

GENERAL SPECIFICATIONS

- ALL CONSTRUCTION SHALL CONFORM TO "TUCSON WATER STANDARD SPECIFICATIONS AND DETAILS, LATEST EDITION" EXCEPT AS MODIFIED HEREIN. SAID STANDARDS SHALL REMAIN ON SITE AT ALL TIMES DURING CONSTRUCTION.
- THE ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY (ADEQ) AND THE MARANA WATER DEPARTMENT RULES AND SPECIFICATIONS SUPERSEDE THE DESIGN PLANS UNLESS PRIOR WRITTEN AUTHORIZATION IS PROVIDED BY MARANA WATER. MARANA WATER MAY REQUEST THE CONTRACTOR OBTAIN SUPPLEMENTAL INFORMATION, DESIGN PLANS AND OR CALCULATIONS FROM THE DESIGN ENGINEER AND/OR ADEQ FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.
- PLAN ACCEPTANCE BY MARANA WATER DOES NOT CONSTITUTE APPROVAL OF "PRIVATE PLUMBING". "PRIVATE PLUMBING" INCLUDES ALL BACK FLOW PROTECTION & PLUMBING FROM THE WATER METER TO THE PREMISE OR FIRE SERVICES BEYOND THE RIGHT(S)-OF-WAY, PROPERTY OR EASEMENT LINES. CONTACT THE TOWN BUILDING OFFICIAL FOR "PRIVATE PLUMBING" REVIEW.
- TUCSON WATER STANDARD DETAIL SD-105 "GENERAL CONSTRUCTION NOTES" SHALL APPLY TO, AND BECOME AN INTEGRAL PART OF THESE PLAN AND CONTRACT DOCUMENTS.
- ANY WORK INCLUDING EXCAVATION AND/OR TRENCHING SHALL BE IN COMPLIANCE WITH ALL CURRENT OSHA STANDARDS.
- UNDER NO CIRCUMSTANCES IS THE CONTRACTOR TO OPERATE ANY VALVE, TURN ON ANY PUMP, OR MAKE ANY CHANGES TO THE OPERATING CONDITION OF MARANA WATER'S DISTRIBUTION SYSTEM WITHOUT THE CONSENT AND PRESENCE OF A MARANA WATER REPRESENTATIVE.
- ANY WORK THAT TAKES PLACE IN THE TOWN OF MARANA RIGHT(S)-OF-WAY WILL REQUIRE A TOWN OF MARANA RIGHT-OF-WAY USE PERMIT. THIS INCLUDES EQUIPMENT PARKED IN THE RIGHT(S)-OF-WAY WHEN THE WORK IS TAKING PLACE ELSEWHERE. PLEASE CONTACT THE TOWN OF MARANA DEVELOPMENT SERVICES DEPARTMENT AT (520) 382-2600.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CARE, PROTECTION, AND MAINTENANCE OF FACILITIES CALLED FOR ON THE PLANS AND/OR IN THE CONTRACT DOCUMENTS TO REMAIN AND TO BE PROTECTED IN PLACE. IN THE EVENT FACILITIES ARE DAMAGED, REMOVED, ALTERED AND THE LIKE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPLACEMENT THEREOF SOLELY AT THE CONTRACTOR'S COST. ALL WORK SHALL BE ACCOMPLISHED TO THE SATISFACTION OF THE TOWN OF MARANA.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FURNISH, HAUL AND APPLY ALL WATER REQUIRED FOR COMPACTION, CONSTRUCTION PROCESSES, AS THE CASE MAY BE, AND THE CONTROL OF DUST FROM CONSTRUCTION ACTIVITIES. THE COST THEREOF SHALL BE CONSIDERED TO BE INCIDENTAL TO THE COST OF CONSTRUCTION.
- UNIT PRICES FOR IMPORTED FILL SHALL BE FOR FILL COMPACTED IN PLACE TO THE REQUIRED DENSITY AT OPTIMUM MOISTURE.
- OMISSIONS OR CONFLICTS BETWEEN THE VARIOUS ELEMENTS OF THE DRAWINGS, NOTES, AND DETAILS INCLUDING BLUESTAKE, EXISTING UTILITY LOCATIONS AND CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IN A TIMELY MANNER. ISSUES SHALL BE RESOLVED BEFORE PROCEEDING WITH THE WORK.
- ALL GRADING SHALL CONFORM TO PIMA ASSOCIATION OF GOVERNMENTS (PAG) GRADING STANDARDS LATEST EDITION OR THE TOWN OF MARANA LAND DEVELOPMENT CODE TITLE 19 (STANDARDS FOR GRADING AND RELATED SITE WORK), DEPENDING ON JURISDICTION.
- CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS REQUIRED BY GOVERNMENT AGENCIES. THE COST THEREOF SHALL BE CONSIDERED AS INCIDENTAL TO THE VARIOUS CONTRACT ITEMS.
- A COPY OF THE ACCEPTED PLAN SHALL BE KEPT IN AN EASILY ACCESSIBLE LOCATION ON THE JOB SITE AT ALL TIMES DURING CONSTRUCTION.
- IF UNANTICIPATED CONDITIONS ARE ENCOUNTERED DURING THE COURSE OF CONSTRUCTION AND ARE BEYOND THE SCOPE OF THE DESIGN, THE ENGINEER SHALL SUBMIT THE NECESSARY REVISED OR SUPPLEMENTAL IMPROVEMENT PLANS FOR REVIEW AND ACCEPTANCE BY THE TOWN OF MARANA AND ITS ENGINEER.
- WHERE WATER MAINS CROSS EXISTING OR FUTURE DRAINAGE STRUCTURES, A MINIMUM VERTICAL SEPARATION OF 24" IS REQUIRED ABOVE STRUCTURE. IT IS MARANA WATER'S PREFERENCE TO INSTALL ALL MAINS ABOVE DRAINAGE STRUCTURES. THE TOWN WILL EVALUATE ALTERNATIVE METHODS FOR CROSSING DRAINAGE STRUCTURES ON AN INDIVIDUAL BASIS. IF A MAIN MUST BE INSTALLED BELOW A DRAINAGE STRUCTURE IT SHALL BE PER TUCSON WATER STANDARD DETAIL SD-107 AND BE INSTALLED WITH DUCTILE IRON PIPE (DIP) WITH RESTRAINED JOINTS IN ACCORDANCE WITH THE REQUIREMENTS OF TUCSON WATER STANDARDS.
- DRAINAGE STRUCTURE CROSSINGS SHALL BE IN COMPLIANCE WITH THE REQUIREMENTS OF TUCSON WATER DETAIL SD-107 AND WITH THE FOLLOWING REQUIREMENTS:
 - DUCTILE IRON IS REQUIRED UNDER ALL CROSSINGS.
 - JOINTS OR FITTINGS ARE NOT ALLOWED UNDER ANY TYPE OF DRAINAGE STRUCTURE. WHERE THIS CANNOT BE ACCOMPLISHED, A STEEL CASING WILL BE REQUIRED IN ACCORDANCE WITH THE REQUIREMENTS OF TUCSON WATER STANDARD DETAIL SD-800.

PRECONSTRUCTION NOTES

- CONTRACTOR SHALL NOTIFY MARANA WATER A MINIMUM OF FIVE (5) WORKING DAYS PRIOR TO ANY CONSTRUCTION TO SCHEDULE A PRECONSTRUCTION MEETING. WORK SHALL NOT COMMENCE UNTIL A "NOTICE TO PROCEED" HAS BEEN ISSUED BY MARANA WATER AND THE CERTIFICATION OF "APPROVAL TO CONSTRUCT" HAS BEEN RECEIVED BY MARANA WATER FROM THE ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY. ANY PIPE INSTALLED PRIOR TO THE "NOTICE TO PROCEED" MAY REQUIRE REMOVAL BY THE CONTRACTOR AT HIS OWN EXPENSE.
- THE CONTRACTOR SHALL CALL ARIZONA 811 TWO (2) FULL WORKING DAYS (48 HOURS) PRIOR TO COMMENCING CONSTRUCTION ACTIVITY TO DETERMINE ACCURATE UTILITY LOCATIONS. SATURDAY AND SUNDAY ARE NOT CONSIDERED WORKING DAYS. ALL EXISTING UTILITY PLAN DISCREPANCIES ARE TO BE REPORTED TO MARANA WATER PRIOR TO THE START OF CONSTRUCTION.
- UTILITY FACILITIES, ABOVE AND BELOW THE SURFACE, SHOWN ON THE PLANS WERE BASED ON THE BEST AVAILABLE INFORMATION TO THE CONSULTANT. UTILITY LOCATIONS ARE NOT INTENDED TO BE EXACT; THEREFORE, IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT LOCATIONS, ELEVATIONS, AND EXTENT OF ALL UTILITY FACILITIES WITHIN THE PROJECT LIMITS THAT MAY BE AFFECTED BY THE WORK AS CALLED FOR ON THE PLANS OR IN THE CONTRACT DOCUMENTS. MARANA WATER MAKES NO GUARANTEE OF THE ACCURACY OR COMPLETENESS OF THE INFORMATION PROVIDED; THEREFORE THE CONTRACTOR SHALL POTHOLE ALL POINTS OF CONNECTION AND EXISTING UTILITIES AT CROSSINGS AND REPORT ANY PLAN DISCREPANCIES TO MARANA WATER PRIOR TO CONSTRUCTION.
- WATER MAINS ARE TO BE INSTALLED WITH A MINIMUM OF 44" OF COVER FOR ALL MAINS 12" AND SMALLER UNDER PAVEMENT, EXCEPT AS OTHERWISE NOTED ON THE PLANS. ALL MAINS INSTALLED OUTSIDE PAVEMENT SHALL BE INSTALLED WITH SIXTY INCHES (60") MINIMUM COVER.
- WATER MAINS ARE TO BE INSTALLED AFTER SANITARY SEWER INSTALLATION AND GRADING OF STREETS AND WALK AREAS TO WITHIN 6" OF FINAL GRADE FOR NEW CONSTRUCTION AND BEFORE DRY UTILITY (ELECTRIC, TELEPHONE, ETC.) INSTALLATION.
- A REGISTERED ENGINEER OR A REGISTERED LAND SURVEYOR SHALL CERTIFY THAT THE GRADE IS WITHIN 6" OF FINAL GRADE AND PROVIDE LAYOUT SHEETS PRIOR TO NOTICE TO PROCEED, FOR NEW CONSTRUCTION.
- CONTRACTOR TO PROVIDE ALL CUT SHEETS, SHOP DRAWINGS AND EQUIPMENT LISTS TO MARANA WATER CONSTRUCTION SHALL NOT BEGIN UNTIL ALL PROJECT MATERIALS ARE APPROVED BY MARANA WATER STAFF.
- ALL WATER MAINS SHALL BE INSPECTED BEFORE BACKFILL. FINAL ACCEPTANCE WILL NOT BE GRANTED WITHOUT AUTHORIZATION FROM MARANA WATER SHOWING INSPECTION HAS BEEN PERFORMED.
- THE OWNER (DEVELOPER) SHALL PAY FOR ALL TESTING AND RE-TESTING INSPECTIONS AND FEES. ALL FEES SHALL BE PAID IN FULL BEFORE ACCEPTANCE OF WATER SYSTEM.
- A WATER SERVICE AGREEMENT MUST BE SIGNED BEFORE WATER CONSTRUCTION BEGINS.
- ELECTRIC LINES SHALL NOT BE INSTALLED WITHIN A HORIZONTAL DISTANCE OF 6" FROM THE EDGE OF THE WATER MAIN UNLESS SHOWN IN A JOINT TRENCH DETAIL ON THE APPROVED PLANS. THEREFORE, MINIMUM HORIZONTAL SEPARATION SHALL BE THREE FEET (6"). SEPARATION SHALL BE FROM OUTSIDE TO OUTSIDE OF PIPE.
- NO CONNECTION TO THE EXISTING MARANA WATER DISTRIBUTION SYSTEM WILL BE PERMITTED UNLESS PRIOR APPROVAL HAS BEEN OBTAINED IN WRITING FROM A MARANA WATER REPRESENTATIVE.
- IF NEW CONSTRUCTION REQUIRES THE WATER TO BE SHUT OFF TO MAKE TIE-INS TO THE EXISTING DISTRIBUTION SYSTEM, THE CONTRACTOR SHALL PROVIDE MARANA WATER WITH A WRITTEN SCHEDULE OF THE CONNECTIONS A MINIMUM OF 48 HOURS PRIOR TO THE START OF SUCH TIE-INS. HOWEVER, NO WATER WILL BE TURNED OFF UNTIL ALL AFFECTED WATER USERS HAVE BEEN NOTIFIED IN WRITING BY THE CONTRACTOR OF THE SCHEDULE NOT LESS THAN TWENTY-FOUR (24) HOURS BEFORE WATER IS TO BE TURNED OFF.
- THE CONTRACTOR IS REQUIRED TO NOTIFY ALL WATER USERS IN THE IMMEDIATE VICINITY OF ANY PROPOSED SERVICE INTERRUPTION OR INCONVENIENCE DURING CONSTRUCTION AND IS TO PROVIDE A PHONE NUMBER AT WHICH THE CONTRACTOR CAN BE REACHED 24 HOURS A DAY IN THE EVENT OF CUSTOMER INQUIRY.
- THE CONTRACTOR SHALL NOTIFY MARANA WATER A MINIMUM OF FIVE (5) WORKING DAYS PRIOR TO ANY CONSTRUCTION WHICH MAY COME IN CONTACT WITH TRANSITE (AC) PIPE. IF REMOVAL OF AC PIPE IS NECESSARY, A CERTIFIED CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL AC PIPE MATERIAL IN ACCORDANCE WITH THE REQUIREMENTS OF ALL CURRENT LAWS AND GUIDELINES.

AIR RELEASE VALVES (ARVs)

- THE POINTS OF CONNECTION OF THE ARV ASSEMBLY TO THE MAINLINE AS SHOWN ON THE PLANS ARE FOR INFORMATION ONLY. THE CONTRACTOR SHALL FIELD VERIFY THE ACTUAL CONNECTION POINT AT HIGH POINTS IN THE

- WATER MAIN, AND SHALL BE APPROVED BY THE MARANA WATER INSPECTOR.
- BELOW GROUND ARVs ARE NOT PERMITTED WITHOUT PRIOR APPROVAL BY TOWN OF MARANA ENGINEERING AND MARANA WATER ENGINEERING.
- ABOVE GROUND ARVs ARE TO BE CONSTRUCTED PER DETAIL 1 THIS SHEET. THE LOCATION OF ABOVE GROUND ARVs SHALL BE WITHIN PUBLIC RIGHT(S)-OF-WAY BETWEEN SIDEWALK AND RIGHT(S)-OF-WAY LINE, OR WITHIN A WATER EASEMENT, OR WITHIN A PUBLIC UTILITY EASEMENT.
- ALL ARVs SHALL HAVE STAINLESS STEEL OR BRASS SCREEN INSTALLED ON THE ELBOW. SERVICE LINES FOR ARVs SHALL BE SIZED PER DETAIL 1 THIS SHEET. NON-POTABLE/RECLAIMED WATER AND POTABLE WATER AIR VALVE BOXES SHALL HAVE A MINIMUM HORIZONTAL SEPARATION OF SIX (6) FEET AS MEASURED FROM THE OUTSIDE OF THE METER BOXES.

MATERIALS

- ALL MATERIALS SHALL BE AMERICAN MADE AS DEFINED BY THE CODE OF FEDERAL REGULATIONS TITLE 23 PART 635. MATERIALS THAT ARE IMPORTED WILL BE REPLACED AT NO COST TO THE TOWN OF MARANA.
- ALL FIRE LINE STUB OUTS SHALL BE EQUIPPED WITH A DVA PER DETAILS 3 OR 4 THIS SHEET.
- DVA BOXES SHALL NOT BE INSTALLED IN PAVED AREAS, SIDEWALKS, ETC., AND SHALL BE LOCATED IN DEDICATED EASEMENTS OR RIGHT(S)-OF-WAY.
- ALL DVAs SHALL BE INSTALLED PER DETAILS 3 OR 4 THIS SHEET.
- ALL PVC PIPE DELIVERED TO THE SITE SHALL BE PROTECTED FROM UV LIGHT AND HEAT. THE MARANA WATER INSPECTOR MAY REQUEST THE CONTRACTOR OBTAIN WRITTEN DOCUMENTATION FROM THE PVC PIPE MANUFACTURER STATING THAT THE DELIVERED PIPE MEETS THE MANUFACTURER'S SPECIFICATIONS AND IS SUITABLE FOR USE AT THE TIME OF INSTALLATION. ANY PIPE NOT ACCEPTABLE BY THE MANUFACTURER OR THE MARANA WATER INSPECTOR SHALL BE IMMEDIATELY REMOVED FROM THE SITE BY THE CONTRACTOR.
- ALL TAPPING SLEEVE VALVES SHALL BE EQUIPPED WITH A MECHANICAL JOINT PLUG OR APPROVED EQUAL TO PREVENT TAMPERING DURING CONSTRUCTION.
- MARANA WATER DOES NOT ACCEPT UNI-FLANGES.
- ALL WATER MAINS SHALL BE CONSTRUCTED WITH GATE VALVES W/BOX AND COVER.
- VALVE NUT EXTENSIONS, IF REQUIRED, SHALL BE SUPPLIED AND INSTALLED BY THE CONTRACTOR, IN ACCORDANCE WITH THE REQUIREMENTS OF TUCSON WATER STANDARD DETAIL NO. 305.
- SOLID SLEEVE ADAPTERS SHALL BE REQUIRED FOR ALL PIPING TRANSITIONS. ADAPTERS SHALL HAVE TYLER M.J. FITTINGS, 12" MINIMUM LENGTH OR APPROVED EQUAL.
- SIZE ON SIZE TAPPING SLEEVES SHALL CONSIST OF MINIMUM TYPE 304 STAINLESS STEEL BODY, FLANGE AND ALL ACCESSORIES, BUT MUST BE APPROVED BY MARANA WATER AFTER THE EXISTING MAIN IS EXPOSED.
- THE ONLY APPROVED PIPING MATERIALS FOR POTABLE WATER LINES ARE: COPPER TYPE K WITH CTS COMPRESSION FITTINGS, PVC C-900 DR 14 (CLASS 305) AND DUCTILE IRON PIPE CLASS 350. APPROVED MANUFACTURERS OF SAID MATERIALS ARE LISTED IN THE "TUCSON WATER STANDARD SPECIFICATIONS AND DETAILS, LATEST EDITION".
- FIRE HYDRANTS SHALL BE 5.25" BORE BY AMERICAN FLOW CONTROL WATEROUS PACER (WB67-250), CLOW MEDALLION, OR APPROVED EQUAL (SHOP DRAWINGS REQUIRED). THE SAME TYPE OF HYDRANT WILL BE REQUIRED FOR AN ENTIRE SUBDIVISION.
- HYDRA SHIELD LOCKS ARE REQUIRED ON ALL FIRE HYDRANTS.
- ALL SAMPLE STATIONS SHALL BE KUPERFLE ECLIPSE 66WC, KORALEEN ENTERPRISES, OR APPROVED EQUAL.
- ALL TEES AND CROSSES WITH VALVES SHALL HAVE FLANGED FITTINGS.
- DUCTILE IRON PIPE SHALL EXTEND A MINIMUM OF 20' BEYOND THE TOP VERTICAL BEND ON ALL PIPE LOWERING SECTIONS.
- ONLY INTEGRAL BELL TYPE RESTRAINED JOINTS (I.E. US PIPE TR FLEX, OR AMERICAN FLEX-RING, OR APPROVED EQUAL), OR MECHANICAL JOINT RETAINER GLAND RESTRAINTS (I.E. MEGALUG, OR APPROVED EQUAL) SHALL BE USED FOR 16" DIAMETER AND LARGER DUCTILE IRON PIPE. JOINTS RESTRAINED USING A GRIPPING OR WEDGE ACTION GASKET SHALL NOT BE ALLOWED. SHOP DRAWINGS MUST BE SUBMITTED PRIOR TO CONSTRUCTION.

DETECTOR TAPE AND TRACER WIRE

- CONTRACTOR TO INSTALL DETECTOR TAPE ABOVE ALL POTABLE AND NON-POTABLE WATER LINES AND WATER SERVICES. TAPE IS TO BE PLACED 18" BELOW FINISH GRADE.
- CONTRACTOR IS REQUIRED TO INSTALL TRACER WIRE PER SD-116. 3' LOOPS ARE TO BE BROUGHT UP AROUND VALVE RISERS, DVAs, ARVs, ETC.
- THE TRACER WIRE SHALL BE CERTIFIED BY A LICENSED ELECTRICAL CONTRACTOR FOR CONTINUITY AFTER PAVING OPERATIONS ARE COMPLETED. IT IS RECOMMENDED THAT THE CONTRACTOR PERFORM PRELIMINARY TESTS PRIOR TO PAVING. FINAL ACCEPTANCE WILL NOT BE GRANTED UNTIL CERTIFICATION IS RECEIVED BY MARANA WATER. SPLICES SHALL BE MADE WITH SILICON SPLICE AND SHALL BE INSPECTED. SIGNAL INDUCED TEST RESULTS WILL NOT BE ACCEPTED.
- TRACER WIRE REQUIRED FOR ALL WATER MAIN LINES. WIRE SHALL BE TAPED TO THE WATER MAIN WITH 10 MIL. TAPE EVERY 10 FEET, INCLUDING SERVICE LINES.

WATER SERVICES

- THE DEVELOPER/APPLICANT SHALL HAVE ALL CURB STOPS LOCATED AND PROTECTED DURING ALL PHASES OF CONSTRUCTION. NO METERS SHALL BE SET UNTIL METER BOX IS PROPERLY INSTALLED.
- THE CONTRACTOR SHALL SET CURB STOPS 18" BEHIND BACK OF CURB OR SIDEWALK (AS APPLICABLE) FROM STREET WITH CURBS AND 8" BELOW FINISH GRADE.
- THE CONTRACTOR SHALL SET CURB STOPS 3' FROM PROPERTY LINE FOR STREETS WITHOUT CURBS AND 8" BELOW FINISH GRADE.
- CURB STOPS SHALL NOT BE INSTALLED AT THE SAME LOT CORNERS AS THE ELECTRICAL SERVICE. WHERE THIS CANNOT BE ACCOMPLISHED, CONTACT THE MARANA WATER REPRESENTATIVE.
- METER BOXES AND LIDS TO BE FURNISHED BY CONTRACTOR/DEVELOPER AND INSTALLED BY CONTRACTOR. ALL METER BOX SIZES SHALL CONFORM TO MARANA WATER STANDARDS. METER BOX SHALL BE INSTALLED TO 0.1' ABOVE FINISHED GRADE. METER BOXES SHALL HAVE A MINIMUM OF 4 FEET CLEARANCE FROM ANY OBSTRUCTIONS.
- METER BOXES SHALL BE ARMORCAST ROTOCAST METER BOX OR DFW. RPM COVER WITH RADIO READ RETENTION, OR APPROVED EQUAL. NO METER BOXES WITH STEEL LIDS SHALL BE USED.
- WATER SERVICE SHALL REMAIN MARKED DURING CONSTRUCTION. ALL RELOCATION OF SERVICES SHALL BE DONE BY THE CONTRACTOR, INCLUDING HEIGHT ADJUSTMENTS.
- THE DEVELOPER OR BUILDER IS REQUIRED TO INSTALL A CUSTOMER CUTOFF BALL OR GATE VALVE WITH HANDLE WITHIN METER BOX OR IN A SEPARATE BOX OF IT'S OWN.
- WATER SERVICE WILL BE PROVIDED AS SHOWN ON APPROVED PLAN. ANY CHANGES TO PARCEL CONFIGURATION MAY REQUIRE WATER SERVICE REVISIONS OR MODIFICATION.
- SEPARATE METERS WILL BE REQUIRED FOR IRRIGATION SYSTEMS. DOMESTIC AND IRRIGATION SERVICE SHALL NOT BE INTERCONNECTED.
- SPLIT METERS ARE NOT PERMITTED. SEPARATE SERVICES ARE REQUIRED FOR EACH LOT, PARCEL, OR COMMERCIAL ACCOUNT.
- SERVICES WILL NOT BE ALLOWED IN DRAINAGE WAYS OR APRONS TO DRAINAGE WAYS.
- METERS AND BOXES SHALL NOT BE PLACED IN DRIVEWAYS, SIDEWALKS, STREETS, ETC.
- ALL SERVICE LINES SHALL BE A MINIMUM 1" AND SHALL BE TYPE K SOFT COPPER.
- WATER SERVICE LINES SHALL BE INSTALLED WITH ADDITIONAL SLACK TO PROVIDE FINISH GRADE ADJUSTMENT.
- ALL FITTINGS USED WITH COPPER SHALL BE CTS COMPRESSION FITTINGS.
- ON 2-INCH SERVICES, HARD COPPER CAN BE USED WITH CTS COMPRESSION OR SWEAT FITTINGS.
- MARANA WATER REQUIRES A 1"x3/4" ANGLE METER STOP FOR THE INSTALLATION OF A 5/8"x3/4" METER FOR DOMESTIC SERVICE. IF FIRE SPRINKLER SERVICE IS REQUIRED FOR ANY SERVICE WITHIN THE SUBDIVISION BLOCK THE CONTRACTOR SHALL SUPPLY A 1"x1" ANGLE METER STOP ON ALL SERVICES WITH APPROPRIATE REDUCERS FOR ALL OTHER ANGLE METER STOPS.

BACKFLOW

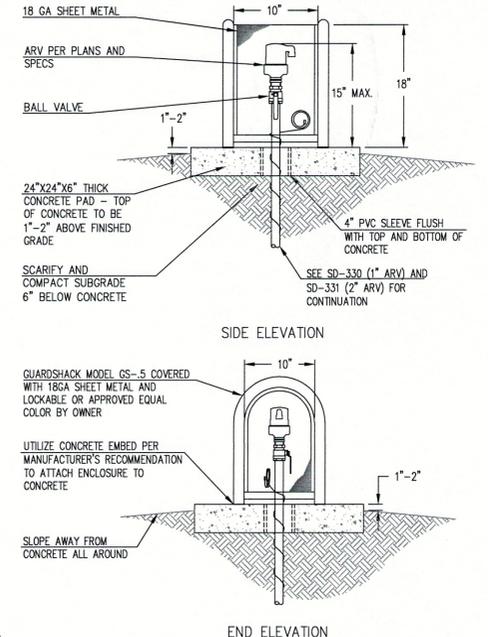
- ALL CONSTRUCTION WATER WILL BE METERED WITH AN APPROPRIATE SIZE WATER METER AND BACKFLOW PREVENTION DEVICE. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE WATER METER FROM THE MARANA WATER BACKFLOW DEVICE SHALL BE PROVIDED BY CONTRACTOR.
- THE CONTRACTOR SHALL INSTALL REDUCED PRESSURE ASSEMBLY (RPA) IN ACCORDANCE WITH THE REQUIREMENTS OF TUCSON WATER APPROVED STANDARD DETAILS FOR BACKFLOW ASSEMBLIES ON ALL COMMERCIAL, IRRIGATION AND SERVICES WITH NON-POTABLE CONNECTIONS WITH A LOCKABLE CAGE. A PERMIT FOR BACKFLOW IS REQUIRED THROUGH MARANA WATER. SUBMITTALS FOR SAID ASSEMBLIES SHALL BE SUBMITTED TO MARANA WATER AND BUILDING OFFICIAL FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.
- ALL BACKFLOW PREVENTION DEVICES SHALL BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE CURRENT, ADOPTED PLUMBING CODE STANDARDS, AND APPROVED BY THE TOWN BUILDING OFFICIAL.
- BACKFLOW DEVICE TO BE SIZED ACCORDING TO METER SIZE AND INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE TOWN OF MARANA ADOPTED PLUMBING CODE.
- BACKFLOW PREVENTER INSPECTION TEST RESULTS WILL BE REQUIRED PRIOR TO FINAL WALK THROUGH FOR THE PROJECT.
- TEMPORARY BACKFLOW PREVENTERS USED FOR CONSTRUCTION MAY REQUIRE MONTHLY TESTING AND RE-CERTIFICATION BY THE CONTRACTOR AT THE DISCRETION OF THE TOWN OF MARANA.

FINAL CONSTRUCTION NOTES

- THE CONTRACTOR SHALL SUBMIT A "PRELIMINARY FLUSHING SEQUENCE" TO THE MARANA WATER REPRESENTATIVE FOR APPROVAL PRIOR TO ANY FLUSHING OPERATIONS. EXISTING DEAD-END MAINS SHALL BE THOROUGHLY FLUSHED BEFORE TIE-INS ARE MADE TO NEW LINES BEING INSTALLED.
- THE CONTRACTOR SHALL NOTIFY THE MARANA WATER REPRESENTATIVE FOUR (4) WORKING DAYS IN ADVANCE FOR SCHEDULING WATER MAIN PRESSURE TESTING AND BACTERIOLOGICAL TESTING. THE MARANA WATER REPRESENTATIVE WILL COORDINATE WITH THE CONTRACTOR.
- NO TIE-INS TO EXISTING WATER MAINS WILL BE PERMITTED UNTIL BACTERIOLOGICAL TESTING RESULTS ARE REPORTED NEGATIVE.
- THE DEVELOPER/APPLICANT SHALL HAVE ALL WATER VALVES IDENTIFIED AND LOCATED PRIOR TO PAVING AND SHALL HAVE ALL VALVES "FRAMES AND COVERS" SET TO FINISH GRADE AFTER PAVING, OR FINISH GRADING IF NOT IN PAVED AREAS.
- AFTER THE PAVING, CURBS AND GUTTERS, AND SIDEWALKS HAVE BEEN INSTALLED, A MARANA WATER REPRESENTATIVE WILL CHECK ALL VALVE RISERS, SERVICE METER BOXES, AND FIRE HYDRANTS FOR OPERATION AND ADJUSTMENTS PRIOR TO FINAL APPROVAL.
- FINAL ACCEPTANCE WILL NOT BE GRANTED UNTIL THE PIPE CERTIFICATION, BACK FILL COMPACTION TESTING RESULTS, VALVE CERTIFICATION, AND THE PASSING MICROBIOLOGICAL TEST AND A.D.E.Q. CERTIFICATION OF "APPROVAL OF CONSTRUCTION" HAVE BEEN RECEIVED BY MARANA WATER.
- ADDITIONAL MARANA WATER INSPECTION FEES WILL BE CHARGED FOR ANY WORK NOT PERFORMED DURING THE REFERENCED WORKING DAYS AND TIMES.
- FIRE LINE/SPRINKLER SERVICE LINES AND STUB OUTS SHALL BE INCLUDED IN THE PRESSURE TEST AND BAC-T SAMPLING TEST.
- TREES SHALL NOT BE PLANTED WITHIN TEN (10) FEET OF ANY WATER MAINS 4" AND LARGER AND ALL IRRIGATION LINES SHALL MAINTAIN SEPARATIONS FROM POTABLE AND NON POTABLE MAINS.

NON-POTABLE/RECLAIMED SYSTEM

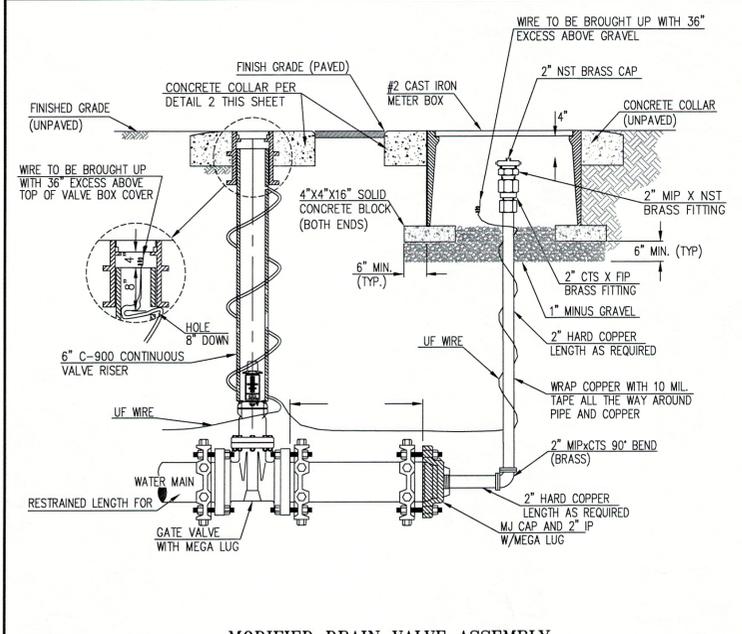
- NON-POTABLE/RECLAIMED WATER MAINS SHALL BE INSTALLED WITH A MINIMUM OF 44" (FORTY-FOUR INCHES) OF COVER FROM FINISH GRADE EXCEPT AS OTHERWISE NOTED ON APPROVED PLANS AND 60" MINIMUM OUTSIDE OF PAVEMENT.
- ALL NON-POTABLE WATER MAINS SHALL BE INSTALLED WITH A MINIMUM HORIZONTAL SEPARATION FROM POTABLE WATER AND SANITARY SEWER OF 6' AND A MINIMUM VERTICAL SEPARATION OF TWO FEET (2').
- NON-POTABLE/RECLAIMED WATER SERVICES SHALL BE INSTALLED WITH A MINIMUM OF 36" OF COVER AND 12" (MIN.) OF VERTICAL SEPARATION FROM GAS LINE AND ALL DRY UTILITIES.
- IRRIGATION, VALVE, ARV, AND DVA BOX LIDS SHALL HAVE THE LETTERS "RW" CAST INTO THE LID. THE LETTERS SHALL BE 3" (THREE INCHES) IN HEIGHT. ALL APPURTENANCES WITHIN SAID BOXES SHALL BE PAINTED PURPLE. SERVICES ONE INCH AND LARGER SHALL BE HDPE WITH PURPLE STRIPE OR HDPE WITH PURPLE POLYWRAP SLEEVE.
- ALL NON POTABLE/RECLAIMED MAINS CROSSING SEWER (GRAVITY OR PRESSURE) OR POTABLE WATER MAINS SHALL MAINTAIN THE SEPARATION IN ACCORDANCE WITH THE REQUIREMENTS OF TUCSON WATER STANDARDS AND THE ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY ENGINEERING BULLETIN NO. 10, CHAPTER 7.
- CONTRACTOR TO STAMP ALL CURBS WITH "RW" AT ALL SERVICE LOCATIONS.



- NOTES:
- THIS DETAIL SUPERCEDES SD-330 AND SD-331 REGARDING ABOVE GROUND AIR RELEASE VALVE INSTALLATION REQUIREMENTS ONLY. BELOW GROUND REQUIREMENTS REMAIN UNCHANGED.
 - TRACER WIRE PER SD-116. LEAVE 3' MINIMUM COILED ABOVE THE CONCRETE SLAB.

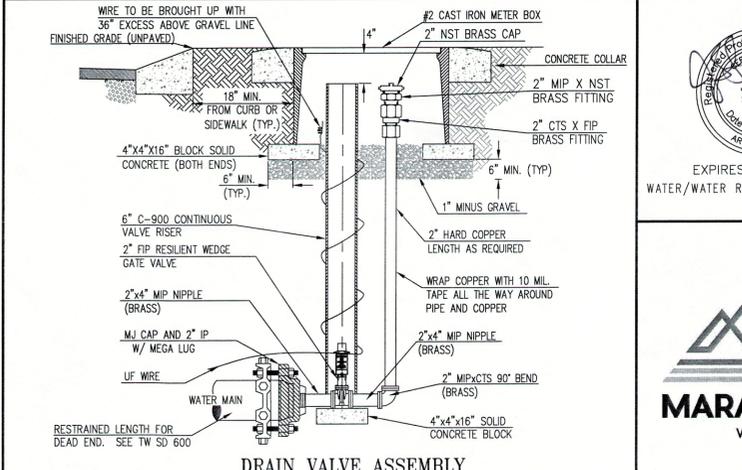
AIR RELEASE VALVE DETAIL (ABOVE GRADE)

DETAIL 1 N.T.S.



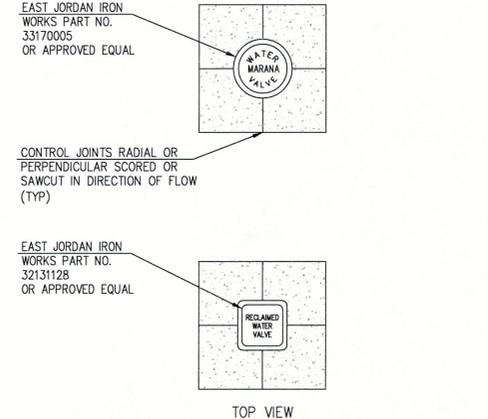
MODIFIED DRAIN VALVE ASSEMBLY

DETAIL 3 N.T.S.



DRAIN VALVE ASSEMBLY

DETAIL 4 N.T.S.



- NOTES:
- THIS DETAIL SUPERCEDES SD-300 REGARDING WATER VALVE BOX COVER REQUIREMENTS ONLY. THE CONCRETE, SIZE, SHAPE, PREP, ETC. REMAIN UNCHANGED.
 - CONFIGURATION OF CONCRETE COLLARS SHALL BE SQUARE OR RECTANGULAR.

WATER VALVE BOX INSTALLATION IN PAVEMENT

DETAIL 2 N.T.S.

NOTICE TO DESIGN ENGINEER

THE GENERAL NOTES AND STANDARD DETAILS AS SHOWN ON THIS DRAWING ARE FOR REFERENCE ONLY. IT IS THE DESIGN ENGINEER'S RESPONSIBILITY TO VERIFY THE APPLICABILITY OF EACH STANDARD NOTE AND DETAIL FOR THE PROJECT. ALL MODIFICATIONS TO THE INFORMATION SHOWN ON THIS DETAIL SHEET SHALL HAVE PRIOR APPROVAL FROM TOWN OF MARANA WATER AND ITS ENGINEERS.



EXPIRES 9/30/2020
WATER/WATER RECLAMATION ENGINEER

GENERAL NOTES AND STANDARD DETAILS

John Thi... 8-8-18
MARANA WATER DIRECTOR DATE

8-8-18
TOWN OF MARANA ENGINEER DATE

JULY 2018



SHEET OF