

Water Main Construction Checklist

Revised: May 2007

1. Water main:

- Should design profile be modified based on actual depth
- Select bore diameter and minimize size
- Bore pit sufficient dimension to accommodate entry of pipe
- Bore depth logged by contractor at 25' intervals
- DI pipe poly wrapped per AWWA standards
- Inspect poly wrap for defects
- Back fill materials and methods performed to protect poly wrap
- Tracer wire testing and termination
- Verify how disinfection will be completed relative to construction sequence and where temporary hydrants, valves or blow offs may be required

2. Fittings:

- Fittings double wrapped at least 1' past glands
- Fittings fully encased with poly and tapped
- Fittings of the type approved for use by City. Use of uncommon fittings reported to LWS for approval or removal.
- Retainer glands shall be new and appropriate for the pipe materials being used
- Field modifications that require use of retainer glands
- All poured blocking shall be formed with no concrete underneath or over the fitting
- Where undisturbed soil is present, fitting shall be dry blocked against undisturbed soil
- Pipe marked and inserted to home
- Gaskets properly seated
- Fittings properly tightened
- All blocking shall be made against undisturbed soil
- Properly cleaned and disinfected prior to installation

3. Hydrants:

- Consult with Contractor regarding any necessary hydrant configuration or location changes based on field conditions
- Consult with Contractor regarding use of proper shoe configuration
- Check for proper hydrant shoe orientation BEFORE installation. Right or left facing
- Insure all fittings are restrained per LSP
- Hydrants to be plumb vertical
- Hydrants set to grade per LSP. Flange 3" above grade
- Drain materials shall be pea gravel only. No limestone materials around hydrant
- Drain material placed / formed to 6" above drain hole to below shoe

- Dry blocking only for hydrant shoe. No cementatous or limestone materials around hydrants

4. Valves:

- Valves purchased from LWS. Show proof of receipt
- Valves properly handled and storage on site to prevent damage. Valves should not be dropped or dump from loaders
- Valves inspected for damage. Damaged valves rejected
- 12" inch pipe properly beveled when using butter fly valves
- Check for proper tightening of bolts
- Check butterfly valves for proper opening and closure after installation
- Poly wrap 1' past joint and up to operating nut with all ends properly taped
- Select backfill and pneumatic tamping around valve box
- Check centering of valve box after backfill
- Require contractor to maintain markers on valves to avoid being covered during sub grade and paving work

5. Loops:

- Evaluate vertical extent of water and conflicting utility prior to shutdown
- Have contractor provide a sketch of loop with dimensions and fittings
- Have contractor submit a shutdown plan
- Excavate prior to shutdown
- Have adequate pumping equipment available
- Use rock base in excavation to aid in footing and fabricating
- Fabricate loop above ground to the extent possible

6. Shut Downs:

- Refer to GPP for specific procedures (NOT Available as of January 22, 2007?)
- Have sufficient staff available. Minimum of a three person crew for 6"-12". Additional staff for larger mains
- A certified site superintendent must be present
- Pumps sufficient to quickly dewater residual water and to pump leakage past valves
- Backhoe, loaders and lifting equipment all present and functional
- Lighting for night operations
- Dual purpose sleeves, retainer glands, fittings, poly wrap to complete job
- Work performed in advance of shut down:
 - Complete excavation to pipe. See drawing for dimensions
 - Preassembly of fittings above ground when efficient
 - Crushed rock in excavation to provide footing and limit contamination
 - Verify notification of customers has been completed
- Work performed after shut down:
 - Cut pipe on bottom and sides in manner to dewater pipe quickly and to avoid water spray
 - Use cut out section for measurement when possible

- Use filler rings to fill gap and prevent movement in pipe
- Disinfect fittings and pipe with chlorine solution
- Work shall continue uninterrupted until placed in service

7. Water Services

- Refer to GPP for specific procedures when looping
- Inventory water service prior to job start. Contact Bill Fish to assist
- Identify critical customers, alert Contractor and plan accordingly to accommodate customer to the extent possible
- Licensed plumber to perform work
- New service properly flushed to next outlet on customer service line

8. Testing and Disinfection

- Check special provisions to determine if contractor performs disinfection
Normally on water mains 24" and larger
- If Contractor is required to perform disinfection then they must submit flushing, disinfection and dechlorination plan as shop drawing
- Refer to AWWA C651 and LWS for specific requirements

9. Tapping Sleeve and Valves

- Contractor to excavation at least 6' out from main in direction of service line to accommodate tapping equipment
- Tap at least 18" from pipe joint
- Tap at least 3' from other taps