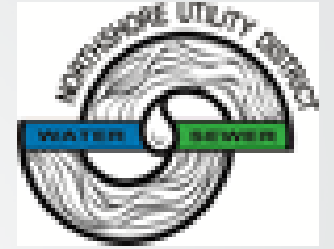


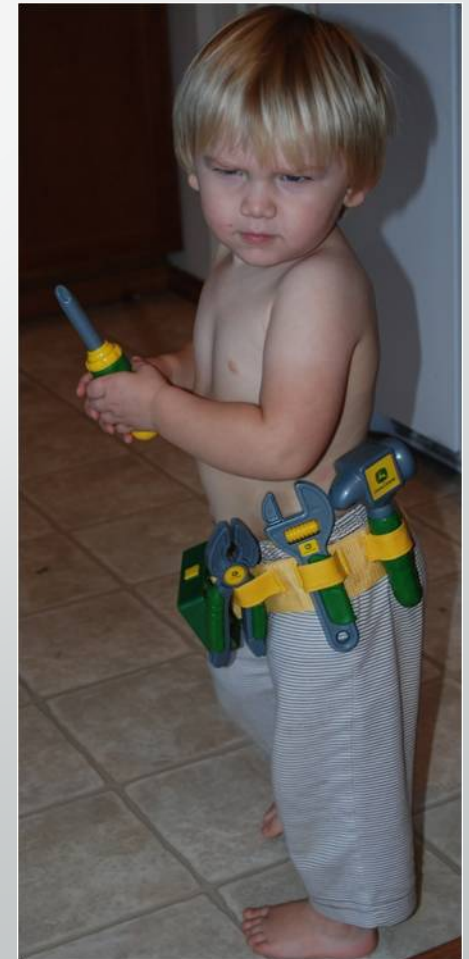
Large Diameter Wet Taps vs. The Cut and Section

Presented By
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A Little About Me



- Started as a pipe layer right out of high school
- Worked for Northshore Utility District for 8 years
- Currently Interim Public Work Director at the City Of Sultan
- I have a 4 year old son
- Assistant Coach for Tee Ball
- I raise animals and ride horses



Topics

- Definitions
- Parts
- Procedures
- Pro's and Con's

What Is A Wet Tap

A “wet tap” or “hot tap” is a method of connecting a new water line to an existing water line while the line is under pressure.

What Is A Cut and Section

A cut and section is a method of connecting a new water main line to an existing water main line while the main is shut down and the pressure has been relieved.

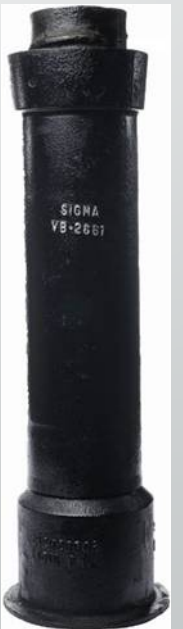
Parts For a Cut and Section

- 5-7 Mechanical joint kits
- 1 - Flange Gasket and Bolt Kit
- 1-2 Couplings
- 1 - MJ x FL TEE
- 1 - FL x MJ valve
- 1 - Valve box



Parts For a Wet Tap

- 1 - Tapping sleeve
- 1 - Mechanical joint kit
- 1 - Flange bolt kit
- 1 - L x MJ valve
- 1 - Valve box



Tools needed for a Cut Section

Pipe Saw

Wrench

Trash pump

Tape measure

Hammer

Level



Tools needed for a Wet Tap

Tapping Machine
Hydraulic or eclectic
power unit
Wrenches
Level
Air Compressor
Tap Measure





The Process for a Wet Tap

Find The Main



Clean The Pipe



This step is very important because if you get any debris in between the pipe and the band you will not get the proper seal you need.

Take a measurement of the outside diameter of the pipe



This is to make sure your band on the tapping tee is the proper size.

Installing the tapping tee and valve



Make sure the Test plug is accessible

The Air Test



Before tapping hook up a gauge and air test the sleeve to at least the main line pressure.

Set up the machine



TRAVEL CHARTS

Ductile Iron Pipe

Nominal Size	4	6	8	10	12	14	16	18	20	24
PIPE OD	4.80	6.90	9.05	11.10	13.20	15.30	17.40	19.50	21.60	25.80
PIPE ID. SIZE RANGE	Class 50 thru Class 56	4.04 thru 6.04	6.40 thru 8.04	8.51 thru 10.04	12.46 thru 12.10	14.45 thru 14.09	16.53 thru 16.17	18.61 thru 18.25	20.69 thru 20.33	24.85 thru 24.49
	***** TRAVEL DISTANCE *****									
(DISTANCE IS FROM WHERE CUTTER CONTACTING PIPE OD WALL - NOT THE PILOT)										
TAP SIZE 4 (actual size 3-1/2")	Class 50 thru Class 56	1-3/8" To 1-5/8"	7/8" To 1-1/8"	3/4" To 1"	5/8" To 7/8"	5/8" To 7/8"	5/8" To 7/8"	5/8" To 7/8"	5/8" To 7/8"	5/8" To 7/8"
TAP SIZE 6 (actual size 5-1/2")	Class 50 thru Class 56	2" To 2-3/8"	1-3/8" To 1-5/8"	1-1/8" To 1-3/8"	1" To 1-1/4"	1" To 1-1/4"	7/8" To 1-1/8"	7/8" To 1-1/8"	7/8" To 1"	3/4" To 1"
TAP SIZE 8 (actual size 7-1/2")	Class 50 thru Class 56	2-5/8" To 3-1/8"	2" To 2-1/4"	1-5/8" To 1-7/8"	1-1/2" To 1-3/4"	1-3/8" To 1-5/8"	1-1/4" To 1-1/2"	1-1/4" To 1-3/8"	1-1/8" To 1-3/8"	1" To 1-1/4"
TAP SIZE 10 (actual size 9-1/2")	Class 50 thru Class 56	3-3/8" To 4"	2-5/8" To 2-7/8"	2-1/4" To 2-1/2"	2" To 2-1/4"	1-3/4" To 2"	1-3/4" To 2"	1-3/4" To 2"	1-5/8" To 1-7/8"	1-3/8" To 1-5/8"
TAP SIZE 12 (actual size 11-1/2")	Class 50 thru Class 56	4-1/8" To 4-3/4"	3-1/4" To 3-5/8"	3-1/4" To 3-5/8"	2-3/4" To 3"	2-3/4" To 3"	2-1/2" To 2-3/4"	2-1/2" To 2-3/4"	2-1/4" To 2-1/2"	1-7/8" To 2-1/8"
TAP SIZE 14 (actual size 13-1/2")	Class 50 thru Class 56	5" To 5-5/8"	4-1/4" To 4-1/4"	4-1/4" To 4-1/4"	3-3/8" To 3-5/8"	3-3/8" To 3-5/8"	3" To 3-1/4"	3" To 3-1/4"	3" To 3-1/4"	2-1/8" To 2-3/4"
TAP SIZE 16 (actual size 15-1/2")	Class 50 thru Class 56	5-3/4" To 6-3/8"	4-1/8" To 4-1/4"	4-1/8" To 4-1/4"	3-3/8" To 3-5/8"	3-3/8" To 3-5/8"	3" To 3-1/4"	3" To 3-1/4"	4" To 4-1/4"	3-1/8" To 3-1/2"
TAP SIZE 18 (actual size 17-1/2")	Class 50 thru Class 56	6-1/2" To 7-1/4"	5-1/4" To 5-5/8"	5-1/4" To 5-5/8"	4-1/4" To 4-1/4"	4-1/4" To 4-1/4"	4" To 4-1/4"	4" To 4-1/4"	5-1/4" To 5-5/8"	4" To 4-3/8"
TAP SIZE 20 (actual size 19-1/2")	Class 50 thru Class 56	7-1/4" To 8"	6-1/2" To 7-1/4"	6-1/2" To 7-1/4"	5-1/4" To 5-5/8"	5-1/4" To 5-5/8"	5-1/4" To 5-5/8"	5-1/4" To 5-5/8"	6-1/2" To 7-1/4"	5-1/8" To 5-1/2"
TAP SIZE 24 (actual size 22-1/2")	Class 50 thru Class 56	8-1/8" To 8-1/8"	7-1/2" To 7-1/2"	7-1/2" To 7-1/2"	6-1/2" To 6-1/2"	6-1/2" To 6-1/2"	6-1/2" To 6-1/2"	6-1/2" To 6-1/2"	7-1/2" To 7-1/2"	7-1/2" To 7-1/2"

Use the tapping depth guide chart to determine how far to allow your bit to go and set the stop ring.

The Tap



Don't be in a rush! You only go half a turn on the star for every three rotations of the bit. Continue until you hit the stop nut. Then back the bit all the way out while it is still rotating.

Close the valve and remove the machine




Retrieve the coupon



The coupon is the portion of the main that is cut out and will be on the pilot bit. This must be retrieved.

Install thrust blocking and backfill





The Process of a cut and section

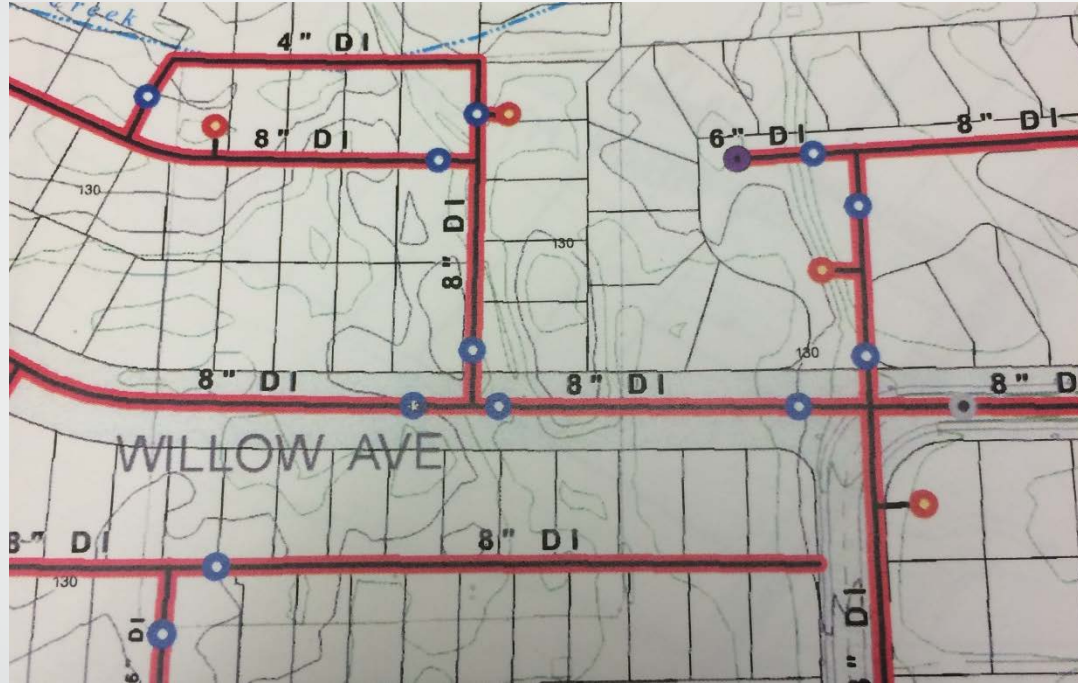
Find the Main



Bolt the tee together



Shut down and drain



You must turn off all the meters and main line valves on the portion of water main you are working on. Drain as much water out as possible before you cut into the main line.

Cut a section of the pipe out



The Length of pipe may vary depending on the situation

Install the Tee and couplers



Flush and pressurize the main



Any time pressure is taken off the main, flush the main for water quality

Install thrust blocking and backfill



Pro's and Con's



Wet Tap

Pro's

- No Impact to the customers
- No water loss due to flushing
- Less parts
- Less time consuming

Con's

- Requires a special tool
- When your using a wet tap to replace a under sized hydrant run you must have the room to move the hydrant from its current location

Cut and section

Pro's

No Special tools needed
When your doing a cut and section to replace an under sized hydrant run you can have the hydrant in its current location

Con's

Bigger impact to the customer because of shut down
More parts
More time consuming
Waste water due to flushing

That's All Folks

