

## SW METRO WATER GENERAL NOTES

### GENERAL NOTES ON WATER PLANS

- ALL WATER LINES, SYSTEM PLANS AND CONSTRUCTION SHALL CONFORM TO THE SOUTHWEST METROPOLITAN WATER AND SANITATION DISTRICT (THE DISTRICT) WATER SYSTEMS SPECIFICATIONS AND SHALL BE SUBJECT TO CONSTRUCTION OBSERVATION BY DISTRICT PERSONNEL OR REPRESENTATIVES. COPIES OF THE DISTRICT STANDARDS AND SPECIFICATIONS MAY BE OBTAINED FROM THE DISTRICT WEBSITE. THE OWNER, HIS ENGINEER OR CONTRACTOR, SHALL SCHEDULE A PRECONSTRUCTION MEETING WITH THE DISTRICT PROJECT COORDINATOR AT LEAST 48 HOURS PRIOR TO THE START OF CONSTRUCTION. PLANS WITH THE DISTRICT APPROVAL STAMP WILL BE DISTRIBUTED AT THE PRECONSTRUCTION MEETING. NO CONSTRUCTION WILL BE PERMITTED UNTIL FORMAL COMPLETION OF EASEMENTS AND RECORDING, AND PRIOR TO THE PRECONSTRUCTION MEETING.
- UNDERGROUND UTILITIES IN THE AREA OF CONSTRUCTION HAVE BEEN LOCATED FROM FIELD INVESTIGATION AND THE BEST AVAILABLE UTILITY RECORDS AND ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UTILITY LINES WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL COORDINATE HIS ACTIVITIES WITH THE AFFECTED UTILITY COMPANIES AND SHALL NOTIFY COLORADO 811, PHONE NUMBER 800-922-1987 OR 811, WEB ACCESS AT C0811 WEB TICKET ENTRY AT LEAST 48 HOURS PRIOR TO STARTING CONSTRUCTION.
- PIPE LENGTHS SHOWN ON PLANS FOR WATER LINES ARE THE HORIZONTAL DISTANCE BETWEEN CENTER OF FITTING TO CENTER OF VALVE, METER, ETC. THEREFORE, DISTANCES SHOWN ON THE PLANS ARE APPROXIMATE AND COULD VARY DUE TO VERTICAL ALIGNMENT AND FITTING DIMENSIONS.
- CONTRACTOR SHALL HAVE IN HIS POSSESSION AT ALL TIMES ONE (1) SIGNED COPY OF PLANS APPROVED BY THE DISTRICT AND DENVER WATER.
- RECORD DRAWINGS AS REQUIRED IN THE SPECIFICATIONS ARE TO BE SUBMITTED BY THE OWNER OR REPRESENTATIVE PRIOR TO PROBATIONARY ACCEPTANCE OF THE CONSTRUCTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND REPLACING ANY EXISTING SIGNS, STRUCTURES, FENCES, ETC., ENCOUNTERED ON THE JOB AND RESTORING THEM TO THEIR ORIGINAL CONDITION.
- THE CONTRACTOR IS RESPONSIBLE FOR:
  - NOTIFYING THE DISTRICT 48 HOURS IN ADVANCE OF ANY NEED TO SHUT DOWN ANY PORTION OF THE EXISTING WATER SYSTEM.
  - NOTIFYING THE DISTRICT 48 HOURS IN ADVANCE FOR OBSERVATIONS.
  - IN CASE OF AN EMERGENCY AFTER WORKING HOURS CALL THE DISTRICT OFFICE AT 303-979-2333 FOR RECORDED INSTRUCTIONS.

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## SW METRO WATER GENERAL NOTES (CONT.)

- THE DISTRICT AND/OR DISTRICT ENGINEER EXERCISES NO CONTROL OF THE SAFETY OR ADEQUACY OF THE EQUIPMENT, BUILDING COMPONENTS, SCAFFOLDING, FORMS OR ANY OTHER WORK AIDS USED IN OR ABOUT THE PROJECT, OR IN THE SUPERINTENDING OF THE SAME.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ANY GROUNDWATER ENCOUNTERED DURING THE CONSTRUCTION OF ANY PORTION OF THIS PROJECT. GROUNDWATER SHALL BE PUMPED, PIPED, REMOVED AND DISPOSED OF IN A MANNER WHICH DOES NOT CAUSE FLOODING OF EXISTING STREETS NOR EROSION ON ABUTTING PROPERTIES IN ORDER TO CONSTRUCT THE IMPROVEMENTS SHOWN ON THESE PLANS. NO CONCRETE SHALL BE PLACED WHERE GROUNDWATER IS VISIBLE OR UNTIL THE GROUNDWATER TABLE HAS BEEN LOWERED BELOW THE PROPOSED IMPROVEMENTS. ANY UNSTABLE AREA, AS A RESULT OF GROUNDWATER, ENCOUNTERED DURING THE CONSTRUCTION OF THE PROPOSED IMPROVEMENTS SHALL BE STABILIZED AS AGREED UPON BY THE CONTRACTOR, THE DISTRICT, AND THE DESIGN ENGINEER AT THE TIME OF THEIR OCCURRENCE.
- IT SHALL BE THE DESIGN ENGINEER'S RESPONSIBILITY TO RESOLVE CONSTRUCTION PROBLEMS WITH THE DISTRICT DUE TO CHANGED CONDITIONS ENCOUNTERED BY THE CONTRACTOR DURING THE PROGRESS OF ANY PORTION OF THE PROPOSED WORK. IF, IN THE OPINION OF THE DISTRICT, PROPOSED ALTERATIONS TO THE SIGNED CONSTRUCTION PLANS INVOLVES SIGNIFICANT CHANGES TO THE CHARACTER OF THE WORK, OR TO THE FUTURE CONTIGUOUS PUBLIC OR PRIVATE IMPROVEMENTS, THE DESIGN ENGINEER SHALL BE RESPONSIBLE FOR SUBMITTING REVISED PLANS TO THE DISTRICT FOR REVIEW PRIOR TO ANY FURTHER CONSTRUCTION RELATED TO THAT PORTION OF THE WORK.
- THE CONTRACTOR AGREES TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSON AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY, AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OR WORK, ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER, THE ENGINEER, OR THE COUNTY.
- THE OWNER IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH PLAN REVIEW, EASEMENT PROCURMENT AND CONSTRUCTION OBSERVATION.
- ONLY ONE CONNECTION TO EXISTING FACILITIES WILL BE ALLOWED UNTIL THE NEW CONSTRUCTION HAS BEEN TESTED AND ACCEPTED.
- A BACKFLOW PREVENTION DEVICE, APPROVED BY DENVER WATER, IS REQUIRED ON ALL COMMERCIAL AND MULTI-FAMILY SERVICE LINES.
- PRVS ARE REQUIRED ON INDIVIDUAL DOMESTIC SERVICES WITH PRESSURES GREATER THAN 80 PSI.
- MECHANICAL JOINT RESTRAINT DEVICES SHALL BE:

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- PRIOR TO INSTALLATION OF WATER MAINS, THE LAND DEVELOPMENT MUST HAVE PROGRESSED TO AT LEAST THE "SUBGRADE" STAGE. SUBGRADE IS DEFINED AS AN ELEVATION OF NO MORE THAT EIGHT INCHES BELOW THE FINISHED STREET GRADE. ALL VALVE BOXES AND FIRE HYDRANTS WILL BE ADJUSTED TO THE FINAL FINISHED GRADE BY THE CONTRACTOR.
- BEFORE ANY SERVICE CONNECTIONS ARE MADE TO MAINS, APPLICATION FOR SAID SERVICE CONNECTIONS MUST BE RECEIVED AND APPROVED BY THE DISTRICT AND DENVER WATER.
- THE PIPE SPECIFIED BY THE OWNER OR HIS ENGINEER FOR THE WATER LINES IN THE PROJECT IS PVC, C900, DR 14 FOR 4 INCH AND DR18 FOR 6 INCH THROUGH 16 INCH. ALL WATER LINES SHALL HAVE A MINIMUM OF FOUR AND ONE-HALF (4½) FEET OF COVER AND BE LOCATED A MINIMUM OF TEN (10) FEET FROM THE SANITARY SEWER, AND THREE (3) FEET FROM THE EDGE OF CONCRETE CURB AND GUTTER PLAN OR EASEMENT LINE
- THE PROBATIONARY ACCEPTANCE OF THE NEW WATER LINES IS CONTINGENT UPON THE FOLLOWING:
  - WATER LINE TRENCH COMPACTION TEST RESULTS;
  - AS-BUILT RECORD DRAWINGS;
  - HEALTH DEPARTMENT TEST (CHLORINE AND/OR CLEAR WATER AS REQUIRED);
  - SUCCESSFUL PRESSURE TEST
- ALL WATER LINE VALVES SHALL BE SET AT THE INTERSECTION OF THE EXTENDED PROPERTY LINE AND WATER LINE, EXCEPT WHERE THAT POINT FALLS IN THE FLOW LINE OF A CONCRETE CROSS PAN. IN THAT CASE, THE VALVE SHALL BE LOCATED SO THAT SURFACE DRAINAGE DOES NOT INFILTRATE THE VALVE BOX. VALVE BOXES SHALL BE SET AT AN ELEVATION IN ACCORDANCE WITH CITY/COUNTY PAVING REQUIREMENTS.
- POLYETHYLENE WRAPPING SHALL BE INSTALLED AROUND ALL DUCTILE IRON PIPE, FITTINGS, VALVES, AND FIRE HYDRANT BARRELS. THE POLYETHYLENE SHALL HAVE A MINIMUM THICKNESS OF EIGHT (8) MILS.
- TRACER WIRE, GAUGE 12, SHALL BE INSTALLED ON ALL NON-METALLIC WATER MAINS.
- THE CHLORINATION OF THE WATER LINE SHALL BE PERFORMED PRIOR TO THE HYDROSTATIC TESTING. ALL WATER LINES SHALL BE CHLORINATED IN ACCORDANCE WITH DENVER WATER STANDARD 8.24 AND IN ACCORDANCE WITH AWWA C-651, "DISINFECTING WATER MAINS." THE PREFERRED METHOD IS TO USE SUFFICIENT CHLORINE TABLETS TO PRODUCE A 50 MG/L SOLUTION. CHLORINE TABLETS MAY BE USED FOR DISINFECTION IN 12-INCH AND SMALLER PIPES. CHLORINE TABLETS SHALL BE ATTACHED TO THE INSIDE TOP OF THE PIPE WITH AN APPROVED ADHESIVE AND CERTIFIED TO NSF/ANSI STANDARD 61 PRIOR TO PIPE INSTALLATION IN THE TRENCH. AN APPROVED ADHESIVE IS DOW CORNING 748 MULTIPURPOSE SEALANT. FOR 16-INCH

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- FOR DUCTILE IRON PIPE: MEGALUG 10 SERIES
  - FOR PVC PIPE: MEGALUG 2000 PV SERIES
30. PIPE JOINT RESTRAINT DEVICES SHALL BE:
- FOR DUCTILE IRON PIPE: MEGALUG 1700 SERIES
  - FOR PVC PIPE: MEGALUG 1500 PV SERIES
31. THE WATER QUALITY CONTROL DIVISION OF THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT (CDPHE) REQUIRES ALL WATER LINE CONTRACTORS TO POSSESS A CURRENT DISCHARGE PERMIT FOR DISCHARGES OF CHLORINATED AND PROCESS WATERS ASSOCIATION WITH THE INSTALLATION OF NEW MAINS OR CONDUITS. CONTRACT CDPHE WATER QUALITY CONTROL DIVISION AT 303-692-3539 FOR INFORMATION ON OBTAINING THE REQUIRED PERMIT.
32. IRRIGATION OF MEDIANS AND OTHER PUBLIC LANDSCAPED AREAS LESS THAN 25 FEET IN WIDTH MUST BE DONE IN ACCORDANCE WITH DENVER WATER OPERATING RULE 12.07 (CALL DENVER WATER CONSERVATION SECTION AT 303-628-6343 FOR INFORMATION REGARDING IRRIGATION SYSTEMS):
- FOR STRIPS OF LAND LESS THAN 6 FEET IN WIDTH – SPRAY IRRIGATION SHALL BE PROHIBITED. LOW-FLOW IRRIGATION SYSTEMS ARE REQUIRED.
  - FOR STRIPS OF LAND BETWEEN 6 FEET AND 15 FEET IN WIDTH – ONLY LOW FLOW IRRIGATION, OR SPRAY IRRIGATION USING LOW-ANGLE SPRAY NOZZLES DESIGNED FOR THE SPECIFIC WIDTH TO 5-50 BE IRRIGATED SHALL BE PERMITTED. ALL SPRAY HEADS MUST BE PRESSURE REDUCING AND DESIGNED TO PREVENT LOW HEAD DRAINAGE.
33. DENVER WATER IS TO MAKE ALL TAPS 2 INCHES AND SMALLER.
34. METER LOCATIONS SHALL BE APPROVED BY DENVER WATER. IT IS THE OWNER/CONTRACTOR'S RESPONSIBILITY TO CONTACT DENVER WATER METER SHOP FOR METER INSPECTION.
- ALL METERS FOR INSIDE DENVER, TOTAL SERVICE, AND READ AND BILL AREAS MUST BE FURNISHED WITH ITRON ERTS TO BE INSTALLED BY DENVER WATER AT THE TIME OF METER INSTALLATION OR INSPECTION.
  - METER PIT AND VAULT LIDS MUST HAVE A 2-INCH DIAMETER HOLE FOR ERT.
  - CALL 303-628-6706 TO SCHEDULE AN ON-SITE PRE-CONSTRUCTION MEETING FOR ALL METER SETTINGS 1½ INCH OR LARGER
35. ONLY FIRE HYDRANTS AND VALVE BOXES LISTED BELOW SHALL BE ACCEPTED FOR CONSTRUCTION BY THE SOUTHWEST METROPOLITAN WATER AND SANITATION DISTRICT.
- FIRE HYDRANTS:

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- AND LARGER PIPES, CHLORINE SLURRY IS REQUIRED TO BE FED INTO THE WATER USED TO FILL THE PIPE.
- DISINFECTION OF PIPE AT CONNECTIONS (NOT PART OF THE 24 HOUR CHLORINE SATURATION PROCESS) MUST BE DISINFECTED WITH AN NSF 60 CERTIFIED PRODUCT. CLOROX WILL NO LONGER BE AN APPROVED DISINFECTANT. SPLASHLESS BLEACH AND SCENTED BLEACH ARE CLEANING PRODUCTS ONLY AND ARE NOT TO BE USED FOR THE PIPE DISINFECTION. DENVER WATER HAS APPROVED PURE BRIGHT GERMICIDAL ULTRA BLEACH AS THE ALTERNATIVE TO CLOROX.
16. ALL WATER LINES SHALL BE HYDROSTATIC TESTED IN ACCORDANCE WITH THE AWWA C-600 SECTION 4, "HYDROSTATIC TESTING." ALL WATER LINES SHALL BE TESTED TO A MINIMUM OF 150 PSI. THE TEST SHALL BE SCHEDULED BY THE DISTRICT AND COORDINATED WITH ANY OTHER REVIEWING OR APPROVING AGENCY.
17. EXISTING VALVES IN THE DISTRICT MAY ONLY BE OPERATED BY DISTRICT PERSONNEL.
18. THE DISTRICT, ITS REPRESENTATIVE AND/OR THE DISTRICT ENGINEER, IS NOT A GUARANTOR OF THE CONSTRUCTING CONTRACTORS' OBLIGATIONS AND PERFORMANCE OF CONTRACT.
19. OBSERVATIONS OF WORK IN PROGRESS AND ON-SITE VISITS ARE NOT TO BE CONSTRUED AS A GUARANTEE BY THE DISTRICT OR DISTRICT ENGINEER OF THE CONTRACTORS CONTRACTUAL COMMITMENT.
20. THE DISTRICT AND/OR DISTRICT ENGINEER IS NOT RESPONSIBLE FOR SAFETY IN, ON OR ABOUT THE PROJECT SITE, NOR FOR COMPLIANCE BY THE APPROPRIATE PARTY OF ANY REGULATIONS RELATING THERETO.

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- MUELLER CENTURION MODEL A-473
  - WATEROUS PACER MODEL WB-67-250 WITH BRONZE BUSHED SHOE AND BRONZE SHAFT COUPLING
- VALVE BOXES:
- TYLER SCREW – TYPE 6-INCH CAST IRON VALVE BOX ASSEMBLY SERIES 6860 WITH NO. 160 LARGE OVAL BASE.
36. ALL VALVES SHALL OPEN RIGHT.
37. ALL FIRE HYDRANTS SHALL OPEN RIGHT.
38. FIRE LINE DISCLAIMER: THE CONSTRUCTION OF A PROPOSED FIRE LINE IS APPROVED FROM THE SOURCE CONNECTION TO THE SECOND VALVE. THE PORTION OF THE FIRE LINE FROM THE OUTLET SIDE OF THE CONNECTING VALVE TO THE BUILDING IS PRIVATE; THEREFORE THE DISTRICT WILL NOT OWN OR MAINTAIN THAT PORTION AND ACCEPTS NO RESPONSIBILITY FOR THE SIZE, ADEQUACY, LOCATION OR METHOD OF OPERATION. THE FIRE LINE DESIGN SHALL BE SIZED BY THE APPROPRIATE FIRE PROTECTION BUREAU AND THE PERSONS RESPONSIBLE FOR PROTECTING THE STRUCTURE SERVED.

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