

MATERIALS:

I. MAINLINE PIPE:

- A. DUCTILE IRON PIPE, CLASS 52
 - 1. A.W.W.A. STANDARDS NO. C115, C150 AND C151
- B. CEMENT MORTAR LINING
 - 1. A.W.W.A. STANDARD NO. C104



II. MAINLINE FITTINGS:

- A. DUCTILE IRON COMPACT FITTINGS
 - 1. A.W.W.A. STANDARD NO. C153
- B. DUCTILE IRON, CLASS 250
 - 1. A.W.W.A. STANDARD NO. C110
- C. CEMENT MORTAR LINING
 - 1. A.W.W.A. STANDARD NO. C104



III. MAINLINE PIPE AND FITTING JOINTS:

- A. RUBBER GASKET PUSH ON JOINTS (B.J.)
 - 1. A.W.W.A. STANDARD NO. C111
 - 2. "TYTON" BY CLOW CORPORATION OR
 - 3. "TYTON" U.S. PIPE AND FOUNDRY CO. OR EQUAL
 - 4. EXCEPT AS SHOWN ON STANDARD PLANS
- B. MECHANICAL JOINT (M.J.)
 - 1. A.W.W.A. STANDARD C111
 - 2. MAY BE SUBSTITUTED WITH APPROVAL OF THE PWS WATER ENGINEER
 - 3. AND AS SHOWN ON STANDARD PLANS
 - 4. STEEL NUTS AND BOLTS
 - a. HIGH STRENGTH
 - b. LOW ALLOY
- C. FLANGED JOINTS (F.J.)
 - 1. A.W.W.A. STANDARD C111 & C115
 - 2. WHERE SHOWN ON STANDARD PLANS
 - 3. FLAT FACED



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4. 125 POUND AMERICAN STANDARD DIMENSIONS
 - a. 175 P.S.I. OR LESS WATER WORKING PRESSURE
5. 150 POUND AMERICAN STANDARD DIMENSIONS
 - a. WATER WORKING PRESSURE GREATER THAN 175 P.S.I.
6. BOLTS USED WITH FLANGES SHALL EXTEND TO BE FLUSH WITH NUTS OR HAVE 2 TO 3 THREADS EXPOSED

- D. RESTRAINED JOINTS (R.J.)
1. A.W.W.A. STANDARDS NO. C111
 2. WHEN APPROVED BY PWS WATER ENGINEER
 3. EXCEPT AS SHOWN ON STANDARD PLANS
 4. "TR-FLEX" BY U.S. PIPE AND FOUNDRY OR
 5. "SUPER-LOCK BY CLOW CORPORATION OR EQUAL
 6. GRIP RING TYPE ROMAC

I. SERVICE LATERALS: 4" MINIMUM AND LARGER:

- A. PIPE
 1. PER SECTION I OF THIS STANDARD
- B. FITTINGS
 1. PER SECTION II OF THIS STANDARD
- C. JOINTS
 1. PER SECTION III OF THIS STANDARD

II. SERVICE LATERALS: 1" AND 2":

- A. COPPER TUBING
 1. SEAMLESS WATER TUBE, TYPE K (SOFT)
 2. A.W.W.A. STANDARD NO. C800
- B. BRAZED JOINTS
 1. USE ONLY 15% SILVER BRAZING FILLER METAL (SOLDER), EITHER STAY-SILV 15 OR APPROVED EQUAL.
 2. USE OXYACETYLENE GAS FOR BRAZING TO ACHIEVE BRAZING TEMPERATURE OF 1480 DEG. F OR GREATER.

III. COUPLINGS AND REPAIR SLEEVES: 3" AND LARGER:

- A. STEEL OR STAINLESS STEEL
 1. BY SMITH-BLAIR
 2. BY ROMAC
 3. BY FORD OR EQUAL

IV. COUPLINGS: 1" OR 2":

- A. CAST BRONZE OR FORGED BRASS
 1. A.W.W.A. STANDARD NO. C800
 2. CONTAINING 85 PERCENT COPPER
 3. BY THE FORD METER BOX CO. OR
 4. BY JAMES JONES CO. OR
 5. BY MUELLER CO. OR EQUAL



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V. SERVICE LATERALS: 1" AND 2":

A. COPPER TUBING

1. SEAMLESS WATER TUBE, TYPE K (SOFT)
2. A.W.W.A. STANDARD NO. C800

VIII: NUTS AND BOLTS:

A. TYPE 326 STAINLESS STEEL

1. EXCEPT ON MECHANICAL JOINTS

B. PROTECTIVE COATING (BURIED NUTS AND BOLTS)

1. 20 MILS DRY FILM THICKNESS
 - a. BY 3M CORPORATION "EC-244" OR
 - b. BY KOPPERS, INC "BITUMASTIC 50" OR EQUAL

IX. VALVES:

A. GATE VALVE

1. A.W.W.A. STANDARD NO. C515
2. RESILIENT SEATED, N.R.S.
3. 200 P.S.I. MINIMUM WORKING PRESSURE
4. TYPE 316 STAINLESS STEEL BODY BOLTS
5. TWO INCH (2") SQUARE OPERATING NUT
6. COUNTERCLOCKWISE OPENING
7. HANDWHEEL WHERE SHOWN ON STANDARD PLANS
8. MECHANICAL JOINT PER SECTION III, B
9. FLANGED JOINT PER SECTION III, C
 - a. ONLY WHERE SHOWN ON STANDARD PLANS
10. MECHANICAL JOINT X FLANGE
 - a. CLOW
 - b. AMERICAN FLOW CONTROL - AFC 2500
 - c. KENNEDY--RWGV-93
11. MECHANICAL JOINT BOTH ENDS
 - a. CLOW
 - b. AMERICAN FLOW CONTROL - AFC 2500
 - c. KENNEDY--RWGV-93
12. MANUFACTURERS STANDARD FUSION BONDED EPOXY INTERIOR AND EXTERIOR, 8 MIL MINIMUM THICKNESS.

B. MINOR VALVES (2" AND SMALLER SIZE)

1. A.W.W.A. STANDARD NO. C800
2. CAST BRONZE OR FORGED BRASS
 - a. BY FORD METER BOX CO. OR
 - b. BY JAMES JONES CO. OR EQUAL



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C. BUTTERFLY VALVES

1. AWWA STD. C504
2. RUBBER SEATED
3. MANUFACTURER EPOXY COATED
4. END CONNECTION MJ, MJ/FLG
5. H.J. PRATT, MUELLER OR APPROVE EQUAL



X. TAPPING SLEEVES:

A. SPLIT SLEEVE

B. MECHANICAL JOINT BY FLANGED SPUR

C. STEEL NUTS AND BOLTS

1. HIGH STRENGTH
2. LOW ALLOY

D. 200 P.S.I. MINIMUM WORKING PRESSURE

E. MANUFACTURED BY:

1. SMITH-BLAIR OR ROMAC
2. FORD OR EQUAL

XI. METERS:

A. DEVELOPER PROJECTS

1. CONTRACT SHALL FURNISH AND INSTALL ALL WATER METERS AND WATER METER BOXES.

B. CITY PROJECTS

1. FURNISHING OF ALL METERS AND WATER METER BOXES SHALL BE DEFINED IN THE PROJECT DRAWING AND SPECIFICATION. ASSOCIATED COST SHALL BE DEFINED IN THE BID SCHEDULE OF CONTRACT DOCUMENT.



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INSTALLATION:

I. PIPE, VALVES, FITTINGS, AND APPURTENANCES:

- A. CITY OF ARCADIA STANDARD PLANS
- B. CITY OF ARCADIA SPECIFICATIONS
- C. A.W.W.A. STANDARD NO. C600

II. HOT-TAP EXISTING MAIN:

- A. SPUR ONE SIZE SMALLER THAN EXISTING MAIN
- B. TAPPING SLEEVE PER MATERIALS SECTION X, OF THIS STANDARD
- C. VALVE PER MATERIALS SECTION IX, PART A OF THIS STANDARD

III. DRY-TAP OF EXISTING MAIN:

- A. ONLY WITH PRIOR APPROVAL OF PWS WATER ENGINEER
- B. TIME SCHEDULED BY CITY OF ARCADIA, PUBLIC WORKS SERVICES DEPARTMENT, WATER SECTION.
- C. TWO (2) OUNCES OF GRANULAR CALCIUM HYPOCHLORITE IN EXISTING MAIN AT ALL CUT POINTS
- D. NEW FITTINGS SWABBED INTERNALLY WITH CHLORINE SOLUTION
- E. CONNECT TO EXISTING MAIN
 - 1. AFTER NEW MAIN IS INSTALLED
 - 2. AFTER NEW MAIN IS PRESSURE TESTED
 - 3. AFTER NEW MAIN HAS BEEN DISINFECTED AND TEST RESULTS APPROVED

IV. PRESSURE TESTING:

- A. MAINLINE AND HYDRANT LATERALS
 - 1. TESTED AT 225 P.S.I.
 - 2. HOLD TEST PRESSURE FOR FOUR (4) HOURS
 - 3. ALLOWABLE LEAKAGE PER A.W.W.A. STANDARD NO. C600

V. DISINFECTION OF PIPING:

- A. SAMPLING TAPS (WHEN SPECIFIED OR REQUIRED FOR TESTING)
 - 1. TWO (2) INCH SAMPLING TAPS
 - a. TWO (2) INCH BRONZE STRAP SERVICE SADDLE AND SCREW PLUG



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2. LOCATED TWO (2) FEET FROM EACH VALVE
 - a. FOR AIR-RELEASE
 - b. FOR MAINLINE FLUSHING
 - c. FOR WATER SAMPLING
3. LEFT IN PLACE UNTIL APPROVAL OF WORK
4. PIPELINE COMPLETELY FLUSHED PRIOR TO CHLORINATION

B. CHLORINATION

1. PER A.W.W.A. STANDARD C. 651, SECTION 5.2 CONTINUOUS FEED METHOD USING CHLORINE GAS
2. FOR SHORT REACHES OF PIPE WHERE SWABING OR GAS CHLORINATION IS NOT PRACTICAL, CONTRACTOR CAN USE CHLORINE TABLETS ATTACHED TO THE TOP INSIDE OF THE PIPE USING ONLY PERMATEX NO. 2 GASKET COMPOUND

C. BACTERIOLOGICAL TESTING

1. CITY TO TAKE 2 SAMPLES OF WATER IN ACCORDANCE WITH CALIFORNIA DEPARTMENT OF HEALTH SERVICES REQUIREMENTS
2. BEFORE PIPELINE IS PUT IN SERVICE
3. REPEAT ALL PROCESSES IF TESTING FAILS OR ANY REPAIR WORK TO PIPELINE BECOMES NECESSARY DURING DISINFECTION PROCESS



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GENERAL NOTES (WATER):

1. ALL WORK DETAILED ON THE CONSTRUCTION DRAWINGS EXCEPT AS OTHERWISE STATED IN THE SPECIAL PROVISIONS OF THE CONTRACT, SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF ARCADIA STANDARD PLANS AND STANDARDS SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION AND AMERICAN WATER WORKS ASSOCIATION STANDARDS (LATEST EDITION AND SUPPLEMENTS).
2. ALL STATIONS AND DIMENSIONS ARE ALONG THE CENTERLINE OF PIPELINE UNLESS OTHERWISE SPECIFIED.
3. EXISTING UNDERGROUND UTILITIES ARE SHOWN AS PER AVAILABLE RECORDS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION AND ELEVATION, IF REQUIRED, IN THE FIELD PRIOR TO BEGINNING CONSTRUCTION OF THE FACILITIES.
4. ALL P.C.C. AND A.C. REMOVALS SHALL BE OUTLINED TO NECESSARY WORKING LIMITS AND SAWCUT TO MINIMUM DEPTH OF 2 INCHES PRIOR TO THE REMOVAL. UNLESS OTHERWISE STATED IN THE SPECIAL PROVISIONS, ALL DEBRIS CREATED BY THE REMOVAL OPERATIONS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF AWAY FROM THE JOB SITE IN A MANNER AND AT LOCATION ACCEPTABLE TO ALL AGENCIES AFFECTED BY THE WORK.
5. TRAFFIC CONTROL DURING CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE WORK AREA TRAFFIC CONTROL HANDBOOK (WATCH MANUAL), LATEST EDITION, AND ARE SUBJECT TO THE APPROVAL OF THE CITY.
6. IN ALL OPERATIONS, THE REQUIREMENTS OF THE STATE DIVISION OF INDUSTRIAL SAFETY FOR TRENCHES, EXCAVATIONS AND SHORING SHALL APPLY. SAFETY IS STRESSED. ANY OPERATION OR SITUATION THAT THREATENS THE SAFETY OF WORKERS OR THE PUBLIC, INCLUDING IMPROPER TRAFFIC CONTROL, SHALL CAUSE SUSPENSION OF WORK UNTIL CORRECTIONS ARE MADE.
7. ALL OPEN TRENCH EXCAVATIONS WITHIN A STREET SHALL BE BACKFILLED AND TEMPORARY ASPHALTED DAILY UNLESS APPROVED OTHERWISE, EXCEPT WHEN THE CONTRACTOR IS PHYSICALLY WORKING WITHIN THE AREA AND HAS PLACED BARRICADES OR FENCING TO THE SATISFACTION OF THE PUBLIC WORKS SERVICES DIRECTOR.
8. THE CONTRACTOR SHALL CONDUCT CONSTRUCTION OPERATIONS IN SUCH A MANNER THAT STORM OR OTHER WATERS MAY PROCEED UNINTERRUPTED AND WITHOUT EROSION ALONG THEIR EXISTING STREET OR DRAINAGE COURSES.
9. IN THE COURSE OF RUNOFF WATER CONTROL, THE CONTRACTOR SHALL PROTECT ALL WATER COURSES, THE GROUNDWATER AND BODIES OF WATER FROM POLLUTION BY FUELS, OILS, BITUMENS OR OTHER HARMFUL MATERIALS.
10. HARD HATS AND HIGH VISIBILITY ORANGE VESTS SHALL BE WORN AT ALL TIMES WHEN WORKING ON THIS PROJECT.



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11. EXACT LOCATION, ELEVATION AND CONFIGURATON OF CONNECTIONS TO EXISTING WATER PIPELINES SHALL BE DETERMINED BY THE CONTRACTOR AT THE TIME OF CONSTRUCTION.
12. ALL NEW WATER PIPE SHALL BE INSTALLED WITH A 42 INCH MINIMUM COVER, UNLESS APPROVED OTHERWISE BY THE PWS DIRECTOR.
13. A CITY P.W. INSPECTOR OR DESIGNEE MUST BE PRESENT FOR ALL STAGES OF HOT TAPPING, PRESSURE TESTING AND DISINFECTION.
14. THE CONTRACTOR SHALL NOT INSTALL THE WATER MAIN SUCH THAT AN INTERMEDIATE HIGH POINT RESULTS UNLESS APPROVED BY THE ENGINEER.
15. AS-BUILT LOCATIONS OF THE WATER MAIN SHALL BE RECORDED BY THE CONTRACTOR AND FILED WITH CITY PRIOR TO ACCEPTANCE OF THE PROJECT.
16. WHEN ABANDONING AN EXISTING FIRE HYDRANT ASSEMBLY, CLOSE VALVE, REMOVE VALVE BOX, PLUG LATERAL END (THRUST BLOCK IF REQUIRED) FILL REMAINING VALVE RISER HOLE WITH ¾ SACK SLURRY MIX TO TOP OF SUBGRADE AND RETURN FIRE HYDRANT AND BURY TO THE CITY YARD. SEE CITY OF ARCADIA STANDARD PLAN NO. 706.
17. THE CONTRACTOR SHALL PROVIDE AND INSTALL NEW SERVICE LINES IN ACCORDANCE WITH THE WATER SERVICE SCHEDULES AND CONNECT AS CUSTOMER'S LINES REQUIRED (REFER TO APPROPRIATE CITY OF ARCADIA STANDARD PLAN). NEW SERVICE LINES SHALL BE INSTALLED WITHIN 2 FEET OF EXISTING SERVICE LINES UNLESS OTHERWISE SPECIFIED. ALL NEW SERVICE LINE LOCATIONS TO BE VERIFIED BY CITY WATER FORCES. ABANDON EXISTING SERVICE LATERALS PER CITY OF ARCADIA STANDARD PLAN NO. 704.
18. BEFORE STARTING WORK, THE CONTRACTOR SHALL OBTAIN A PERMIT FROM THE CITY OF ARCADIA, PUBLIC WORKS SERVICES DEPARTMENT.
19. ALL THRUST AND ANCHOR BLOCKS MUST BE INSPECTED AND APPROVED PRIOR TO PLACING CONCRETE AND PRIOR TO BACKFILL.
20. **ALL EXISTING VALVES AND FIRE HYDRANTS SHALL BE OPERATED BY CITY OF ARCADIA, PUBLIC WORKS SERVICES DEPARTMENT, WATER SECTION PERSONNEL EXCLUSIVELY.**
21. ALL NEW AND EXISTING FIRE HYDRANTS OF THE PROJECT THAT ARE NOT IN SERVICE, SHALL BE COVERED WITH A SACK INDICATING "NOT-IN-SERVICE" UNTIL ENTIRE PROJECT HAS BEEN ACCEPTED FOR SERVICE.
22. FAILUE TO COMPLY WITH ANY OF THE ABOVE ITEMS SHALL BE SUFFICIENT CAUSE FOR THE CITY TO ARRANGE FOR THE NECESSARY WORK TO BE PERFORMED BY OTHERS. ANY COSTS INCURRED TO COMPLETE THE NECESSARY WORK WILL BE CHARGED TO THE CONTRACTOR.
23. CONCRETE THRUST BLOCKS EXIST AT ALL TEES, BENDS, CROSSES, AND OTHER WATER MAIN FITTINGS. THE CONTRACTOR SHALL WORK WITH CAUTION WHEN EXCAVATING IN THE VICINITY OF ANY THRUST BLOCK. THE CONTRACTOR SHALL NOT DISTURB EXISTING THRUSTS BLOCKS.



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