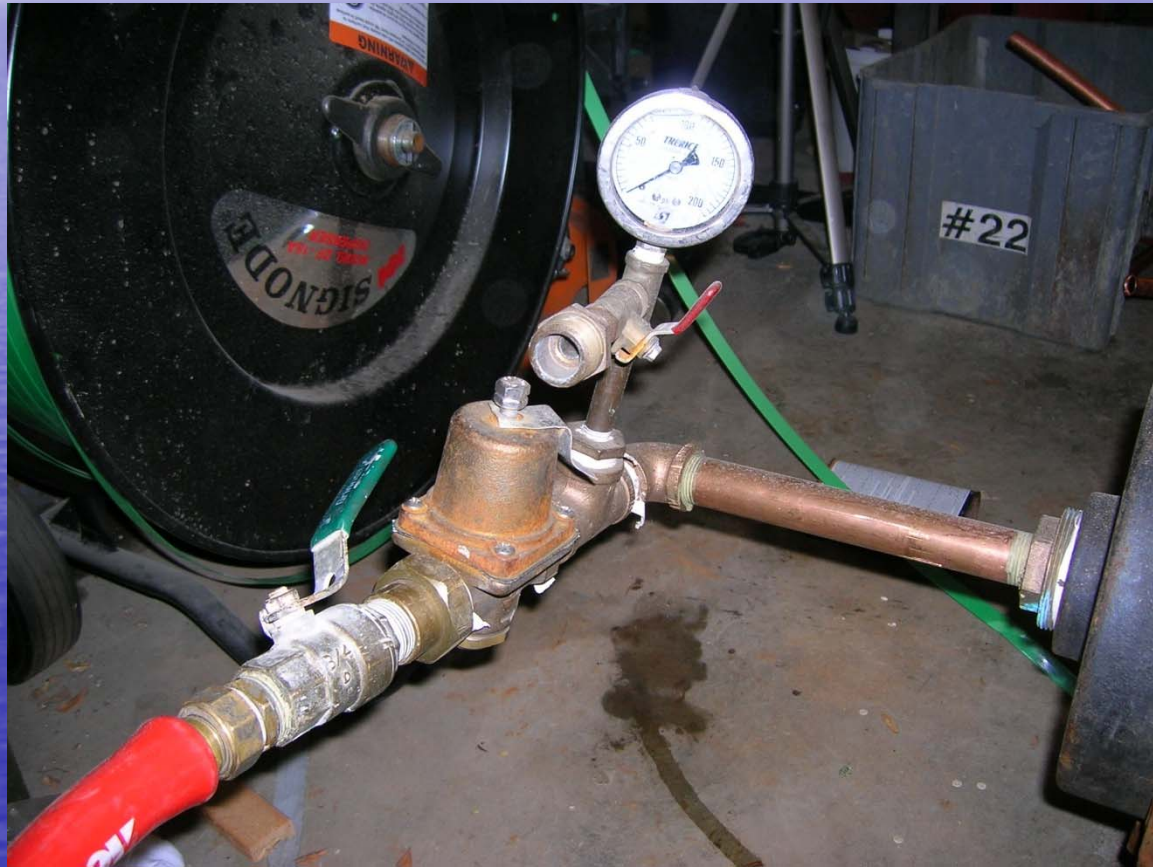
- A 30 minute time period shall be allowed for each team to complete 2 official taps.
- The team with the fastest official time, includes penalty seconds assessed, will be the winner.

GENERAL

- Pipe to be tapped will be AWWA C151, 6" Class 52 Ductile Iron Pipe.
- The pipe shall be cement lined, capped and pressurized to 40-45 PSI.



The Each team is responsible to turn water on & bleed air from the line.

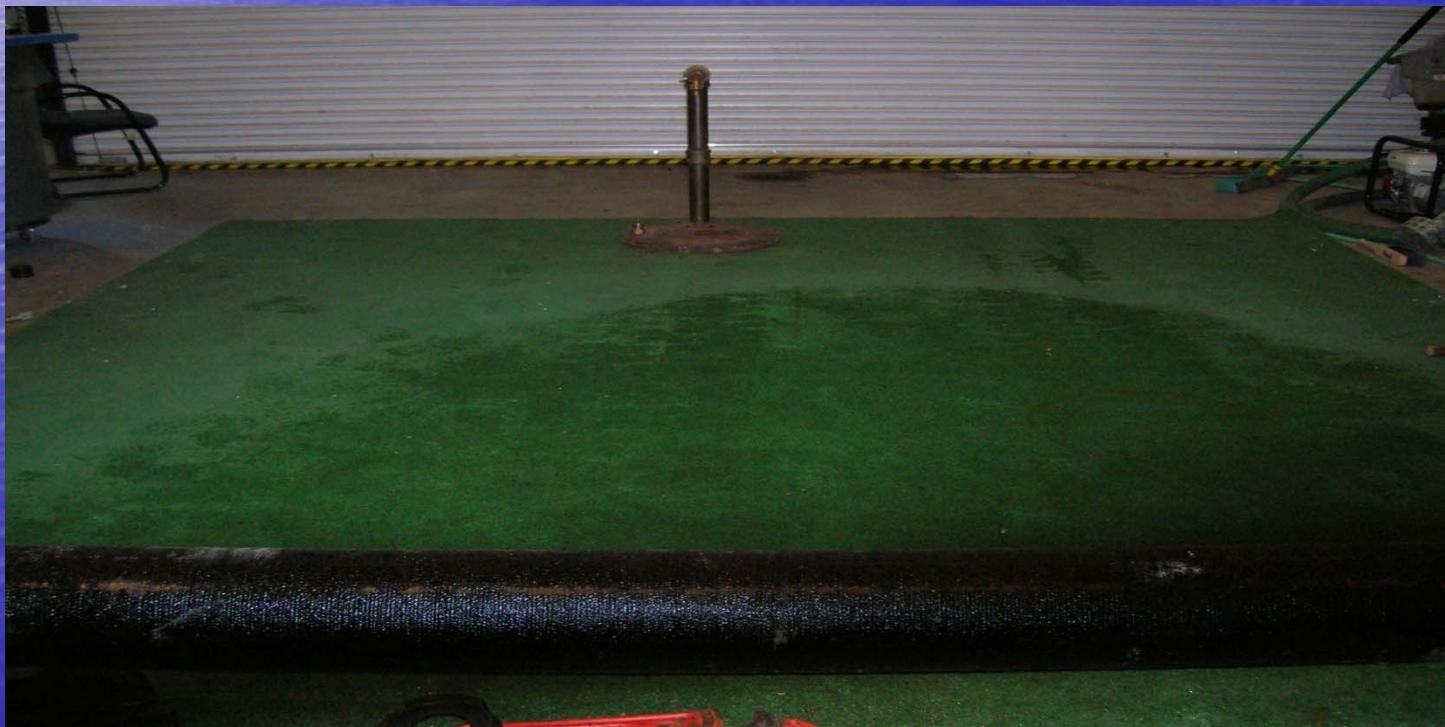


Corporation stop shall be tapped at a 45 degree angle.



GENERAL

- The pipe shall be securely fastened to support blocks at a height of 8 ½" from the bottom of the pipe to the ground.
- The meter yoke shall be approximately 10' from the pipe and nearly perpendicular.

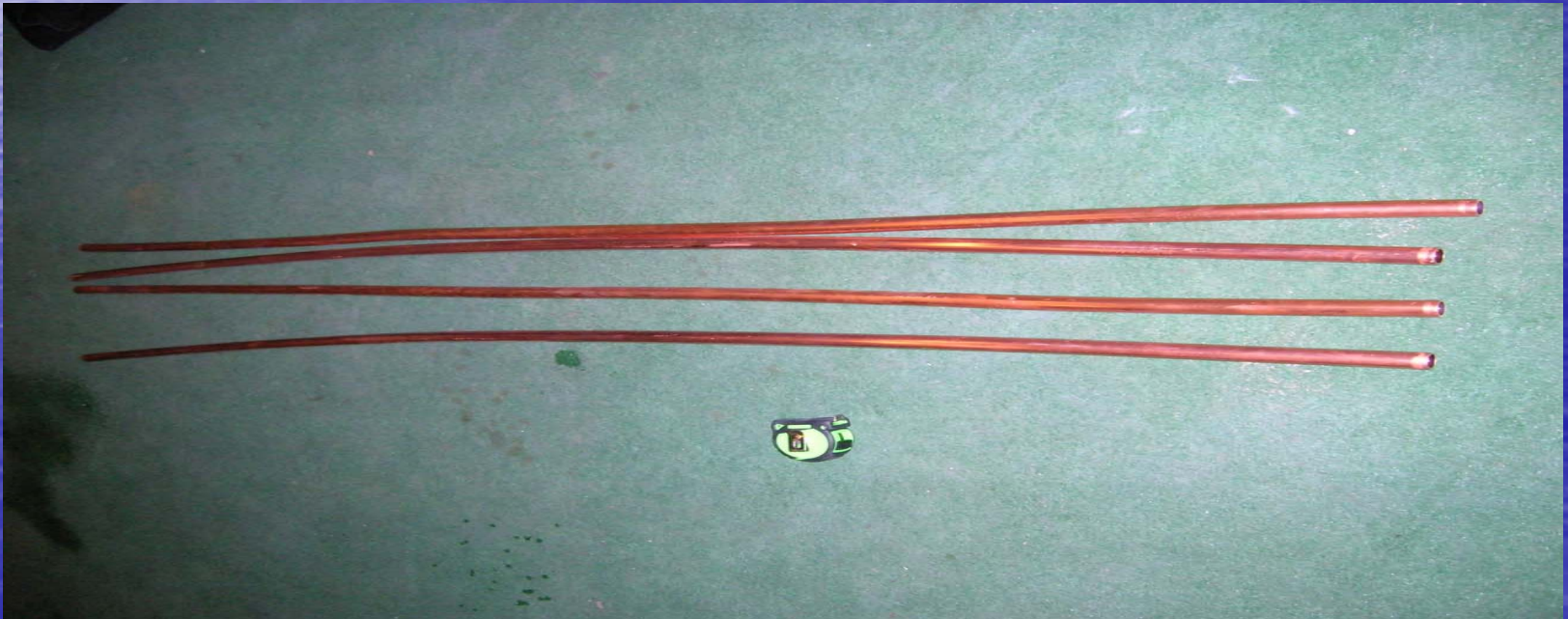


- A Curb stop shall be located midpoint between the meter yoke and the pipe.
At start the flare nuts are to be fully threaded, but not tight.



GENERAL

- 3/4" Copper tubing shall be used for the service line.
- Tubing shall be cut into 6' lengths with the ends crimped.
- 3/4" Type K Copper Tubing

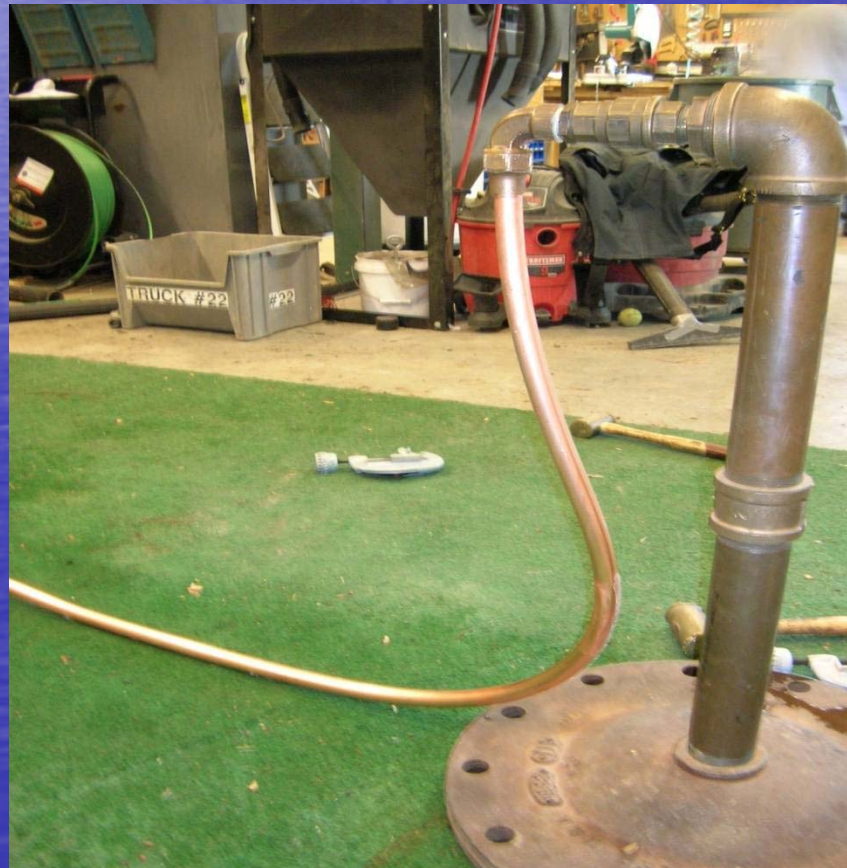


The curb stop position after installation shall be no more than 4" off the ground at no more than 10 degrees of vertical.



GENERAL

- All connections shall be flared and drip tight.
- The service line can not be crimped. A marble must be able to pass through the line.



The tapping team, tools, equipment & materials may be strategically place on the floor.



At the start of the tap, team worker may be standing or kneeling, but shall not be touching any piece of equipment or tool.



GENERAL

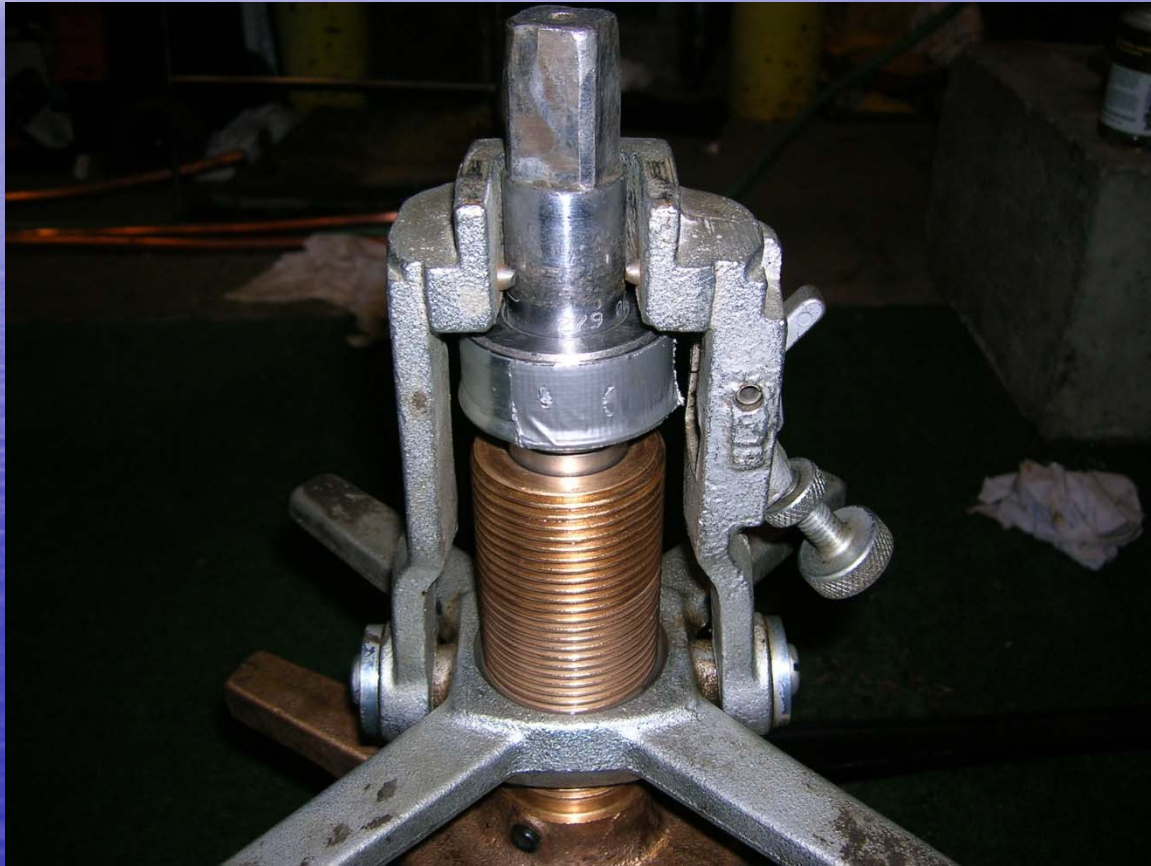
- The coach must be out of the way of the officials & may lead the team by instruction and encouragement, but is not allowed to physically assist the team in any way.
- The corporation stop may be placed in the adapter prior to start.



Saddles & rubbers for the tapping machine may be assembled & ready on the floor. Chain hooks may be in the yoke but the chain must not be in the hooks.



The tapping machine feed nut & yoke must be securely in place around the boring bar at all times.



GENERAL

- The corporation stop shall be securely inserted into the pipe with no more than 4 threads showing.
- Pine tar or grip enhancers may be applied to gloves.
- There is no such thing as equipment failure.
- There is no time penalty for broken equipment or drill bits. You are allowed only 2 runs.
- Timing for the event shall begin at the head officials signal & end when the corporation stop is turned on.

OFFICIATING

- There will be 3 officials, one will be designated as the "Head Official".
- The Head Officials ruling on any dispute will be final.
- The officials shall be responsible for timing the event.
- Official shall inspect all materials & tools are in accordance with the rules.

OFFICIATING

- Officials will insure team members are in proper positions prior to the start of the run.
- Officials shall assess appropriate penalty time for any and all safety violations.
- Officials shall assess each joint and determine the appropriate penalty for any leaks.

SAFETY

- Standard water utility safety practices shall be observed at all times during the contest.

SAFETY

- Safety equipment required for all participants shall be:
- Head protection for all members of the team. Must conform to ANSI Z89.1-1969. If a hard hat falls off all work must stop until it has been replaced.
- Gloves must be worn by all 3 workers. The coach is exempt.

SAFETY

- Eye protection is required to be worn by all team members and must conform to ANSI Z87.1-1968.
- Foot protection shall be worn by all team members and must conform to ANSI Z41.1-1967.
- Short sleeved shirts and long legged pant are required to be worn by the 3 workers.

SAFTEY

- During this contest, an ordinary task is preformed in an extraordinary manner. Therefore, safety is of the utmost importance. The yoke must be in place at all times and all tapping procedures must be followed as outlined. Failure to follow these procedures will result in up to a 30 second violation.

If this happens, it can be up to a 30 second violation.



EQUIPMENT

- Mueller B-101 tapping machine.
- Type K $\frac{3}{4}$ " Copper Tubing.
- Mueller H-14180 Meter Yoke, secured firmly to a stand.
- Mueller H-15460 $\frac{3}{4}$ " Female 90 degree end connector.

Mueller H-15000 Brass Corporation Stop.



Mueller H-1502 Curb Stop.
Mueller H-15430 Flaring nuts.



EQUIPMENT

- 4 – 14" Pipe wrenches, Reed RW-14 or Ridgid 3102



2 – 3 lbs. Brass Hammers, Mueller
H18025 or Reed HAM3, 3lb, 006088.



2 – Tubing Cutters, Reed T-20 or Ridgid 32930.



2 – Flaring Tools, Mueller H-18000 or Reed HF 3/4 or Ridgid41330.



EQUIPMENT

- 2- Crescent type wrenches, Reed CW12 or Ridgid 86917.



2 – Combined Drill & Tap Bits, Mueller
680539 or Reed DT 75, $\frac{3}{4}$ "-cc.

Only lubricating grease from the Mueller
Company, light machine oil in liquid or spray
or WD-40 shall be use for lubrication.
Mueller 88366 Cutting Grease.



PENALTIES

- Various penalties will be assessed by the Head Official or designee for any violations of the rules or a flagrant safety violation.
- The penalties will be predetermined number of seconds added to the time of the run to determine the total Official Time of the run.
- Teams without proper safety apparel will not be allowed to compete.

PENALTIES

- Penalties shall be in seconds:
- Leaking connection, barley oozing +4 each.
- Slow, obvious dripping, +6.
- Squirting, continuous leak, +8.
- Curb Stop to high or not vertical, +4 each.
- Crimp in service line, +10

PENALTIES

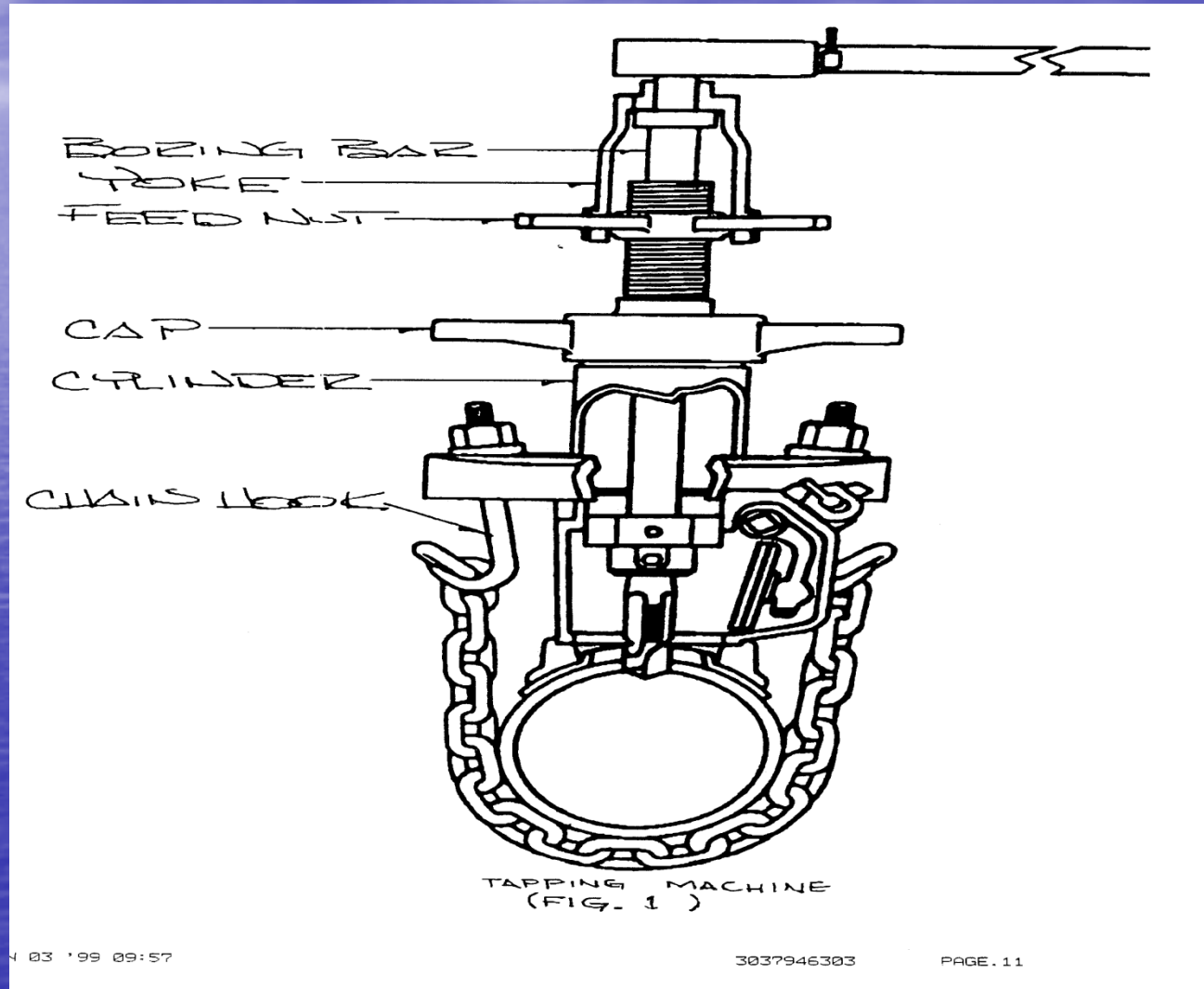
- Safety violation, +10 each.
- More than 4 threads showing on corp. +10.
- Procedural Violations, +10.
- Yoke Violations, up to +30.
- If the corp blows up or a connection blows apart, team disqualification for that run.

So, what does it cost to get started?

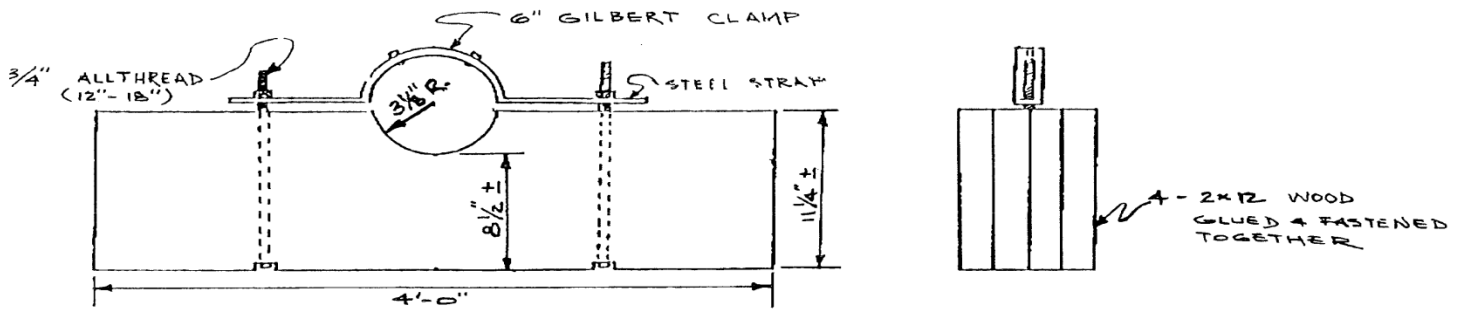
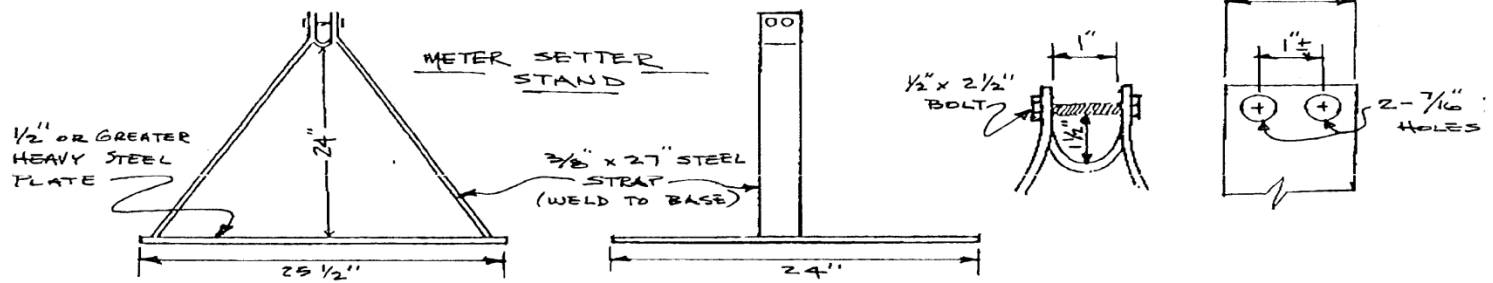
Tapping Team Supplies

• Mueller B 101 Tapping Machine	\$3500.00	3500.00
• Tapping Bit	\$ 150.00 ea	300.00
• 2 – 12” Crescent Wrenches	\$ 20.00 ea	40.00
• 4 – 14” Pipe Wrenches	\$30.00 ea	60.00
• 2 – Tubing Cutters	\$30.00 ea	60.00
• 2 - Flaring Tools	\$30.00 ea	60.00
• 2 – 3 lb Brass Hammers	\$60.00 ea	<u>120.00</u>
		\$4140.00

Information on the web site.



Build your own.



(NOT TO SCALE)
D.I.P. STAND (2-MIN. BEAD)
(FIG. 2)