WATER STANDARD PLANS
May 2014 with 2019 Clarifications

PREFACE

The primary purpose of these documents is to clearly define the current WATER engineering and construction standards to be used in Park City. Park City is in the process of updating the Water portion of the Park City Design Standards, Construction Specifications, and Standard Details. However, while the City finalizes the design standards and specifications portion, the Water related standard plans have been completed. These updated standard plans incorporate current Water regulations and City water system operation, maintenance, and asset management considerations. These documents serve to replace the existing Section 700 Standard Details of the Park City Design Standards, Construction Specifications, and Standard Details. Conflicts between the existing specifications and updated standard plans shall be resolved in favor of the updated standard plans.

The plan numbering structure of this document follows the same basic structure as the APWA Standard Plans, however, there are some differences. Following is an explanation of the structure of this document:

1. Part 5 – Water Systems. Standard Plan divisions for Water system related details are:
   a. Notes, Abbreviations, and Symbols
   b. Fire Hydrants
   c. Water Meters
   d. Corrosion Protection Systems
   e. Piping
   f. Thrust Blocks
   g. Valves
   h. Trenching
   i. General

2. Numbering – A plan number having a suffix of “S” identifies that the plan contains index, legend, detail specific notes, and acceptable manufacturer and parts numbers related to the standard plan.

This document is intended to be altered periodically to ensure that the most current Park City Standards are available for public use. This document will be revised and published on the City’s web site annually, during the first week of January.

2019 Clarifications were made to ensure adequate separation requirements between water lines and other utilities. Clarifications regarding pressure testing and disinfection requirements were also added. All drawings with 2019 clarifications include a 6/2019 revision date in the title block.
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### PART 5 – WATER SYSTEMS

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*Water System Field Observation Guidelines 2014*
GENERAL WATER NOTES

1. THE FOLLOWING DOCUMENTS ARE INCORPORATED INTO THESE CONTRACT DOCUMENTS BY REFERENCE:
   a. PARK CITY DESIGN STANDARDS, CONSTRUCTION SPECIFICATIONS, AND STANDARD DETAILS
   b. AMERICAN WATER WORKS ASSOCIATION STANDARDS (AWWA)
   c. UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF DRINKING WATER (DDW), R309-550
      FACILITY DESIGN AND OPERATION: TRANSMISSION AND DISTRIBUTION PIPELINES
   d. INTERNATIONAL PLUMBING CODE

2. ALL PIPE, JOINTS, FITTINGS, VALVES, AND FIRE HYDRANTS SHALL CONFORM TO ANSI/NSF STANDARD 61
   AND APPLICABLE SECTIONS OF AWWA STANDARDS C104-08 THROUGH C550-05 AND C900-07 THROUGH
   C950-07. ALL BRASS AND BRONZE PIPE, FITTINGS, AND VALVES SHALL MEET LOW LEAD COMPLIANCE
   REQUIREMENTS IN ACCORDANCE WITH ANSI/ASTM 371.

3. ALL PRODUCTS AND MATERIALS SHALL BE “MADE IN THE USA”, UNLESS SPECIFICALLY APPROVED BY THE
   PARK CITY WATER DIRECTOR. STEEL AND IRON MATERIAL PRODUCTS SUCH AS PIPE, FITTINGS, VALVES,
   MANHOLE, METER VAULT, AND VALVE BOX CASTINGS SHALL BE “MELTED & MANUFACTURED IN THE USA”.
   PARK CITY WATER ACKNOWLEDGES THAT CERTAIN SPECIALIZED WATER SYSTEM PRODUCTS INCLUDED IN
   THE ACCEPTABLE PRODUCTS LIST, SUCH AS HIGHER PRESSURE-RATED VALVES, MAY NOT MEET THE
   MADE IN USA REQUIREMENT AND ARE IN THE “QUALIFIED” MADE IN USA CATEGORY. THESE PRODUCTS
   HAVE BEEN PREVIOUSLY REVIEWED AND APPROVED.

4. UTAH DIVISION OF DRINKING WATER (DDW) APPROVALS:
   a. FOR PROJECTS WITH TRANSMISSION AND/OR DISTRIBUTION LINES OVER 16 INCHES IN DIAMETER
      AND/OR INCLUDING A WATER BOOSTER STATION OR PRESSURE REDUCING STATION, DDW APPROVALS
      OUTLINED IN R309-500 MUST BE OBTAINED IN CONJUNCTION WITH SUBMITTAL OF A WATER MASTER
      PLAN TO THE CITY. FOLLOWING DESIGN REVIEW BY THE CITY AND INCORPORATION OF CITY
      COMMENTS, THE DESIGN ENGINEER SHALL SUBMIT WATER CONSTRUCTION PLANS TO THE DDW TO
      OBTAIN APPROVALS. NO WATER CONSTRUCTION SHALL COMMENCE UNTIL ALL REQUIRED DDW
      APPROVALS HAVE BEEN OBTAINED.
   b. FOR PROJECTS WITH TRANSMISSION AND/OR DISTRIBUTION LINES OVER 16 INCHES IN DIAMETER
      AND/OR INCLUDING A WATER BOOSTER STATION OR PRESSURE REDUCING STATION A DDW FINAL
      OPERATING PERMIT IS REQUIRED PRIOR TO THE CITY OPERATING AND ACCEPTING THE WATER
      IMPROVEMENTS. FOLLOWING THE CITY’S WATER SYSTEM WALK-THROUGH AND THE CONTRACTOR’S
      SUBSEQUENT COMPLETION OF PUNCH-LIST ITEMS, THE CITY’S WATER DEPARTMENT WILL SUBMIT AN
      OPERATING PERMIT REQUEST TO THE DDW. THE FOLLOWING ITEMS ARE REQUIRED FROM THE
      DEVELOPER FOR THE CITY’S SUBMITTAL:
      i. FINAL RECORD DRAWINGS AND O&M MANUALS
      ii. HYDROSTATIC TESTING AND FLUSHING RECORDS (COMPLETED BY THE CITY’S INSPECTOR)
      iii. ACCEPTABLE BACTERIOLOGICAL TESTING RESULTS
      iv. CERTIFICATION BY THE (DEVELOPER’S) ENGINEER OF RECORD

5. THE CITY UTILIZES AN ADVANCED METERING INFRASTRUCTURE (AMI) SYSTEM. THE DEVELOPER MAY BE
   REQUIRED TO CONDUCT A PROPOGATION STUDY AND INSTALL RESULTING RECOMMENDED
   IMPROVEMENTS TO FACILITATE A CLEAR SIGNAL TO THE PROJECT. REFER TO STANDARD PLAN 520 FOR
   SPECIFIC METER TRANSMITTER UNIT (MXU) REQUIREMENTS.

6. REFER TO APPLICABLE STANDARD PLANS FOR WATER SYSTEM DETAILS AND REQUIREMENTS

7. EXTERNAL CORROSION PROTECTION SHALL BE INCLUDED ON ALL WATER SYSTEM IMPROVEMENTS,
   REFERENCE STANDARD PLAN 534 FOR REQUIREMENTS. A SOILS ANALYSIS MAY BE REQUIRED IN
   CONJUNCTION WITH THE DESIGN OF THE WATER SYSTEM TO DETERMINE THE EXTENT OF CORROSION
   PROTECTION REQUIRED.

8. REFER TO STANDARD PLAN 520 FOR GENERAL REQUIREMENTS FOR WATER METERS, METER VAULTS, AND
   WATER SERVICE LINES

9. CITY INSPECTION OF WATER SYSTEM IMPROVEMENTS WILL FOLLOW THE “PUBLIC WATER SYSTEM FIELD
   OBSERVATION GUIDELINES” AND ESTABLISHED CITY POLICIES. CONTRACTOR SHALL PROVIDE NECESSARY
   ASSISTANCE TO MEET THE GUIDELINE REQUIREMENTS.

10. NOTIFY CITY ENGINEER’S OFFICE AT LEAST 48 HOURS BEFORE PERFORMING ANY WATER RELATED
    WORK. ARRANGE A PRECONSTRUCTION CONFERENCE SPECIFIC TO WATER CONSTRUCTION WITH THE
    CITY ENGINEER AND WATER DEPARTMENT AT LEAST 48 HOURS BEFORE START OF WORK. FOR PROJECTS
    INVOLVING ONLY SERVICE LINE AND/OR METER VAULT INSTALLATION, AN ON-SITE MEETING WITH THE CITY
    ENGINEER 48 HOURS PRIOR TO CONSTRUCTION IS ACCEPTABLE.

11. FOR TEMPORARY USE OF EXISTING WATER SYSTEM AND FIRE HYDRANTS TO OBTAIN CONSTRUCTION
    WATER, REFER TO STANDARD PLAN 531.
12. ALL CONSTRUCTION OF WATER SYSTEM SHALL BE CLEARLY STAKING BY THE DEVELOPER’S OR CONTRACTOR’S SURVEYOR. STAKING SHALL INCLUDE ALL BENDS, VALVES, HYDRANTS, SERVICES, METER VAULTS, AND SPECIALS. A MINIMUM OF 50-FOOT STATIONING IS REQUIRED FOR PIPELINE.
13. CHANGES TO THE APPROVED WATER PLANS, INCLUDING PIPE ALIGNMENT, SIZE, AND DEPTH AS WELL AS FITTINGS, VALVES, SERVICES, AND METER VAULT LOCATIONS SHALL BE AUTHORIZED BY THE CITY ENGINEER PRIOR TO INSTALLATION.
14. WATER SERVICE INTERRUPTION. THE FOLLOWING SHALL BE MET WITH RESPECT TO THE INTERRUPTION OF SERVICE TO CUSTOMERS INCLUDING THE SHUTDOWN OF THE EXISTING WATER SYSTEM:
   a. CONTRACTOR SHALL NOT OPERATE EXISTING WATER VALVES
   b. SCHEDULE SERVICE WORK REQUIRING WATER SERVICE INTERRUPTIONS OR SHUTDOWN OF THE EXISTING WATER SYSTEM A MINIMUM OF 72 HOURS IN ADVANCE WITH THE WATER DEPARTMENT
   c. LIMIT INTERRUPTIONS TO OCCUR AND BE COMPLETED ON MONDAY THRU THURSDAY, 9:00 AM TO 4:00 PM. NO INTERRUPTIONS SHALL OCCUR ON FRIDAYS, WEEKENDS, OR HOLIDAYS.
   d. CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFICATION TO AFFECTED CUSTOMERS. CONTACT THE WATER DEPARTMENT FOR NOTIFICATION REQUIREMENTS. BE ADVISED THAT ON OCCASION VALVES IN THE EXISTING WATER SYSTEM MAY BE INOPERABLE AND MAY REQUIRE NOTIFICATION OF A LARGER AREA. IF VALVE MAINTENANCE IS REQUIRED, A SHUTDOWN DELAY OF SEVERAL DAYS SHOULD BE EXPECTED.
   e. FOR WATER SHUTDOWNS LONGER THAN 4 HOURS, CONTRACTOR SHALL SUBMIT A TEMPORARY WATER PLAN TO KEEP ALL CUSTOMERS IN SERVICE. ALL COSTS ASSOCIATED WITH MAINTAINING SERVICE TO AFFECTED CUSTOMERS SHALL BE BORNE BY THE CONTRACTOR
   f. CONTRACTOR SHALL HAVE ALL PERTINENT PARTS AND MATERIALS ON SITE PRIOR TO SHUTDOWN OF THE WATER SYSTEM BY THE WATER DEPARTMENT
   g. CONSTRUCTION EXCAVATION MUST BE PREPARED AND THE WATER MAIN EXPOSED PRIOR TO SHUTDOWN OF THE WATER SYSTEM
15. EXPOSE EXISTING WATER PIPES AND VERIFY HORIZONTAL AND VERTICAL LOCATION PRIOR TO INSTALLING NEW IMPROVEMENTS
17. IF THE BASIC SEPARATION STANDARDS CANNOT BE MET, AN EXCEPTION TO THE RULE CAN BE APPLIED WITH ADDITIONAL MITIGATION MEASURES TO PROTECT PUBLIC HEALTH, IN ACCORDANCE WITH UTAH ADMINISTRATIVE CODE R309-105-6(2)(B).
18. THE OPEN ENDS OF ALL PIPELINES UNDER CONSTRUCTION SHALL BE COVERED AND EFFECTIVELY SEALED AT THE END OF THE DAY’S WORK,
19. PROVIDE ACCESS TO EXISTING MAIN LINE VALVES THROUGHOUT CONSTRUCTION
20. UNDER NO CIRCUMSTANCE SHALL THE PIPE OR ACCESSORIES BE DROPPED INTO THE TRENCH.
21. WHERE JOINING EXISTING ASPENOS CEMENT PIPE, CUT IN ACCORDANCE WITH OSHA REQUIREMENTS AND DISPOSE OF IN ACCORDANCE WITH APPLICABLE ENVIRONMENTAL REGULATIONS.
22. PROVIDE EXTENSIONS ON VALVE STEM TOPS HAVING OVER 5 FEET BURY. REFER TO STANDARD PLAN 570.
23. INSTALL AIR AND VACUUM VALVES PER STANDARD PLANS 574 AND 575 AT HIGH POINTS (8” DIAMETER PIPE OR LARGER) AS DEEMED NECESSARY BY THE DESIGN ENGINEER AND CITY.
24. THRUST BLOCKING IS REQUIRED ON ALL WATER MAIN AND FIRE LINES. REFER TO STANDARD PLANS 561 AND 562
25. REMOVE AND CORRECT DEFECTIVE WORK WITHIN 24 HOURS FOLLOWING WRITTEN NOTIFICATION BY THE CITY ENGINEER.
26. CONSTRUCT TEMPORARY FLUSHING VALVES/BLOW-OFF PIPING ON THE END OF NEW WATER MAINS AS REQUIRED TO MEET FLUSHING REQUIREMENTS. CONSULT WITH CITY INSPECTOR TO DETERMINE ACCEPTABLE LOCATIONS AND SIZING REQUIREMENTS. MINIMUM ACCEPTABLE FLUSHING VELOCITY FOR INITIAL FLUSH IS 6 FEET PER SECOND. DO NOT PERFORM INITIAL FLUSH THROUGH FIRE HYDRANTS.
27. ALL TYPES OF INSTALLED PIPE SHALL BE PRESSURE TESTED AND LEAKAGE TESTED IN ACCORDANCE WITH AWWA STANDARD C600-10
28. ALL NEW WATER MAINS OR APPURTENANCES SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA STANDARD C651-05 OR A METHOD APPROVED BY THE DIRECTOR. THE SPECIFICATIONS SHALL INCLUDE DETAILED PROCEDURES FOR THE ADEQUATE FLUSHING, DISINFECTION AND MICROBIOLOGICAL TESTING OF ALL WATER MAINS. ON ALL NEW AND EXTENSIVE DISTRIBUTION SYSTEM CONSTRUCTION, EVIDENCE OF SATISFACTORY DISINFECTION SHALL BE PROVIDED TO THE CITY INSPECTOR. SAMPLES FOR COLIFORM
ANALYSES SHALL BE COLLECTED AFTER DISINFECTION IS COMPLETE AND THE SYSTEM IS REFILLED WITH DRINKING WATER. A STANDARD HETEROTROPHIC PLATE COUNT IS ADVISABLE. THE USE OF WATER FOR PUBLIC DRINKING WATER PURPOSES SHALL NOT COMMENCE UNTIL THE BACTERIOLOGICAL TESTS INDICATE THE WATER IS FREE FROM CONTAMINATION.

29. DISINFECTING, FLUSHING, AND HYDROSTATIC PLANS SHALL BE SUBMITTED TO THE CITY INSPECTOR A MINIMUM OF 5 WORKING DAYS PRIOR TO COMMENCEMENT OF ACTIVITY. CONTRACTOR SHALL NOT OPERATE EXISTING WATER VALVES.

30. BACKFLOW PREVENTION DEVICES MAY BE REQUIRED. IF REQUIRED, THE CITY MAY NOT SET A WATER METER UNTIL AN APPROVED AND TESTED BACKFLOW DEVICE IS INSTALLED AND INSPECTED.

31. ALL BACKFLOW PREVENTERS HAVE TO BE TESTED PERIODICALLY TO ENSURE THAT THEY ARE FUNCTIONING PROPERLY. A VISUAL CHECK OF AIR GAPS IS SUFFICIENT, BUT MECHANICAL BACKFLOW PREVENTERS HAVE TO BE TESTED BY A STATE CERTIFIED BACKFLOW SPECIALIST, WITH PROPERLY CALIBRATED GAUGE EQUIPMENT. TO OBTAIN A LIST OF STATE CERTIFIED TESTERS EITHER CALL US OR REFER TO THE STATE OF UTAH WEBSITE PAGE OF BACKFLOW TESTERS.

HTTP://WWW.DRINKINGWATER.UTAH.GOV/DOCUMENTS/compliance/backflow_technicians_commer_avail.pdf

32. FIRE SPRINKLER SYSTEM BOOSTER PUMPS: FIRE SPRINKLER SYSTEM PUMPS, INTEGRAL TO THE FIRE SPRINKLER PIPING, REQUIRED TO MEET FIRE SPRINKLER PRESSURE DESIGN REQUIREMENTS, ARE CONSIDERED OUTSIDE THE INTENT OF UTAH DDW REGULATION R309-550-11(3) AND DO NOT REQUIRE APPROVAL OF THE DDW IF THEIR INSTALLATION CONFORMS TO UTAH ADOPTED PLUMBING CODE AND NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 13 D. FIRE BOOSTER PUMPS SHALL BE INSTALLED ON THE BUILDING SIDE OF THE WATER METER VAULT, OUTSIDE THE VAULT, AND SHALL BE APPROVED BY THE CITY ENGINEER, FIRE MARSHAL, AND BUILDING DEPARTMENT.
NOTES:

1. REFER TO STD. PLAN 511-S FOR LEGEND ITEMS, APPROVED PARTS LIST, AND DETAIL NOTES.
### LEGEND AND APPROVED PARTS LIST

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<th>DESCRIPTION</th>
<th>ACCEPTABLE MANUFACTURER</th>
<th>MODELS</th>
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<tr>
<td>①</td>
<td>FIRE HYDRANT, DRY BARREL, AWWA C502</td>
<td>MUELLER</td>
<td>SUPER CENTURION 250 3-WAY A-423, 5-1/4 PUMPER NOZZLE, NATIONAL STD. OPERATING NUT (OPENS LEFT)</td>
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<td>CLOW</td>
<td>MEDALLION, 5-1/4 PUMPER NOZZLE, NATIONAL STD. OPERATING NUT (OPENS LEFT)</td>
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<td>BURIED VALVE AND VALVE BOX (STD. PLAN 570), 6&quot; GATE VALVE, NRS, FLG X MJ, 2&quot; SQ. OPERATING NUT, AWWA C509</td>
<td>MUELLER</td>
<td>SERIES 2360, SST BONNET BOLTS</td>
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<td>MODEL 2639, SST BONNET BOLTS</td>
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<td>③</td>
<td>6&quot; DUCTILE IRON FLANGE TEE, AWWA C110</td>
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<td>HYDRANT SERVICE LINE, 6&quot; DIAMETER DUCTILE IRON PIPE, RESTRAINED JOINTS (STD PLAN 540)</td>
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<td>EBBA IRON</td>
<td>MEGALUG SERIES 1100, STD T-BOLTS AND NUTS</td>
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<td>⑥</td>
<td>HYDRANT MARKER, HEAVY DUTY FIBERGLASS WITH RED FLAG, TOP MOUNT, 5' LENGTH (STD.), 6' LENGTH (ABOVE 7300' ELEVATION)</td>
<td>POLLARD</td>
<td>REFLECTIVE HYDRANT MARKER MODEL P69161 (STD.) AND P69170 (ABOVE 7300') WITH FLAG MODEL P691801, OR APPROVED EQUAL</td>
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<td>⑦</td>
<td>POLYETHYLENE ENCASEMENT, HIGH DENSITY CROSS LAMINATED (HDCL) POLYETHYLENE FILM, AWWA C105 &amp; AWWA C703E METHOD A &amp; C</td>
<td>CHRISTY’S OR APPROVED EQUAL</td>
<td>AWWA C703E METHOD A (4 MIL) AT PIPE AND AWWA C703E METHOD C (10 MIL) AT BOLT-TYPE JOINTS, FITTINGS AND VALVES</td>
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### DETAIL NOTES

1. LOCATE HYDRANT AS SHOWN ON THE APPROVED PLANS
2. SET HYDRANT PLUMB WITH PUMPER NOZZLE FACING STREET
3. ADJUST TO GRADE WITH MAXIMUM OF ONE (1) HYDRANT BARREL EXTENSION (AWWA C502)
4. PROVIDE 316 STAINLESS STEEL BOLTS AND NUTS WITH ANTI-SIEZE LUBRICATION ON ALL FLANGED CONNECTIONS
5. RECOAT DAMAGED OR MARRED HYDRANT COATING AFTER INSTALLATION (UV RESISTANT, HIGH GLOSS, POLYURETHANE ENAMEL COATING, FIRE HYDRANT RED)
6. REFER TO SPECIFICATIONS FOR FLUSHING, HYDROSTATIC TESTING, AND DISINFECTING REQUIREMENTS
7. APPLY WAX TAPE COATING SYSTEM TO VALVE BONNET BOLTS AND ALL OTHER BURIED BOLTS, NUTS, CONNECTORS, AND COUPLINGS, AWWA C 217. (STD PLAN 534)
8. CATHODICALLY PROTECT PIPE AND OR FITTINGS, WHEN EXISTING SOIL CONDITIONS REQUIRE PER SOILS ANALYSIS (STD. PLAN 534)
9. HYDRANT DRAINS SHALL NOT BE CONNECTED TO, OR LOCATED WITHIN, 10 FEET OF SANITARY SEWERS. WHERE POSSIBLE, HYDRANT DRAINS SHALL NOT BE LOCATED WITHIN 10 FEET OF STORM DRAINS.
GENERAL REQUIREMENTS –
WATER METER, METER VAULT, AND SERVICE LINE

REFER TO SPECIFICATIONS AND STANDARD PLANS FOR DETAILED WATER METER, METER VAULT, AND SERVICE LINE REQUIREMENTS

WATER METER & METER VAULT:

1. WATER METER AND RADIOREAD METER TRANSCEIVER UNIT (MXU) WILL BE PROVIDED BY THE CITY. ALL OTHER COMPONENTS SHALL BE PROVIDED AND INSTALLED BY THE DEVELOPER/BUILDER. PROVIDE 2 WEEKS ADVANCE NOTICE TO THE WATER DEPARTMENT FOR METER SET REQUESTS EXCEEDING FIVE METERS OR METER SIZES GREATER THAN 2 INCHES. APPROPRIATE METER APPLICATION AND PAYMENT OF FEES APPLY BEFORE THE CITY WILL SET A METER.

2. WATER METER SIZE SHALL BE APPROVED BY THE CITY ENGINEER PRIOR TO INSTALLATION OF ANY SERVICE LINE, METER VAULT, OR WATER MAIN TAP.

3. INSTALLATION OF A WATER METER EXCEEDING 2-INCH WILL REQUIRE CITY ENGINEER APPROVAL. THE METER AND VAULT WILL REQUIRE A FLOWRATE AND DEMAND ANALYSIS BY THE DEVELOPER / BUILDER AND A SITE SPECIFIC DESIGN.

4. INSTALLATION OF A WATER SERVICE LINE SIZE GREATER THAN 1-1/2" WILL REQUIRE CITY ENGINEER APPROVAL. THE SERVICE LINE UPGRADE REQUEST WILL REQUIRE SUBMITTAL OF A FLOWRATE AND DEMAND ANALYSIS BY THE DEVELOPER/BUILDER.

5. USE OF AN INSIDE WATER METER WILL REQUIRE CITY ENGINEER APPROVAL. INSIDE METERS SHALL BE USED ONLY FOR COMMERCIAL OR MULTI-UNIT BUILDINGS SUBJECT TO THE FOLLOWING CONDITIONS:
   A. UNRESTRICTED ACCESS IS AVAILABLE TO WATER DEPARTMENT PERSONNEL
   B. THE METER SHALL BE LOCATED IN A SEPARATE MECHANICAL ROOM
   C. THE METER SHALL BE ASSOCIATED WITH FIRE PROTECTION SPRINKLER SYSTEM (FIRE STACK) PLUMBING
   D. THE METER REQUIRES A SITE SPECIFIC DESIGN APPROVED BY THE FIRE MARSHAL, THE PARK CITY BUILDING DEPARTMENT, AND THE WATER DEPARTMENT. LAYOUT SHALL BE CONSISTENT WITH WATER STANDARD PLANS 523, 526, AND 528
   E. A REMOTE RADIOREAD METER TRANSCEIVER UNIT (MXU) DEVICE SHALL BE INSTALLED AT A LOCATION ACCEPTABLE TO THE WATER DEPARTMENT. REFER TO NOTE 11.

6. METER VAULT LOCATION SHALL BE APPROVED BY THE CITY ENGINEER AND WATER DEPARTMENT PRIOR TO INSTALLATION OF ANY SERVICE LINE OR WATER MAIN TAP.

7. LOCATE METER VAULT, WHENEVER POSSIBLE, IN LANDSCAPE AREAS. PLACEMENT WITHIN A PAVED SURFACE, DRIVEWAY OR WALKWAY, REQUIRES WRITTEN APPROVAL PRIOR TO INSTALLATION OF THE SERVICE LINE OR WATER MAIN TAP. THE METER VAULT SHALL BE PLACED AT THE PUBLIC RIGHT OF WAY LINE. IN THE ABSENCE OF A PUBLIC R-O-W LINE, THE METER VAULT SHALL BE LOCATED WITHIN A DEDICATED EASEMENT AND A MAXIMUM OF FIVE FEET BEHIND THE CURB AND GUTTER OR SIDEWALK AS APPLICABLE.

8. EXTEND THE SERVICE LINE STUB ON THE CUSTOMER SIDE TO 5 FEET BEYOND THE METER VAULT WITH METER VAULT CONSTRUCTION. INSTALL END CAP AND MARKER ON SERVICE LINE TERMINATION.

9. LOCATE METER VAULT TO PROVIDE CONVENIENT, SAFE, AND UNINHIBITED ACCESS FROM A PUBLIC ROW OR WATER EASEMENT. NO FENCES SHALL BE LOCATED BETWEEN THE ROW/EASEMENT LINE AND THE METER VAULT. NO OBSTRUCTIONS OR UTILITIES SHALL BE LOCATED WITHIN 3 FEET OF THE OUTSIDE WALL OF THE METER VAULT. NO BUSHES, SHRUBS, OR PLANTS SHALL BE WITHIN 2 FEET OF THE METER LID AND NO TREES SHALL BE PLANTED SUCH THAT THE DRIP LINE AT MATURITY WILL BE WITHIN 3 FEET OF THE METER LID.

10. SET METER VAULT SET FLUSH WITH THE FINAL LANDSCAPE OR PAVEMENT GRADE. IF THE GROUND IS NOT TO FINAL GRADE AT THE TIME OF THE METER INSTALLATION OR INSPECTION, ADJUST METER VAULT WHEN FINAL GRADE IS ESTABLISHED AND ADJUST THE METER SETTER TO MEET REQUIRED VAULT DIMENSIONS. REFERENCE STANDARD PLANS 592 AND 593 FOR METER VAULT GRADING REQUIREMENTS.
11. IN MOST CASES THE METER TRANSCEIVER UNIT (MXU) DEVICE WILL MOUNT THROUGH THE METER VAULT LID. IF METER LOCATION DOES NOT PERMIT A CLEAR RELIABLE MXU DEVICE RADIO SIGNAL TO CITY FACILITIES, A REMOTE MXU DEVICE WILL BE REQUIRED. THE REMOTE MXU DEVICE WILL BE INSTALLED BY THE CITY, AT A LOCATION DETERMINED BY THE CITY, AT THE TIME OF THE METER INSPECTION. IN MOST CASES THE REMOTE MXU DEVICE WILL BE INSTALLED ON THE OUTSIDE OF THE BUILDING FACING A PUBLIC STREET. PROVIDE CONDUIT AND SIGNAL WIRE FROM METER VAULT TO REMOTE MXU DEVICE LOCATION. REFERENCE STANDARD PLAN 530. FOR DEVELOPMENT PROJECTS, A SIGNAL PROPAGATION STUDY AND INSTALLATION OF A NEW REPEATER STATION AT THE DEVELOPER’S EXPENSE MAY BE REQUIRED.

12. IF REPLACING METER VAULT, PROTECT EXISTING METER AND MXU DEVICE, TAG OR LEAVE IN VAULT. CONTACT PARK CITY WATER DEPARTMENT PRIOR TO REMOVING OR REPLACING METER.

13. PROTECT METER VAULT AND MXU DEVICE THROUGHOUT CONSTRUCTION.

14. A WATER METER WILL NOT BE SET BY THE CITY UNTIL THE METER VAULT AND SERVICE LINE ARE IN COMPLIANCE WITH THE MOST CURRENT VERSION OF THE ENGINEERING STANDARDS, STANDARD DRAWINGS, AND APPROVED PROJECT DRAWINGS, A METER INSPECTION HAS BEEN PERFORMED AND DEFICIENCIES CORRECTED, AND ALL APPLICABLE FEES PAID.

15. ALL BRASS AND BRONZE PIPE, FITTINGS, AND VALVES SHALL MEET LOW LEAD COMPLIANCE REQUIREMENTS IN ACCORDANCE WITH ANSI/ASTM 371.

16. PROVIDE COMPRESSION STYLE FITTINGS AND VALVES. FLARED STYLE CONNECTIONS ARE NOT ALLOWED.

SERVICE LINE:

1. ROUTE SERVICE LINES AT A 90 DEGREE ANGLE TO THE FRONT PROPERTY/R-O-W/EASEMENT LINE FROM THE WATER MAIN. AVOID ROUTING SERVICE LINES UNDER DRIVEWAYS.

2. MAINTAIN 5 FEET OF HORIZONTAL SEPARATION BETWEEN TAP LOCATION AND UTILITY CROSSINGS.

3. DUCTILE IRON WATER MAIN: MAINTAIN 2 FEET SEPARATION BETWEEN SERVICE LINE TAP AND ALL MAIN LINE FITTINGS, VALVES, PIPE JOINTS, AND OTHER SERVICE TAPS.

4. PVC WATER MAIN: MAINTAIN 3 FEET SEPARATION BETWEEN SERVICE LINE TAP AND ALL MAIN LINE FITTINGS, VALVES, PIPE JOINTS, AND OTHER SERVICE TAPS.

5. WATER SERVICE LINE SHALL BE CONTINUOUS. NO BENDS, FITTINGS, COUPLERS, OR CONNECTIONS, ARE PERMITTED BETWEEN WATER MAIN CORPORATION STOP AND THE METER VAULT CURB VALVE.

6. PROVIDE COMPRESSION STYLE VALVES FITTINGS. FLARED STYLE CONNECTIONS ARE NOT ALLOWED.

7. METER VAULTS AND SERVICE LINES MUST BE INSPECTED BY THE CITY PRIOR TO BACKFILLING, UNLESS SPECIFIC PRIOR APPROVAL IS PROVIDED BY THE CITY.

8. TAPPING NEW CONSTRUCTION WATER MAIN: NOTIFY AND SECURE INSPECTION OF INSTALLATION BY CITY ENGINEER PRIOR TO TAPPING WATER MAIN. PROVIDE TAPPING “COUPON” TO CITY INSPECTOR.

9. TAPPING EXISTING WATER MAIN: NOTIFY AND SECURE INSPECTION OF INSTALLATION BY WATER DEPARTMENT 48 HOURS PRIOR TO TAPPING WATER MAIN. PROVIDE TAPPING “COUPON” TO CITY INSPECTOR.

10. SERVICES LINES LARGER THAN 2-INCH DIAMETER SHALL MEET WATER MAIN REQUIREMENTS.

11. ALL BRASS AND BRONZE PIPE, FITTINGS, AND VALVES SHALL MEET LOW LEAD COMPLIANCE REQUIREMENTS IN ACCORDANCE WITH ANSI/ASTM 371.

12. DISINFECT ALL NEW WATER SERVICES AND APPURTEYNANCES IN ACCORDANCE WITH AWWA STANDARD C651-05, THE SPECIAL REQUIREMENTS OF THE PARK CITY DESIGN STANDARDS, CONSTRUCTION SPECIFICATIONS, AND STANDARD DETAILS, AND THE PARK CITY WATER SYSTEM FIELD OBSERVATION GUIDELINES. DISINFECTING, FLUSHING, AND HYDROSTATIC PLANS SHALL BE SUBMITTED TO THE CITY INSPECTOR A MINIMUM OF 5 WORKING DAYS PRIOR TO COMMENCEMENT OF ACTIVITY. CONTRACTOR SHALL NOT OPERATE EXISTING WATER VALVES.
METER VAULT ADJUSTMENT AND GRADING (STD. PLAN 592 & 593)

ROTATE TOP 90° TO YOKE

COMPACT SOIL AROUND METER BOX, 95% MAX DENSITY

3/4" TO 1 1/2" CLEAN GRAVEL

NO LOAD BEARING ON LINE, PROVIDE DOGHOUSE BLOCK OUT (TYP.), 1" CLR. MIN

WATER MAIN SIDE

SERVICE LINE 1 1/2" (STD. PLAN 541)

SAND: 6" MIN. ON EITHER SIDE OF SERVICE LINE

NOTES:
1. REFER TO STD. PLAN 520 FOR GENERAL REQUIREMENTS - METER, METER VAULT, AND SERVICE LINE.
2. REFER TO STD. PLAN 521 S FOR LEGEND ITEMS, APPROVED PARTS LIST, AND DETAIL NOTES.
# LEGEND AND APPROVED PARTS LIST

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>ACCEPTABLE MANUFACTURER</th>
<th>MODELS</th>
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<tbody>
<tr>
<td>①</td>
<td>METER VAULT FRAME AND COVER (STD. PLAN 529)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>②</td>
<td>MXU REMOTE LOCATION CONDUIT WITH END CAPS, SCH 40 PVC (STD. PLAN 530)</td>
<td></td>
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</tr>
<tr>
<td>③</td>
<td>24” DIAMETER METER VAULT PAVED AREAS: REINF. CONCRETE PIPE LANDSCAPE AREAS: RCP ASTM C76 OR CORRUGATED DUAL-WALL HDPE PIPE</td>
<td>HDPE PIPE: ADS</td>
<td>RCP: ASTM C 76 CLASS III; HDPE: MEGA GREEN N-12, OR APPROVED EQUAL</td>
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<tr>
<td>④</td>
<td>METER, SUPPLIED AND INSTALLED BY PCMC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>⑤</td>
<td>3/4” METER YOKE</td>
<td>MUELLER</td>
<td>5/8”x3/4”x9” B2410N-6AN</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FORD</td>
<td>5/8”x3/4” VBHC82-9W-11-33-NL</td>
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<tr>
<td>⑥</td>
<td>1” METER YOKE</td>
<td>MUELLER</td>
<td>1”x12” B2410N-6AN</td>
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<tr>
<td></td>
<td></td>
<td>FORD</td>
<td>1” VBHC84-12W-11-44-NL</td>
</tr>
<tr>
<td>⑦</td>
<td>3/4” OR 1” METER YOKE END CONNECTION</td>
<td>MUELLER</td>
<td>MULTI X M.I.P, H-14223N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FORD</td>
<td>3/4” OR 1” CLOSE BRASS NIPPLE</td>
</tr>
<tr>
<td>⑧</td>
<td>1 1/2” X 3/4” OR 1” BRONZE BUSHING</td>
<td>MUELLER</td>
<td>B-25172N</td>
</tr>
<tr>
<td>⑨</td>
<td>1 1/2” CURB VALVE, F.I.P. X CTS (INLET)</td>
<td>MUELLER</td>
<td>H-15451N</td>
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<tr>
<td></td>
<td></td>
<td>FORD</td>
<td>C-14-66-G-NL</td>
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<tr>
<td>⑩</td>
<td>1 1/2” CONNECTION, F.I.P. X CTS (OUTLET)</td>
<td>MUELLER</td>
<td>H-15451N AND H-10035N</td>
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<tr>
<td>⑪</td>
<td>MXU AND WIRING, SUPPLIED AND INSTALLED BY PCMC</td>
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</table>

## DETAIL NOTES

1. LOCATE METER VAULT PER APPROVED PLANS AND SET METER BOX PLUMB
2. SST INSERT STIFFENERS REQUIRED ON ALL CTS TUBING CONNECTIONS
NOTES:
1. REFER TO STD. PLAN 520 FOR GENERAL REQUIREMENTS - METER, METER VAULT, AND SERVICE LINE.
2. REFER TO STD. PLAN 522 S FOR LEGEND ITEMS, APPROVED PARTS LIST, AND DETAIL NOTES.

FLOW

12"-18"

PLAN

METER VAULT ADJUSTMENT AND GRADING (STD PLAN 592 & 593)

SERVICE LINE TRACER WIRE, TERMINATE AT UPPER STEP

NO LOAD ALLOWED 1" MIN CLR. (TYP)

1 1/2" SERVICE LINE MAIN SIDE (STD. PLAN 541)

3/4" TO 1-1/2" GRAVEL

SECTION

3/4" AND 1" DUAL METERS
OUTSIDE SETTING

DATE
05/2014

STD. PLAN
522
### LEGEND AND APPROVED PARTS LIST

<table>
<thead>
<tr>
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<th>ACCEPTABLE MANUFACTURER</th>
<th>MODELS</th>
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<tbody>
<tr>
<td>①</td>
<td>4' DIA. MANHOLE, PRECAST CONCRETE ECCENTRIC CONE AND WALL SECTIONS</td>
<td>ASTM C 478</td>
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</tr>
<tr>
<td>②</td>
<td>METER VAULT FRAME AND COVER (STD PLAN 529)</td>
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<tr>
<td>③</td>
<td>POLYPROPYLENE ENCASED GRADE 60 STEEL STEPS AT 13° C-C, 13-1/2” TREAD WIDTH</td>
<td>M.A. INDUSTRIES OR APP’D EQUAL</td>
<td></td>
</tr>
<tr>
<td>④</td>
<td>1-1/2” CURB VALVE</td>
<td>MUeller</td>
<td></td>
</tr>
<tr>
<td>⑤</td>
<td>1-1/2” DIA. BRASS NIPPLE X 6” LENGTH, M.I.P.</td>
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<tr>
<td>⑥</td>
<td>1-1/2” DIA. BRONZE TEE, F.I.P., THREADED</td>
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</tr>
<tr>
<td>⑦</td>
<td>1-1/2” BRONZE 90° ELBOW, F.I.P., THREADED (2 EA)</td>
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<td>1-1/2” BRASS NIPPLE X 4” LENGTH, M.I.P. (2 EA)</td>
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<tr>
<td>⑨</td>
<td>BRONZE BELL REDUCER REQ’D (2 EA)</td>
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<tr>
<td>⑩</td>
<td>3/4” YOKE: 1-1/2” X 3/4” 1” YOKE: 1-1/2” X 1” DIA.</td>
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</tr>
<tr>
<td>⑪</td>
<td>3/4” METER YOKE (2 EA)</td>
<td>MUeller</td>
<td></td>
</tr>
<tr>
<td>⑫</td>
<td>1” METER YOKE (2 EA)</td>
<td>MUeller</td>
<td></td>
</tr>
<tr>
<td>⑬</td>
<td>3/4” OR 1” METER YOKE END CONNECTIONS (2 EA)</td>
<td>MUeller</td>
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<tr>
<td>⑭</td>
<td>1-1/2” x 3/4” OR 1” BRONZE BUSHING (OUTLET) (2 EA)</td>
<td>MUeller</td>
<td></td>
</tr>
<tr>
<td>⑮</td>
<td>1-1/2” CONNECTION, F.I.P. X CTS (OUTLET) (2 EA)</td>
<td>MUeller</td>
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</tr>
<tr>
<td>⑯</td>
<td>METER, SUPPLIED AND INSTALLED BY PCMC (2 EA)</td>
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<tr>
<td>⑰</td>
<td>PIPE SUPPORTS, GALVANIZED PIPE SUPPORT ROD AND (2) 16”x8”x8” CMU BLOCK</td>
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<td>MXU AND WIRING, SUPPLIED AND INSTALLED BY PCMC</td>
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<tr>
<td>⑲</td>
<td>MXU REMOTE LOCATION CONDUIT WITH END CAPS, SCH 40 PVC (STD. PLAN 531)</td>
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<td>⑳</td>
<td>END CAP AND MARKER, CTS X F.I.P. (OUTLET) (2 EA)</td>
<td>MUeller</td>
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</tbody>
</table>

### DETAIL NOTES
1. LOCATE METER VAULT PER APPROVED PLANS AND SET METER BOX PLUMB
2. SST INSERT STIFFENERS REQUIRED ON ALL CTS TUBING CONNECTIONS

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**PARK CITY MUNICIPAL CORPORATION**

**WATER**

**DATE**

4/2014

**REV.**

**3/4” and 1” DUAL METER OUTSIDE SETTING**

**STD. PLAN**

522 S
NOTES:
1. REFER TO STD. PLAN 520 FOR GENERAL REQUIREMENTS - METER, METER VAULT, AND SERVICE LINE.
2. REFER TO STD. PLAN 523 S FOR LEGEND ITEMS, APPROVED PARTS LIST, AND DETAIL NOTES.
# LEGEND AND APPROVED PARTS LIST

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>①</td>
<td>1” BRONZE SERVICE SADDLE, DOUBLE STRAP</td>
<td>MUELLER</td>
<td>BR2B SERIES, CC THREADS</td>
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<tr>
<td></td>
<td></td>
<td>FORD</td>
<td>STYLE 202B, CC THREADS</td>
</tr>
<tr>
<td>②</td>
<td>1” DIA. BRASS NIPPLE x 2” LENGTH, M.I.P.</td>
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</tr>
<tr>
<td>③</td>
<td>1” CURB VALVE, F.I.P. X F.I.P.</td>
<td>MUELLER</td>
<td>B-20283N</td>
</tr>
<tr>
<td>④</td>
<td>1” DIA. BRASS NIPPLE x 2” LENGTH, M.I.P. AND BRONZE BELL REDUCER, 1” X 3/4” DIA. (REQ'D FOR 3/4” METER YOKE ONLY)</td>
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<tr>
<td>⑤</td>
<td>3/4” OR 1” DIA. COPPER PIPING AND FITTINGS, AS REQ’D PER SITE SPECIFIC LAYOUT</td>
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<tr>
<td>⑥</td>
<td>3/4” OR 1” METER YOKE END CONNECTIONS</td>
<td>MUELLER</td>
<td>MULTI X F.I.P, H-14222N</td>
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<tr>
<td></td>
<td>3/4” METER YOKE (STRAIGHT LINE INLET AND OUTLET)</td>
<td>MUELLER</td>
<td>5/8”x3/4”x7” B-2418-6AN</td>
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<td></td>
<td>3/4” METER YOKE (VERTICAL INLET AND OUTLET)</td>
<td>MUELLER</td>
<td>5/8”x3/4”x10” B-2448-6AN</td>
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<td>1” METER YOKE (STRAIGHT LINE INLET AND OUTLET)</td>
<td>MUELLER</td>
<td>1” VBHC84-12W-11-44-NL</td>
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<td>1” METER YOKE (VERTICAL INLET AND OUTLET)</td>
<td>MUELLER</td>
<td>1”x12” B-2448-6AN</td>
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<tr>
<td></td>
<td>METER, SUPPLIED AND INSTALLED BY PCMC</td>
<td>FORD</td>
<td>1” KHVBHC-4-FP-NL</td>
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<tr>
<td>⑨</td>
<td>PIPE SIZE BRASS NIPPLE AND CURB VALVE, F.I.P. X F.I.P.</td>
<td>MUELLER</td>
<td>B-20283N</td>
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<tr>
<td>⑩</td>
<td>MXU AND WIRING, SUPPLIED AND INSTALLED BY PCMC</td>
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<tr>
<td>⑪</td>
<td>EMT CONDUIT FOR MXU WIRING, AS REQUIRED</td>
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**DATE:** 5/2014  
**REV.:** 0  
**STD. PLAN:** 523 S.1

# PARK CITY MUNICIPAL CORPORATION  
**WATER**  

---
**DETAIL NOTES**

1. **USE OF AN INSIDE WATER METER** REQUIRES CITY ENGINEER APPROVAL. REFERENCE WATER STANDARD PLAN 520 FOR APPLICABLE CONDITIONS.

2. **FIRE SPRINKLER RISER WITH POTABLE WATER SERVICE:** A SITE SPECIFIC DESIGN IS REQUIRED. THE FIRE PROTECTION SPRINKLER SYSTEM AND POTABLE WATER SYSTEM DESIGN SHALL BE APPROVED BY THE FIRE MARSHAL AND THE PARK CITY BUILDING DEPARTMENT. THE POTABLE WATER SERVICE CONNECTION AND METER ASSEMBLY DESIGN SHALL BE APPROVED BY THE PARK CITY BUILDING DEPARTMENT AND THE CITY ENGINEER. DESIGN AND CONSTRUCTION SHALL COMPLY WITH APPLICABLE BUILDING AND PLUMBING CODES.

3. **BACKFLOW PREVENTION:** PROVIDE A DOUBLE CHECK BACKFLOW ASSEMBLY (DCBA) OR REDUCED PRESSURE PRINCIPLE BACKFLOW ASSEMBLY (RPBA) ON THE FIRE SPRINKLER RISER ASSEMBLY. STYLE TO BE DETERMINED BY THE BUILDING AND WATER DEPARTMENT BASED ON DEGREE OF HAZARD POSED BY FIRE SPRINKLER PROTECTION SYSTEM. BEFORE A CERTIFICATE OF OCCUPANCY CAN BE ISSUED BY THE BUILDING DEPARTMENT, BACKFLOW ASSEMBLY TESTING FOR PROPER OPERATION (PER CITY REQUIREMENTS BY A CERTIFIED TESTER RECOGNIZED BY THE CITY) IS REQUIRED AND A REPORT SUBMITTED.

4. **CONNECTIONS TO THE WATER SYSTEM ARE NOT PERMITTED PRIOR TO THE POTABLE WATER METER ASSEMBLY OR THE FIRE SPRINKLER RISER BACKFLOW ASSEMBLY. THIS INCLUDES OUTSIDE IRRIGATION SUPPLY.**

5. **CLEARANCES:** PROVIDE ADEQUATE CLEARANCES FROM FIRE RISER AND AROUND WATER METER ASSEMBLY. MAINTAIN: 9” MINIMUM FROM WALL TO FACE OF POTABLE WATER PIPING 18” CLEAR ON EACH SIDE OF METER ASSEMBLY 36” CLEAR IN FRONT OF METER ASSEMBLY

6. **LOCATE METER ASSEMBLY TWO (2) TO FOUR (4) FEET ABOVE THE FLOOR. POSITION METER HORIZONTAL WITH DIAL POINTING UP.**

7. **PROVIDE ISOLATION (CURB) VALVES AT METER INLET AND OUTLET**

8. **FOR MULTIPLE METERS PROVIDE A MANIFOLD WITH A MAIN CURB VALVE PRIOR TO THE MANIFOLD AND INDIVIDUAL CURB VALVES LOCATED PRIOR TO AND AFTER METERS.**

9. **PROVIDE A FLOOR DRAIN IN THE FIRE RISER ROOM WITHIN 10 FEET OF THE WATER METER LOCATION.**


11. **PROVIDE PIPE ANCHORAGE TO SUPPORT METER YOKE AND ASSEMBLY INDEPENDENT OF THE POTABLE WATER SUPPLY PIPING AND BUILDING PLUMBING. PROVIDE PIPE STANDS OR UNISTRUT WALL STANDOFFS. DO NOT SUPPORT METER ASSEMBLY FROM OTHER PIPING.**

12. **PROVIDE A WALL PENETRATION AND CONDUIT FOR REMOTE RADIOREAD METER TRANSEIVER UNIT (MXU) DEVICE(S). COORDINATE ROUTING AND WALL PENETRATION LOCATION WITH THE WATER DEPARTMENT. REFERENCE WATER STANDARD PLANS 520 AND 530.**

13. **PROVIDE 1/2” EMT CONDUIT AND SUPPORTS FOR MXU SIGNAL WIRE IF DISTANCE TO WALL PENETRATION EXCEEDS 10 FEET**

14. **INSPECTION:** CONTACT THE CITY ENGINEER FOR INSPECTION OF THE POTABLE WATER SYSTEM METER ASSEMBLY INSTALLATION

15. **REFER TO STD. PLAN 500 AND THE SPECIFICATIONS FOR FLUSHING, HYDROSTATIC TESTING, AND DISINFECTING REQUIREMENTS**
NOTES:
1. REFER TO STD. PLAN 520 FOR GENERAL REQUIREMENTS - METER, METER VAULT, AND SERVICE LINE.
2. REFER TO STD. PLAN 524 S FOR LEGEND ITEMS, APPROVED PARTS LIST, AND DETAIL NOTES.

1-1/2" AND 2" SINGLE METER
OUTSIDE SETTING

PARK CITY MUNICIPAL CORPORATION
WATER

DATE  05/2014  STD. PLAN  524
REV.  0
## LEGEND AND APPROVED PARTS LIST

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<td>5' DIA. MANHOLE, PRECAST CONCRETE ECCENTRIC CONE AND WALL SECTIONS</td>
<td>ASTM C 478</td>
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<td>②</td>
<td>METER VAULT FRAME AND COVER (STD. PLAN 529)</td>
<td>M.A. INDUSTRIES OR APPV'D EQ.</td>
<td>PS2-PFDF</td>
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<td>③</td>
<td>POLYPROPYLENE ENCASED GRADE 60 STEEL STEPS AT 13’ C-C, 13-1/2” TREAD WIDTH</td>
<td>M.A. INDUSTRIES OR APPV'D EQ.</td>
<td>PS2-PFDF</td>
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<td>2” CURB VALVE, F.I.P. x CTS</td>
<td>MUELLER</td>
<td>B-25172N</td>
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<td>2” DIA. BRASS NIPPLE x 4” LENGTH, M.I.P.</td>
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<td>2” BRONZE UNION, F.I.P., THREADED</td>
<td>MUELLER</td>
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<tr>
<td>⑦</td>
<td>1-1/2” BRASS NIPPLE x 4” LENGTH, 2” x 1-1/2” BRONZE BELL REDUCER, AND 1-1/2” CLOSE BRASS NIPPLE (1-1/2” YOKE ONLY)</td>
<td>MUELLER</td>
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<tr>
<td>⑧</td>
<td>1-1/2” METER YOKE</td>
<td>MUELLER</td>
<td>1-1/2”x15” B2423-2-01N (WITH BYPASS)</td>
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<td>COMMERCIAL SERVICE: WITH BYPASS</td>
<td>FORD</td>
<td>1-1/2”x15” B2422-2N (WITHOUT BYPASS)</td>
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<td>RESIDENTIAL SERVICE: WITHOUT BYPASS</td>
<td>MUELLER</td>
<td>2”x15” B2423-2-01N (WITH BYPASS)</td>
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<td>IRRIGATION SERVICE: WITHOUT BYPASS</td>
<td>FORD</td>
<td>2”x15” B2422-2N (WITHOUT BYPASS)</td>
</tr>
<tr>
<td>⑨</td>
<td>2” METER YOKE</td>
<td>MUELLER</td>
<td>2”x15” B2423-2-01N (WITH BYPASS)</td>
</tr>
<tr>
<td></td>
<td>COMMERCIAL SERVICE: WITH BYPASS</td>
<td>FORD</td>
<td>2”x15” B2422-2N (WITHOUT BYPASS)</td>
</tr>
<tr>
<td></td>
<td>RESIDENTIAL SERVICE: WITHOUT BYPASS</td>
<td>MUELLER</td>
<td>2”x15” B2423-2-01N (WITH BYPASS)</td>
</tr>
<tr>
<td></td>
<td>IRRIGATION SERVICE: WITHOUT BYPASS</td>
<td>FORD</td>
<td>2”x15” B2422-2N (WITHOUT BYPASS)</td>
</tr>
<tr>
<td>⑩</td>
<td>2” CONNECTION, F.I.P. x CTS AND 2” BRASS NIPPLE x 4” LENGTH (OUTLET); 1-1/2” YOKE ONLY: ADD 2”x1-1/2” BRONZE BELL REDUCER AND 1-1/2” CLOSE BRASS NIPPLE</td>
<td>MUELLER</td>
<td>H-15451N</td>
</tr>
<tr>
<td>⑪</td>
<td>METER, SUPPLIED AND INSTALLED BY PCMC</td>
<td>MUELLER</td>
<td>H-15451N AND H-10035N</td>
</tr>
<tr>
<td>⑫</td>
<td>PIPE SUPPORTS (4) 16”x8”x8” CMU BLOCK, (2) METER SUPPORT RODS, GALVANIZED</td>
<td>MUELLER</td>
<td>H-15451N AND H-10035N</td>
</tr>
<tr>
<td>⑬</td>
<td>MXU AND WIRING, SUPPLIED AND INSTALLED BY PCMC</td>
<td>MUELLER</td>
<td>H-15451N AND H-10035N</td>
</tr>
<tr>
<td>⑭</td>
<td>MXU REMOTE LOCATION CONDUIT WITH END CAPS, SCH 40 PVC (STD. PLAN 531)</td>
<td>MUELLER</td>
<td>H-15451N AND H-10035N</td>
</tr>
<tr>
<td>⑮</td>
<td>END CAP AND MARKER, CTS x F.I.P. (OUTLET)</td>
<td>MUELLER</td>
<td>H-15451N AND H-10035N</td>
</tr>
</tbody>
</table>

### DETAIL NOTES

1. LOCATE METER VAULT PER APPROVED PLANS AND SET METER BOX PLUMB
2. SST INSERT STIFFENERS REQUIRED ON ALL CTS TUBING CONNECTIONS
NOTES:
1. REFER TO STD. PLAN 520 FOR GENERAL REQUIREMENTS - METER, METER VAULT, AND SERVICE LINE.
2. REFER TO STD. PLAN 525 S FOR LEGEND ITEMS, APPROVED PARTS LIST, AND DETAIL NOTES.
# LEGEND AND APPROVED PARTS LIST

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>ACCEPTABLE MANUFACTURER</th>
<th>MODELS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5' DIA. MANHOLE, PRECAST CONCRETE ECCENTRIC CONE AND WALL SECTIONS</td>
<td>ASTM C 478</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>METER VAULT FRAME AND COVER (STD. PLAN 529)</td>
<td>M.A. INDUSTRIES OR APPV'D EQ.</td>
<td>PS2-PFDF</td>
</tr>
<tr>
<td>3</td>
<td>POLYPROPYLENE ENCASED GRADE 60 STEEL STEPS AT 13' C-C, 13-1/2' TREAD WIDTH</td>
<td>M.A. INDUSTRIES OR APPV'D EQ.</td>
<td>PS2-PFDF</td>
</tr>
<tr>
<td>4</td>
<td>2&quot; CURB VALVE, F.I.P. x CTS</td>
<td>MUELLER</td>
<td>B-25172N</td>
</tr>
<tr>
<td>5</td>
<td>2&quot; DIA. BRASS NIPPLE x 3&quot; LENGTH, M.I.P. (5 EA)</td>
<td>MUELLER</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>2&quot; DIA. BRONZE TEE, F.I.P., THREADED</td>
<td>MUELLER</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>2&quot; BRONZE 90° ELBOW, F.I.P., THREADED (2 EA)</td>
<td>MUELLER</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>2&quot; BRONZE UNION, F.I.P., THREADED (2 EA)</td>
<td>MUELLER</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>1-1/2&quot; BRASS NIPPLE x 4&quot; LENGTH, 2&quot; x 1-1/2&quot; BRONZE BELL REDUCER, AND 1-1/2&quot; CLOSE BRASS NIPPLE (2 EA)</td>
<td>MUELLER</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>1-1/2&quot; METER YOKE (2 EA) COMMERCIAL SERVICE: WITH BYPASS RESIDENTIAL SERVICE: WITHOUT BYPASS IRRIGATION SERVICE: WITHOUT BYPASS</td>
<td>MUELLER</td>
<td>1-1/2&quot;x15&quot; B2423-2-01N (WITH BYPASS) 1-1/2&quot;x15&quot; B2422N (WITHOUT BYPASS)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FORD</td>
<td>1-1/2&quot; VBHH76-15B-11-66-NL (WITH BYPASS) 1-1/2&quot; VBHH76-15-11-66-NL (WITHOUT BYPASS)</td>
</tr>
<tr>
<td>11</td>
<td>2&quot; CONNECTION, F.I.P. x CTS; 2&quot; BRASS NIPPLE x 4&quot; LENGTH; 2&quot;x1-1/2&quot; BRONZE BELL REDUCER; AND 1-1/2&quot; CLOSE BRASS NIPPLE (OUTLET) (2 EA)</td>
<td>MUELLER</td>
<td>H-15451N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FORD</td>
<td>H-15451N</td>
</tr>
<tr>
<td>12</td>
<td>METER, SUPPLIED AND INSTALLED BY PCMC (2 EA)</td>
<td>MUELLER</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>PIPE SUPPORTS (4) 16&quot;X8&quot;X8&quot; CMU BLOCK, (2) METER SUPPORT RODS, GALVANIZED</td>
<td>MUELLER</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>MXU AND WIRING, SUPPLIED AND INSTALLED BY PCMC</td>
<td>MUELLER</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>MXU REMOTE LOCATION CONDUIT WITH END CAPS, SCH 40 PVC (STD. PLAN 531)</td>
<td>MUELLER</td>
<td>H-15451N AND H-10035N</td>
</tr>
<tr>
<td>16</td>
<td>END CAP AND MARKER, CTS X F.I.P. (OUTLET) (2 EA)</td>
<td>MUELLER</td>
<td></td>
</tr>
</tbody>
</table>

## DETAIL NOTES

1. LOCATE METER VAULT PER APPROVED PLANS AND SET METER BOX PLUMB
2. SST INSERT STIFFENERS REQUIRED ON ALL CTS TUBING CONNECTIONS
NOTES:
1. REFER TO STD. PLAN 520 FOR GENERAL REQUIREMENTS - METER, METER VAULT, AND SERVICE LINE.
2. REFER TO STD. PLAN 526 S FOR LEGEND ITEMS, APPROVED PARTS LIST, AND DETAIL NOTES.
### LEGEND AND APPROVED PARTS LIST

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</thead>
<tbody>
<tr>
<td>①</td>
<td>DUCTILE IRON TEE OR 2&quot; BRONZE SERVICE SADDLE, DOUBLE STRAP</td>
<td>MUELLER</td>
<td>BR2B SERIES, FIP THDS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FORD</td>
<td>STYLE 202B, FIP THDS</td>
</tr>
<tr>
<td>②</td>
<td>2&quot; DIA. BRASS NIPPLE x 2&quot; LENGTH, M.I.P.</td>
<td></td>
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</tr>
<tr>
<td>③</td>
<td>2&quot; CURB VALVE, F.I.P. X F.I.P.</td>
<td>MUELLER</td>
<td>B-20283N</td>
</tr>
<tr>
<td>④</td>
<td>2&quot; DIA. BRASS NIPPLE x 2&quot; LENGTH, M.I.P. AND BRONZE BELL REDUCER, 2&quot; X 1-1/2&quot; DIA. (REQ'D FOR 1-1/2&quot; YOKE ONLY)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>⑤</td>
<td>1-1/2&quot; OR 2&quot; DIA. BRASS NIPPLES AND BRASS FITTINGS OR COPPER PIPING AND FITTINGS, AS REQ'D PER SITE SPECIFIC LAYOUT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>⑥</td>
<td>1-1/2&quot; OR 2&quot; METER YOKE END CONNECTIONS</td>
<td>MUELLER</td>
<td>MULTI X F.I.P, H-14222N</td>
</tr>
<tr>
<td></td>
<td>1-1/2&quot; METER YOKE COMMERCIAL SERVICE: WITH BYPASS RESIDENTIAL SERVICE: WITHOUT BYPASS</td>
<td>MUELLER</td>
<td>1-1/2&quot;x12&quot; B2423-2-01N (WITH BYPASS) 1-1/2&quot;x12&quot; B2422-2N (WITHOUT BYPASS)</td>
</tr>
<tr>
<td></td>
<td>FORD</td>
<td></td>
<td>1-1/2&quot; VBHH76-12B-11-66-NL (WITH BYPASS) 1-1/2&quot; VBHH76-12-11-66-NL (WITHOUT BYPASS)</td>
</tr>
<tr>
<td>⑦</td>
<td>2&quot; METER YOKE COMMERCIAL SERVICE: WITH BYPASS RESIDENTIAL SERVICE: WITHOUT BYPASS</td>
<td>MUELLER</td>
<td>2&quot;x12&quot; B2423-2-01N (WITH BYPASS) 2&quot;x12&quot; B2422-2N (WITHOUT BYPASS)</td>
</tr>
<tr>
<td></td>
<td>FORD</td>
<td></td>
<td>2&quot; VBHH77-12B-11-77-NL (WITH BYPASS) 2&quot; VBHH77-12-11-77-NL (WITHOUT BYPASS)</td>
</tr>
<tr>
<td>⑧</td>
<td>PIPE SIZE BRASS NIPPLE AND BRONZE UNION, F.I.P., threaded</td>
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<td></td>
</tr>
<tr>
<td>⑨</td>
<td>METER, SUPPLIED AND INSTALLED BY PCMC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>⑩</td>
<td>MXU AND WIRING, SUPPLIED AND INSTALLED BY PCMC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>⑪</td>
<td>EMT CONDUIT FOR MXU WIRING, AS REQUIRED</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
DETAIL NOTES

1. USE OF AN INSIDE WATER METER REQUIRES CITY ENGINEER APPROVAL. REFERENCE WATER STANDARD PLAN 520 FOR APPLICABLE CONDITIONS.

2. FIRE SPRINKLER RISER WITH POTABLE WATER SERVICE: A SITE SPECIFIC DESIGN IS REQUIRED. THE FIRE PROTECTION SPRINKLER SYSTEM AND POTABLE WATER SYSTEM DESIGN SHALL BE APPROVED BY THE FIRE MARSHAL AND THE PARK CITY BUILDING DEPARTMENT. THE POTABLE WATER SERVICE CONNECTION AND METER ASSEMBLY DESIGN SHALL BE APPROVED BY THE PARK CITY BUILDING DEPARTMENT AND THE CITY ENGINEER. DESIGN AND CONSTRUCTION SHALL COMPLY WITH APPLICABLE BUILDING AND PLUMBING CODES.

3. BACKFLOW PREVENTION: PROVIDE A DOUBLE CHECK BACKFLOW ASSEMBLY (DCBA) OR REDUCED PRESSURE PRINCIPLE BACKFLOW ASSEMBLY (RPBA) ON THE FIRE SPRINKLER RISER ASSEMBLY. STYLE TO BE DETERMINED BY THE BUILDING AND WATER DEPARTMENT BASED ON DEGREE OF HAZARD POSED BY FIRE SPRINKLER PROTECTION SYSTEM. BEFORE A CERTIFICATE OF OCCUPANCY CAN BE ISSUED BY THE BUILDING DEPARTMENT, BACKFLOW ASSEMBLY TESTING FOR PROPER OPERATION (PER CITY REQUIREMENTS BY A CERTIFIED TESTER RECOGNIZED BY THE CITY) IS REQUIRED AND A REPORT SUBMITTED.

4. CONNECTIONS TO THE WATER SYSTEM ARE NOT PERMITTED PRIOR TO THE POTABLE WATER METER ASSEMBLY OR THE FIRE SPRINKLER RISER BACKFLOW ASSEMBLY. THIS INCLUDES OUTSIDE IRRIGATION SUPPLY.

5. CLEARANCES: PROVIDE ADEQUATE CLEARANCES FROM FIRE RISER AND AROUND WATER METER ASSEMBLY. MAINTAIN:
   - 9” MINIMUM FROM WALL TO FACE OF POTABLE WATER PIPING
   - 18” CLEAR ON EACH SIDE OF METER ASSEMBLY
   - 36” CLEAR IN FRONT OF METER ASSEMBLY

6. LOCATE METER ASSEMBLY TWO (2) TO FOUR (4) FEET ABOVE THE FLOOR. POSITION METER HORIZONTAL WITH DIAL POINTING UP.

7. PROVIDE ISOLATION (CURB) VALVES AT METER INLET AND OUTLET

8. FOR MULTIPLE METERS PROVIDE A MANIFOLD WITH A MAIN CURB VALVE PRIOR TO THE MANIFOLD AND INDIVIDUAL CURB VALVES LOCATED PRIOR TO AND AFTER METERS.

9. PROVIDE A FLOOR DRAIN IN THE FIRE RISER ROOM WITHIN 10 FEET OF THE WATER METER LOCATION.

10. PROVIDE PIPE LABELS ON THE POTABLE WATER LINE BETWEEN THE FIRE RISER AND THE WATER METER DESIGNATING PIPE AS “POTABLE WATER”.

11. PROVIDE PIPE ANCHORAGE TO SUPPORT METER YOKE AND ASSEMBLY INDEPENDENT OF THE POTABLE WATER SUPPLY PIPING AND BUILDING PLUMBING. PROVIDE PIPE STANDS OR UNISTRUT WALL STANDOFFS. DO NOT SUPPORT METER ASSEMBLY FROM OTHER PIPING.

12. PROVIDE A WALL PENETRATION AND CONDUIT FOR REMOTE RADIOREAD METER TRANSEIVER UNIT (MXU) DEVICE(S). COORDINATE ROUTING AND WALL PENETRATION LOCATION WITH THE WATER DEPARTMENT. REFER TO WATER STANDARD PLANS 520 AND 530.

13. PROVIDE 1/2” EMT CONDUIT AND SUPPORTS FOR MXU SIGNAL WIRE IF DISTANCE TO WALL PENETRATION EXCEEDS 10 FEET.

14. INSPECTION: CONTACT THE CITY ENGINEER FOR INSPECTION OF THE POTABLE WATER SYSTEM METER ASSEMBLY INSTALLATION

15. REFER TO STD. PLAN 500 AND THE SPECIFICATIONS FOR FLUSHING, HYDROSTATIC TESTING, AND DISINFECTING REQUIREMENTS
NOTES:

1. REFER TO STD. PLAN 520 FOR GENERAL REQUIREMENTS - METER, METER VAULT, AND SERVICE LINE.
2. REFER TO STD. PLAN 527 S FOR LEGEND ITEMS, APPROVED PARTS LIST, AND DETAIL NOTES.
## LEGEND AND APPROVED PARTS LIST

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</thead>
<tbody>
<tr>
<td>1</td>
<td>2&quot; BRONZE SERVICE SADDLE, DOUBLE STRAP</td>
<td>MUELLER</td>
<td>BR2B SERIES, F.I.P. THREADS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FORD</td>
<td>202B SERIES, F.I.P. THREADS</td>
</tr>
<tr>
<td>2</td>
<td>GATE VALVE, PIPE SIZE, NRS, FLANGED, 2&quot; SQ. OPERATING NUT, AWWA C509</td>
<td>MUELLER</td>
<td>SERIES A-2360</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CLOW</td>
<td>MODEL 2639</td>
</tr>
<tr>
<td>3</td>
<td>DUCTILE IRON PIPE SPOOL (2), FLG X PE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>METER, SUPPLIED AND INSTALLED BY PCMC</td>
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<tr>
<td>5</td>
<td>PRECAST CONCRETE VAULT, HS20 RATED</td>
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<tr>
<td>6</td>
<td>2&quot; BRONZE BALL VALVE WITH LOCKING HANDLE, F.I.P., THREADED, 300 PSI RATED</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>DISMANTLING JOINT</td>
<td>ROMAC</td>
<td>DJ400 OR APPV'D EQUAL</td>
</tr>
<tr>
<td>8</td>
<td>2&quot; DIA. COPPER 90° ELBOW, SOLDERED, OR BRONZE, F.I.P., THREADED</td>
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<td></td>
</tr>
<tr>
<td>9</td>
<td>2&quot; DIA. BRONZE UNION, F.I.P., THREADED</td>
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<tr>
<td>10</td>
<td>2&quot; COPPER PIPE, TYPE K, OR BRASS NIPPLE</td>
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</tr>
<tr>
<td>11</td>
<td>DUCTILE IRON PIPE SPOOL, 9&quot; LENGTH, FLG X FLG</td>
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<tr>
<td>12</td>
<td>DUCTILE IRON PIPE SPOOL, FLG X PE</td>
<td></td>
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<tr>
<td>13</td>
<td>AFTER PIPING INSTALLATION CORE DRILL 6&quot; DIA. HOLE IN VAULT LID DIRECTLY ABOVE GATE VALVES</td>
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<tr>
<td>14</td>
<td>VALVE BOX, FASTEN VALVE BOX TO VAULT WITH TWO EPOXIED ALL-THREAD ROD/NUT OR SST EXP ANCHOR</td>
<td>D &amp; L SUPPLY</td>
<td>M-8065 AND M-8048 TO M-8053</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HILTI</td>
<td>3/8&quot; DIA. ROD SST 316, OR KWIK BOLT 3 3/8&quot;x3&quot; SS316</td>
</tr>
<tr>
<td>15</td>
<td>THRUST RESTRAINTS</td>
<td>EBBA IRON</td>
<td>MEGALUG SERIES 1100</td>
</tr>
<tr>
<td>16</td>
<td>POLYPROPYLENE ENCASED GRADE 60 STL STEPS AT 13&quot; C-C, 13-1/2&quot; TREAD WIDTH</td>
<td>M.A. INDUSTRIES OR APPV'D EQUAL</td>
<td>PS2-PFDF</td>
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<tr>
<td>17</td>
<td>METER VAULT FRAME AND COVER (STD. PLAN 529)</td>
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<td></td>
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<tr>
<td>18</td>
<td>PIPE SUPPORTS, 5 REQ'D (STD. PLAN 533)</td>
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<td></td>
</tr>
<tr>
<td>19</td>
<td>MXU AND WIRING, SUPPLIED AND INSTALLED BY PCMC</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## DETAIL NOTES

1. REFER TO STD. PLAN 520 FOR GENERAL REQUIREMENTS – METER, METER VAULT, AND SERVICE LINE
2. LOCATE METER VAULT PER APPROVED PLANS AND SET METER BOX PLUMB
3. SST FASTENERS REQUIRED ON ALL FITTINGS
4. NO BYPASS ALLOWED FOR IRRIGATION METERS
5. NO SERVICE LINE REDUCERS OR BENDS WITHIN 5’ OF VAULT
6. COORDINATE METER SIZE AND LENGTH WITH CITY PRIOR TO ORDERING MATERIALS
7. REFER TO STD. PLANS 592 AND 593 FOR MANHOLE ADJUSTMENT AND GRADING REQUIREMENTS
NOTES:
1. REFER TO STD. PLAN 520 FOR GENERAL REQUIREMENTS - METER, METER VAULT, AND SERVICE LINE.
2. REFER TO STD. PLAN 528 S FOR LEGEND ITEMS, APPROVED PARTS LIST, AND DETAIL NOTES.
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<tbody>
<tr>
<td>1</td>
<td>DUCTILE IRON TEE, FLG., PRESSURE CLASS 350, CEMENT-MORTAR LINED, ASPHALTIC INTERIOR COATING, AWWA C150 / C151 / C104</td>
<td>U.S. PIPE PACIFIC STATES</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>DUCTILE IRON PIPE SPOOL, FLG. X FLG., 3&quot; TO 12&quot; DIAMETER, FULL BODY, PRESSURE CLASS 350, CEMENT-MORTAR LINED, ASPHALTIC INTERIOR COATING, AWWA C150 / C151 / C104</td>
<td>U.S. PIPE PACIFIC STATES</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>2&quot; BRONZE SERVICE SADDLE, DOUBLE STRAP</td>
<td>MUELLER</td>
<td>BR2B SERIES, FIP THDS</td>
</tr>
<tr>
<td>4</td>
<td>2&quot; BRONZE BALL VALVE WITH LOCKING HANDLE, F.I.P., THREADED, 300 PSI RATED, LEAD FREE</td>
<td>FORD</td>
<td>STYLE 202B, FIP THDS</td>
</tr>
<tr>
<td>5</td>
<td>GATE VALVE, PIPE SIZE, NRS WITH HANDWHEEL, FLANGED, 2&quot; SQ. OPERATING NUT, AWWA C509</td>
<td>MUELLER</td>
<td>SERIES A-2360</td>
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<td>METER, SUPPLIED AND INSTALLED BY PCMC</td>
<td>CLOW</td>
<td>MODEL 2639</td>
</tr>
<tr>
<td>7</td>
<td>DUCTILE IRON PIPE SPOOL (2), FLG X PE</td>
<td>MUELLER</td>
<td>MULTI X F.I.P, H-14222N</td>
</tr>
<tr>
<td>8</td>
<td>DISMANTLING JOINT, WITH RESTRAINING BOLTS</td>
<td>ROMAC</td>
<td>DJ400 OR APPV'D EQUAL</td>
</tr>
<tr>
<td>9</td>
<td>2&quot; BRONZE UNION, F.I.P., THREADED, LEAD FREE</td>
<td>ROMAC</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>2&quot; COPPER PIPE, TYPE K, WITH COPPER 90° ELBOW, SOLDERED, OR BRASS NIPPLE BRONZE, F.I.P., WITH THREADED 90° ELBOW (NO GALVANIZED MATERIALS)</td>
<td>ROMAC</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>PIPE SUPPORTS, 2 REQ'D ON MAIN SERVICE LINE AND 2 REQ'D ON BYPASS SERVICE</td>
<td>ROMAC</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>MXU AND WIRING, SUPPLIED AND INSTALLED BY PCMC</td>
<td>ROMAC</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>1/2&quot; EMT CONDUIT FOR MXU WIRING, AS REQUIRED</td>
<td>ROMAC</td>
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</tr>
</tbody>
</table>

---

**DATE**  
5/2014  
**REV.**  0  
**STD. PLAN**  528 S.1
DETAIL NOTES

1. USE OF AN INSIDE WATER METER REQUIRES CITY ENGINEER APPROVAL. REFERENCE WATER STANDARD PLAN 520 FOR APPLICABLE CONDITIONS.

2. FIRE SPRINKLER RISER WITH POTABLE WATER SERVICE: A SITE SPECIFIC DESIGN IS REQUIRED. THE FIRE PROTECTION SPRINKLER SYSTEM AND POTABLE WATER SYSTEM DESIGN SHALL BE APPROVED BY THE FIRE MARSHAL AND THE PARK CITY BUILDING DEPARTMENT. THE POTABLE WATER SERVICE CONNECTION AND METER ASSEMBLY DESIGN SHALL BE APPROVED BY THE PARK CITY BUILDING DEPARTMENT AND THE CITY ENGINEER. DESIGN AND CONSTRUCTION SHALL COMPLY WITH APPLICABLE BUILDING AND PLUMBING CODES.

3. BACKFLOW PREVENTION: PROVIDE A DOUBLE CHECK BACKFLOW ASSEMBLY (DCBA) OR REDUCED PRESSURE PRINCIPLE BACKFLOW ASSEMBLY (RPBA) ON THE FIRE SPRINKLER RISER ASSEMBLY. STYLE TO BE DETERMINED BY THE BUILDING AND WATER DEPARTMENT BASED ON DEGREE OF HAZARD POSED BY FIRE SPRINKLER PROTECTION SYSTEM. BEFORE A CERTIFICATE OF OCCUPANCY CAN BE ISSUED BY THE BUILDING DEPARTMENT, BACKFLOW ASSEMBLY TESTING FOR PROPER OPERATION (PER CITY REQUIREMENTS BY A CERTIFIED TESTER RECOGNIZED BY THE CITY) IS REQUIRED AND A REPORT SUBMITTED.

4. CONNECTIONS TO THE WATER SYSTEM ARE NOT PERMITTED PRIOR TO THE POTABLE WATER METER ASSEMBLY OR THE FIRE SPRINKLER RISER BACKFLOW ASSEMBLY. THIS INCLUDES OUTSIDE IRRIGATION SUPPLY.

5. CLEARANCES: PROVIDE ADEQUATE CLEARANCES FROM FIRE RISER AND AROUND WATER METER ASSEMBLY. MAINTAIN: 9” MINIMUM FROM WALL TO FACE OF POTABLE WATER PIPING 18” CLEAR ON EACH SIDE OF METER ASSEMBLY 36” CLEAR IN FRONT OF METER ASSEMBLY

6. LOCATE METER ASSEMBLY TWO (2) TO FOUR (4) FEET ABOVE THE FLOOR. POSITION METER HORIZONTAL WITH DIAL POINTING UP.

7. VERIFY METER LAY LENGTH WITH WATER DEPARTMENT PRIOR TO INSTALLING PIPING

8. PROVIDE ISOLATION VALVES AT METER INLET AND OUTLET

9. FOR MULTIPLE METERS PROVIDE A MANIFOLD WITH A MAIN VALVE PRIOR TO THE MANIFOLD AND INDIVIDUAL VALVES LOCATED PRIOR TO AND AFTER METERS.

10. PROVIDE A FLOOR DRAIN IN THE FIRE RISER ROOM WITHIN 10 FEET OF THE WATER METER LOCATION.

11. PROVIDE PIPE LABELS ON THE POTABLE WATER LINE BETWEEN THE FIRE RISER AND THE WATER METER DESIGNATING PIPE AS "POTABLE WATER".

12. PROVIDE PIPE ANCHORAGE TO SUPPORT METER ASSEMBLY INDEPENDENT OF THE POTABLE WATER SUPPLY PIPING AND BUILDING PLUMBING. PROVIDE PIPE STANDS OR UNISTRUT WALL STANDOFFS. DO NOT SUPPORT METER ASSEMBLY FROM OTHER PIPING.

13. PROVIDE A WALL PENETRATION AND CONDUIT FOR REMOTE RADIOREAD METER TRANSEIVER UNIT (MXU) DEVICE(S). COORDINATE ROUTING AND WALL PENETRATION LOCATION WITH THE WATER DEPARTMENT. REFERENCE WATER STANDARD PLANS 520 AND 530.

14. PROVIDE 1/2” EMT CONDUIT AND SUPPORTS FOR MXU SIGNAL WIRE IF DISTANCE TO WALL PENETRATION EXCEEDS 10 FEET.

15. INSPECTION: CONTACT THE CITY ENGINEER FOR INSPECTION OF THE POTABLE WATER SYSTEM METER ASSEMBLY INSTALLATION.

16. REFER TO STD. PLAN 500 AND THE SPECIFICATIONS FOR FLUSHING, HYDROSTATIC TESTING, AND DISINFECTING REQUIREMENTS

17. BUILDING OWNER IS RESPONSIBLE TO HAVE THE BACKFLOW PREVENTER FLOW TESTED AND INSPECTED INTERNALLY AT LEAST ONCE PER YEAR, OR MORE AS CONDITIONS WARRANT, IN ACCORDANCE WITH NFPA 13 AND NFPA 25 AND A REPORT SUBMITTED TO THE PARK CITY BUILDING DEPARTMENT.
### LEGEND AND APPROVED PARTS LIST

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>ACCEPTABLE MANUFACTURER</th>
<th>MODELS</th>
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<tbody>
<tr>
<td>①</td>
<td>METER VAULT FRAME AND COVER, MARKED “WATER”</td>
<td>D&amp;L SUPPLY</td>
<td>L-2320, OR APPROVED EQUAL</td>
</tr>
<tr>
<td>②</td>
<td>METER VAULT FRAME AND COVER, TRAFFIC RATED, MARKED “WATER”</td>
<td>D&amp;L SUPPLY</td>
<td>A-1019, OR APPROVED EQUAL</td>
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<tr>
<td>③</td>
<td>2” TAP AND PLUG, REQUIRED</td>
<td>FORD OR APPROVED EQUAL</td>
<td>PLUG: PTP</td>
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<tr>
<td>④</td>
<td>2” TAP WITH RECESSED PLUG, REQUIRED (PLAN VIEW ‘B’)</td>
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<td></td>
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<tr>
<td>⑤</td>
<td>NOTCH INNER FROST FREE LID FOR SIGNAL WIRE (PLAN VIEW ‘A’)</td>
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<td></td>
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<tr>
<td>⑥</td>
<td>MXU AND WIRING, SUPPLIED AND INSTALLED BY PCMC</td>
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<td></td>
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<tr>
<td>⑦</td>
<td>METER VAULT, MATERIALS VARY</td>
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</table>

### DETAIL NOTES

1. REFER TO STD. PLAN 592 AND 593 FOR METER VAULT ADJUSTMENT AND GRADING REQUIREMENTS
2. PROVIDE TAPS FOR STANDARD AND ALTERNATE MXU LOCATIONS
3. PROVIDE PLUGS FOR ALL OPENINGS
4. REMOVE ALL BURRS FROM TAPS AND NOTCHES
5. REFER TO STD PLAN 530 FOR REMOTE MXU REQUIREMENTS
INSIDE METER

OUTSIDE METER

LEGEND

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>REMOTE RADIO READ MXU, 6&quot;X6&quot;, DEVICE SURFACE MOUNT, BY PCMC</td>
</tr>
<tr>
<td>2</td>
<td>MXU SIGNAL WIRE, SUPPLIED AND INSTALLED BY PCMC</td>
</tr>
<tr>
<td>3</td>
<td>3/4&quot; PVC NEMA TC-2 CONDUIT BY CUSTOMER</td>
</tr>
<tr>
<td>4</td>
<td>WALL PENETRATION, BY CUSTOMER</td>
</tr>
<tr>
<td>5</td>
<td>3/4&quot; GALVANIZED RIGID STEEL CONDUIT, BY CUSTOMER</td>
</tr>
</tbody>
</table>

NOTES:

1. REFER TO STD. PLAN 520 FOR GENERAL REQUIREMENTS - METER, METER VAULT, AND SERVICE LINE.
NOTES:

1. USE OF A PCMC FIRE HYDRANT FOR OBTAINING CONSTRUCTION WATER REQUIRES A VALID CUSTOMER WATER SERVICE AGREEMENT. THE AGREEMENT CAN BE OBTAINED FROM THE PUBLIC WORKS DEPARTMENT. A DEPOSIT FEE IS REQUIRED.

2. CONTRACTOR (CUSTOMER) IS RESPONSIBLE TO PICK UP THE PCMC PROVIDED HYDRANT METER ASSEMBLY FROM THE PUBLIC WORKS DEPARTMENT. COORDINATE PICK UP 24 HOURS PRIOR TO ARRIVAL.

3. CONTRACTOR SHALL BE RESPONSIBLE TO INSTALL AND PROPERLY SUPPORT THE PCMC PROVIDED HYDRANT METER ASSEMBLY. PRIOR TO THE PLACING THE ASSEMBLY IN SERVICE THE FOLLOWING IS REQUIRED:
   1) ASSEMBLY INSTALLATION IS TO BE INSPECTED BY A WATER DEPARTMENT REPRESENTATIVE. ALLOW 24 HOURS NOTICE FOR AN INSPECTION (NO WEEKEND OR HOLIDAY INSPECTIONS). ONCE PROPER INSTALLATION IS VERIFIED, THE WATER DEPARTMENT REPRESENTATIVE SHALL UNLOCK THE ASSEMBLY AND ACTIVATE THE HYDRANT.
   2) CONTRACTOR SHALL NOTIFY THE PARK CITY FIRE SERVICE DISTRICT OFFICE OF THE HYDRANT CONNECTION

4. FULLY OPEN THE FIRE HYDRANT VALVE PRIOR TO OPERATION. DO NOT USE THE FIRE HYDRANT VALVE FOR THROTTLING, USE THE BACKFLOW ASSEMBLY VALVE. DO NOT CLOSE VALVES ON THE ASSEMBLY OR THE DISCHARGE LINE QUICKLY.

5. CONTRACTOR SHALL PROTECT THE HYDRANT METER ASSEMBLY FROM DAMAGE, THEFT, AND MISUSE.

6. CONTRACTOR IS RESPONSIBLE FOR ANY AND ALL WATER CONSUMPTION.

7. CONTRACTOR SHALL NOTIFY PCMC WATER DEPARTMENT, REMOVE, AND RETURN THE HYDRANT METER ASSEMBLY WHEN HYDRANT USE IS COMPLETE. RELOCATION OF THE HYDRANT METER ASSEMBLY REQUIRES PRIOR NOTIFICATION TO THE WATER DEPARTMENT AND A MODIFICATION TO THE CUSTOMER SERVICE AGREEMENT.
PCMC WATER SYSTEM – CORROSION PROTECTION REQUIREMENTS:

PCMC HAS EXPERIENCED EXTERNAL CORROSION OF WATER DISTRIBUTION MATERIALS IN VARYING DEGREES THROUGHOUT THE CITY. TO MAXIMIZE THE LIFE CYCLE OF WATER SYSTEM IMPROVEMENTS, AS IMPACTED BY THE IMMEDIATE SITE CONDITIONS AND THE SELECTION OF MATERIALS, THE CITY HAS IDENTIFIED KEY DESIGN AND CONSTRUCTION REQUIREMENTS.

1. FOR PROJECTS WITH LESS THAN 300 FEET OF NEW WATER PIPE AND APPURTENANCES, CORROSION PROTECTION SHALL BE ADDRESSED IN THE FOLLOWING MANNER:
   a. IN ADDITION TO THE REQUIRED POLYETHYLENE WRAP, APPLY A WAX TAPE COATING SYSTEM TO VALVE BONNET BOLTS AND ALL OTHER BURIED BOLTS, NUTS, CONNECTORS, RESTAINER GLAND BOLTS, AND COUPLING HARDWARE, AWWA C217. COATING SYSTEM TO INCLUDE A 4-MIL MINIMUM WAX TAPE PRIMER, FILLER MATERIAL, 45-MIL MINIMUM WAX TAPE AND PROTECTIVE OUTER WRAP
   b. WAX TAPE COATING MATERIALS:
      i. DENSO NORTH AMERICA DENSO PRIMER, DENSYL TAPE AND/OR MASTIC, DENSO FIBER-WRAP
      ii. TRENTON PRIMER, #1 WAX-TAPE, AND GUARD-WRAP
      iii. OR APPROVED EQUAL (SUBMITTAL TO CITY AND WRITTEN APPROVAL REQUIRED PRIOR TO INSTALLATION)

2. FOR PROJECTS EXCEEDING 300 FEET OF NEW WATER PIPE AND APPURTENANCES, CORROSION PROTECTION SHALL BE ADDRESSED IN THE FOLLOWING MANNER:
   a. THE DEVELOPER AND ITS' DESIGN ENGINEER, GEOTECHNICAL ENGINEER, AND CORROSION CONSULTANT SHALL PROVIDE A SITE SPECIFIC “CORROSION STUDY REPORT”. THE REPORT SHALL INCORPORATE PROJECT SPECIFIC FINDINGS INTO CORROSION PROTECTION RECOMMENDATIONS FOR THE PROPOSED WATER SYSTEM IMPROVEMENTS. THE REPORT SHALL INCLUDE AT A MINIMUM THE FOLLOWING ITEMS:
      i. DETAILED INFORMATION ON EXISTING CONDITIONS, SOIL TYPES, CLASSIFICATION, ETC.
      ii. IDENTIFICATION OF STRAY CURRENT SOURCES AND ANY EXISTING CORROSION PROTECTION SYSTEMS IN THE IMMEDIATE AREA
      iii. IDENTIFICATION OF ANY POTENTIAL FOR HOT SPOTS OR VARYING SOIL CONDITIONS THAT MAY WARRANT CHANGES TO THE CORROSION PROTECTION PLAN DURING CONSTRUCTION.
      iv. FIELD SAMPLING AND TESTING RESULTS WITHIN THE PROPOSED PIPE ZONE BASED ON REPRESENTATIVE SAMPLING OF THE DEVELOPMENT AREA CONDITIONS
      v. SOIL RESISTIVITY TESTING RESULTS IDENTIFYING CORROSIVE SOIL CONDITIONS AND LOCATIONS (WENNER 4-PIN SOIL RESISTIVITY TESTS AND SOIL BOX RESISTIVITY TESTS) AT REPRESENTATIVE PIPE INSTALL DEPTHS
      vi. LABORATORY ANALYSIS OF SOIL SAMPLES FOR PH, CHLORIDES, SULFATES, TOTAL SALTS, AND CONDUCTIVITY
      vii. DETERMINATION OF THE NEED FOR CORROSION PROTECTION BASED ON SOIL CORROSIVITY CLASSIFICATION/SOIL RESISTIVITY AND RECOMMENDATION OF SUITABLE PIPE, CONSTRUCTION MATERIALS, PIPE PROTECTION METHOD, PIPE EXTERIOR COATINGS, ETC., BASED ON SITE CORROSIVITY. SEE TABLE BELOW.
      viii. SPECIFY IF THE INVESTIGATION INCLUDES ONLY THE INITIAL PHASE OR ALL FUTURE PHASES
b. Following PCMC’s receipt and review of the corrosion study report, the developer will be notified of the city’s determination as to required protection or the design team will be requested to meet and review the findings and establish the final water system design criteria. The city’s review will be based on the following Table 1:

**TABLE 1 - SOIL CORROSIVITY CLASSIFICATION VERSUS SOIL RESISTIVITY**

<table>
<thead>
<tr>
<th>CORROSIVITY</th>
<th>RESISTIVITY, OHM-CM</th>
<th>TREATMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXTREMELY CORROSIVE</td>
<td>LESS THAN 1,000</td>
<td>SITE SPECIFIC DESIGN REQUIRED</td>
</tr>
<tr>
<td>VERY CORROSIVE</td>
<td>1,000 TO 3,000</td>
<td>SITE SPECIFIC DESIGN REQUIRED</td>
</tr>
<tr>
<td>CORROSIVE</td>
<td>3,000 TO 6,000</td>
<td>NON-METALLIC PIPE – WAX TAPE COATING SYSTEM ON BOLTS &amp; NUTS, ANODE PROTECTED FITTINGS AND VALVES</td>
</tr>
<tr>
<td>MODERATELY CORROSIVE</td>
<td>6,000 TO 10,000</td>
<td>NON-METALLIC PIPE - WAX TAPE COATING SYSTEM ON BOLTS AND NUTS ON PIPE, FITTINGS, AND VALVES</td>
</tr>
<tr>
<td>MILDLY CORROSIVE</td>
<td>MORE THAN 10,000</td>
<td>WAX TAPE COATING SYSTEM ON BOLTS AND NUTS ON PIPE, FITTINGS, AND VALVES</td>
</tr>
</tbody>
</table>

c. Refer to pertinent PCMC water standard plans or provide construction drawing details associated with corrosion study recommendations and the PCMC final approved water system
TERMINAL BOARD WIRING DIAGRAM

PIPE TERMINAL

REFERENCE ELECTRODE TERMINAL

0.01 OHM HOLLOWAY SHUNT (TYP)

ANODE TERMINAL (TYP)

FINISH GRADE

2-#12 AWG WIRES, WHITE INSULATION

#8 AWG HEADER WIRE, BLACK INSULATION

#14 AWG WIRE, YELLOW INSULATION

REFERENCE ELECTRODE, LOCATE 6" FROM EDGE OF PIPE

WIRE SPLICE, SEE STD. PLAN 537-E (TYP)

WIRE CONNECTION, SEE STD. PLAN 537-A (TYP)

GALVANIC ANODE, QUANTITY AS SPECIFIED, SEE STD. PLAN 536 (TYP)

PARK CITY MUNICIPAL CORPORATION
WATER

DATE
12/2013

STD. PLAN
535-A

TYPE A TEST STATION

REV.
NOTE:
SEE POST OR FLUSH MOUNTED TEST STATION DETAILS AS APPLICABLE FOR TEST STATION STYLE REQUIRED.
NOTES:

1. PRIOR TO MAKING WIRE CONNECTIONS CONTACT FOREIGN PIPELINE OWNER FOR APPROVAL.

2. SEE POST OR FLUSH MOUNTED TEST STATION DETAILS AS APPLICABLE FOR TEST STATION STYLE REQUIRED.
NOTE:
SEE POST OR FLUSH MOUNTED TEST STATION DETAILS AS APPLICABLE FOR TEST STATION STYLE REQUIRED.
FINISH GRADE

WIRE SPLICE, SEE
STD. PLAN 537-E

#8 AWG STRANDED COPPER
ANODE HEADER WIRE

5'0" MIN

STRANDED COPPER
ANODE LEAD WIRE,
SUPPLY WITH ANODE

NATIVE SOIL BACKFILL

PREPACKAGED ANODE (STD PLAN 537-G)
NOTES:

1. MAKE WIRE CONNECTION TO PIPE AT FIELD JOINT WHERE HOLDBACK OCCURS ON PIPELINE COATING.

2. MAINTAIN SEPARATION BETWEEN MULTIPLE TEST WIRE CONNECTIONS OF ONE PIPE DIA OR 24", WHICHEVER IS LESS.

3. COPPER SLEEVE REQUIRED FOR #2 AWG JOINT BONDS OR FOR #12 AWG OR SMALLER TEST WIRES.

4. WELDER AND CARTRIDGE SIZE VARIES ACCORDING TO PIPE SIZE AND PIPE MATERIAL, CONSULT WELDER MANUFACTURER FOR RECOMMENDED WELDER AND CARTRIDGE.

5. COAT COMPLETED CONNECTIONS, SEE STD PLAN 537-G.

6. PIPELINE JOINT COATING NOT SHOWN FOR CLARITY.
NOTES:

1. PUSH ON DUCTILE IRON BOND SHOWN, SIMILAR FOR DUCTILE MECHANICAL AND RESTRAINED JOINTS, AND STEEL CARNEGIE JOINTS.

2. INSTALL 2 BOND WIRES AT EACH PIPE JOINT, UNLESS SPECIFIED OTHERWISE.

3. COAT THERMITE WELDS WITH THERMITE WELD CAP OR FAST CURE EPOXY AT CONTRACTOR'S OPTION.
#2 AWG STRANDED WIRE, HMWPE INSULATION

#12 AWG STRANDED WIRE PIGTAIL, THHN INSULATION (TYP OF 2)

THERMIT WELD, SEE STD. PLAN 537-A (TYP)

FLEXIBLE, EXPANSION, OR DEPEND-O-LOCK TYPE COUPLING
NOTE:
INSTALL TWO BOND WIRES AT EACH PIPE JOINT.
NOTES:

1. FILL VOIDS AND IRREGULARITIES WITH INSULATING PUTTY, WRAP CONNECTION WITH TWO LAYERS OF SCOTCH 130C SELF VULCANIZING RUBBER TAPE AND TWO LAYERS OF SCOTCH 88 VINYL ELECTRICAL TAPE.

2. DETAIL SIMILAR FOR ANODE HEADER WIRE SPLICES, SIZE COMPRESSION CONNECTORS AS REQUIRED.
NOTES:

1. DOUBLE INSULATING WASHERS SHOWN FOR NON-BURIED INSULATING FLANGE INSTALLATIONS.

2. FOR BURIED OR SUBMERGED INSULATING FLANGE INSTALLATION USE SINGLE INSULATING WASHER ON UNPROTECTED SIDE OF INSULATING FLANGE.

3. COAT INTERIOR OF MORTAR LINED PIPE FOR TWO PIPE DIAMETERS WITH NSF APPROVED EPOXY AT 20 MILS DFT.

4. COAT BURIED OR IMMERSED INSULATING FLANGES WITH SPECIFIED PIPELINE DIELECTRIC JOINT COATING OR HEAT SHRINK SLEEVE WITH MORTAR OVERCOAT ON MLC STEEL PIPE.

5. TEST COMPLETED JOINT FOR ELECTRICAL ISOLATION AND REPAIR AS REQUIRED.
NOTES:

1. APPLY DIELECTRIC COATING TO ALL METALLIC FITTINGS, VALVES, PIPE, AND VALVE BOXES UNLESS SPECIFIED OTHERWISE.

2. GALVANIC ANODES SHALL BE H1 ALLOY MAGNESIUM ANODES AT THE BARE WEIGHT LISTED IN THE SCHEDULE, SUPPLY PREPACKAGED IN A CLOTH BAG AT 2.5 TIMES BARE WEIGHT IN 75% GYPSUM, 20% BENTONITE, AND 5% SODIUM SULFATE BACKFILL WITH MANUFACTURER'S STANDARD 10-FOOT LONG, NO. 12 AWG LEAD WIRE.

3. INSTALL ANODES IN PIPE TRENCH APPROXIMATELY 2 FEET FROM THE FITTING WHERE POSSIBLE, BUT NOT CLOSER THAN 12-INCHES FROM THE METALLIC FITTING.

4. ANODE PLACEMENT IS INDICATED BY NUMBER NEXT TO EACH ANODE SHOWN IN DETAILS, FIRST ANODE IS PLACED AT ONE, SECOND AT TWO, ETC.

5. LOCATE MULTIPLE ANODES AT EQUAL SPACING ALONG PIPE FITTING ASSEMBLY AND ON OPPOSITE SIDES OF PIPE WHEN MORE THAN FOUR ANODES ARE REQUIRED.

6. 32-LB GALVANIC ANODES MAY BE SUBSTITUTED FOR 17-LB ANODES AT THE CONTRACTOR'S OPTION, BUT THE TOTAL QUANTITY OF ANODES REQUIRED WILL NOT CHANGE.

7. ANODE QUANTITY AND BARE WEIGHT REQUIRED FOR SOME PIPE AND FITTING COMBINATIONS ARE LISTED IN THE SCHEDULE.

8. ADDITIONAL ANODES ARE REQUIRED ON METALLIC PIPE ASSEMBLIES THAT EXCEED THE MAXIMUM COMBINED LENGTH LISTED IN THE SCHEDULE FOR ALL FITTINGS, VALVES, PIPE SPOOLS, AND OTHER METALLIC APPURTENANCES IN THE ASSEMBLY, EXCLUDING THRUST RESTRAINT, ADD ONE ANODE FOR EACH EXTRA PIPE LENGTH AND ONE ANODE FOR FRACTIONAL EXTRA PIPE LENGTH TO THE LISTED QUANTITY OF ANODES.

9. PIPE ASSEMBLIES FOR BLOW-OFFS, AIR RELEASE, AND FIRE HYDRANTS ARE BASED ON STANDARD CONSTRUCTION DETAILS AND INCLUDES ONE RESTRAINED MAINLINE TEE FITTING AND ALL OFFSET PIPE, FITTINGS, AND RISERS AS SHOWN ON THE APPLICABLE CONSTRUCTION DETAILS, ADDITIONAL ANODES ARE REQUIRED FOR - 1) OFFSET PIPE LENGTH IN EXCESS OF THE MAXIMUM COMBINED LENGTH FOR THE OFFSET PIPE DIAMETER, AND 2) ADDITIONAL ANODES REQUIRED FOR EXTRA MAINLINE PIPE FITTINGS.

10. BOND ALL ADJACENT FITTING JOINTS WHERE MULTIPLE METALLIC FITTINGS ARE INSTALLED TOGETHER WITH JOINT BONDS AS SHOWN IN DETAIL 711-L,M,N.

11. BOND WIRES SHALL BE STRANDED COPPER WIRE WITH THHN INSULATION, USE NO. 2 AWG WIRE FOR BONDING OF PIPE OR FITTING JOINTS, USE NO. 8 AWG WIRE FOR BONDING FOLLOWER RINGS AND RESTRAINED JOINT RINGS TO FITTING AS SHOWN.

12. COAT ALL THERMITE WELDS, PIPE, AND EXPOSED COPPER WIRE WITH SCOTCHKOTE 206P THERMOPLASTIC PATCH MELT STICK COATING, THERMITE WELD CAP, OR COATING SYSTEM AS SPECIFIED.
13. COATING MATERIAL FOR METALLIC PIPE AND FITTINGS
   A. GENERAL:

   1. ALL METALLIC FITTINGS AND METALLIC HARDWARE ASSOCIATED WITH NON-METALLIC PIPE
      CONSTRUCTION SHALL BE DIELECTRICALLY COATED WITH A BONDED COATING.

   2. PREPARE SURFACE OF ITEMS TO BE COATED IN ACCORDANCE WITH COATING
      MANUFACTURER’S REQUIREMENTS.

   B. DIELECTRIC COATING SYSTEMS FOR METALLIC PIPE, FITTINGS, AND APPURTEYNANCES

   1. WAX TAPE COATING SYSTEM
      a. METALLIC PIPING, FITTINGS, AND APPURTEYNANCES SHALL BE COATED IN ACCORDANCE WITH AWWA C217.

      b. APPLY COATING SYSTEM TO ALL BURIED METALLIC PIPE APPURTEYNANCES, INCLUDING JOINTS, FITTINGS, BOLTS, AND IRREGULARLY SHAPED SURFACES.

      c. FILLER MATERIAL:
         (1) SHALL BE COMPRIZED OF SATURATED PETROLEUM HYDROCARBONS (PETROLATUM) INERT FILLERS, REINFORCING FIBERS AND THERMAL EXTENDERS. VARIATIONS MAY CONTAIN BEADS OF CELLULAR POLYMER AND FLOW CONTROL ADDITIVES.
         (2) WAX SHALL BE COLD APPLIED SELF SUPPORTING MASTICS FOR MOLDING AROUND IRREGULAR SHAPED FITTINGS TO PROVIDE A SUITABLE PROFILE FOR APPLYING ANTI-CORROSION TAPES.

      d. TAPE COATING
         (1) COMPOSED OF A NON-WOVEN SYNTHETIC FABRIC CARRIER, FULLY IMPREGNATED WITH A NEUTRAL COMPOUND BASED ON SATURATED PETROLEUM COMPOSED OF INERT SILICEOUS FILLERS. APPLY COATING IN ACCORDANCE WITH AWWA C217, EXCEPT AS MODIFIED HEREIN.

      e. PROTECTIVE OUTER WRAP
         (1) PROVIDE FIBER MESH FABRIC OUTER WRAP OVER WAX TAPE RESIN COATED, WOVEN FIBER-MESH FABRIC THAT IS .005 INCHES.

      f. ALL COMPONENTS OF THE WAX TAPE COATING SYSTEM SHALL BE FROM A SINGLE MANUFACTURER AS MANUFACTURED BY DENSO NORTH AMERICAN, TRENTON, OR EQUAL.
# SCHEDULE OF ANODE QUANTITIES AND BARE WEIGHT

<table>
<thead>
<tr>
<th>PIPE AND FITTINGS DESCRIPTIONS</th>
<th>MAX. COMBINED LENGTH</th>
<th>PIPELINE DIAMETER</th>
<th>REFERENCE DETAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>ONE JOINT RESTRAINT</td>
<td>0'</td>
<td>1 @ 17#</td>
<td>1 @ 17#</td>
</tr>
<tr>
<td>ONE FITTING W/ RESTRAINT</td>
<td>0'</td>
<td>1 @ 17#</td>
<td>1 @ 17#</td>
</tr>
<tr>
<td>ONE FITTING W/ RESTRAINT</td>
<td>0'</td>
<td>1 @ 17#</td>
<td>1 @ 17#</td>
</tr>
<tr>
<td>ONE FLEXIBLE COUPLING</td>
<td>0'</td>
<td>1 @ 17#</td>
<td>1 @ 17#</td>
</tr>
<tr>
<td>3&quot;-6&quot; AIR RELEASE ASSEMBLY</td>
<td>20'</td>
<td>2 @ 17#</td>
<td>3 @ 17#</td>
</tr>
<tr>
<td>6&quot; BLOW-OFF PIPE ASSEMBLY</td>
<td>20'</td>
<td>2 @ 17#</td>
<td>3 @ 17#</td>
</tr>
<tr>
<td>6&quot; OR 8&quot; FIRE HYDRANT</td>
<td>20'</td>
<td>2 @ 17#</td>
<td>3 @ 17#</td>
</tr>
<tr>
<td>BURIED MAINLINE VALVE</td>
<td>10'</td>
<td>1 @ 17#</td>
<td>1 @ 17#</td>
</tr>
<tr>
<td>MULTIPLE FITTINGS</td>
<td>10'</td>
<td>1 @ 17#</td>
<td>2 @ 17#</td>
</tr>
<tr>
<td>VALVED TURNOUT</td>
<td>0'</td>
<td>1 @ 17#</td>
<td>2 @ 17#</td>
</tr>
</tbody>
</table>

**EXTRA PIPE LENGTH:**

- 1-17 LB ANODE FOR 30 FT 15 FT 10 FT

**EXTRA FITTING LENGTH:**

- 2-17 LB ANODES FOR 20 FT 12 FT 8 FT
NOTES:

1. TEST STATION TO BE ALUMINUM BODY AND LID WITH THREADED CONNECTION FOR CONDUIT.

2. QUANTITY OF TERMINALS AND WIRING CONNECTIONS VARIES, SEE APPLICABLE TEST STATION DETAILS FOR TYPE OF TEST STATION.

3. PROVIDE WIRE LOP AT BASE OF POST MOUNTED TEST STATION TO MINIMIZE SETTLEMENT STRESSES ON WIRE.
PLASTIC TEST STATION, COVER NOT SHOWN

3" DIA POLYETHYLENE PIPE POST

FINISH GRADE

3'-0"

12" DIA LOOP IN WIRES, SEE NOTES

TEST WIRES, SEE TEST STATION TYPE FOR QUANTITY SIZE AND COLOR

NOTES:

1. COLOR OR TEST STATION AND POST AS SPECIFIED.

2. QUANTITY OF TERMINALS AND WIRING CONNECTIONS VARIES, SEE APPLICABLE TEST STATION DETAILS FOR TYPE OF TEST STATION.

3. PROVIDE WIRE LOP AT BASE OF POST MOUNTED TEST STATION TO MINIMIZE SETTLEMENT STRESSES ON WIRE
2'-6" X 6" THICK FORMED CONCRETE PAD

8" DIA CAST IRON COVER MARKED "TEST STATION"

MICARTA BOARD WITH SST TERMINALS, SEE STD. PLAN 538-D

12" METER BOX, PROVIDE EXTENSION WHERE SPECIFIED, EXTENSION NOT SHOWN

TEST WIRES, NOT ALL SHOWN

NOTES:

1. COLOR CODE WIRE INSULATION AS SHOWN IN APPLICABLE TEST STATION DETAILS, CONNECT EACH TEST WIRE TO SEPARATE TERMINAL.

2. WIRE CONFIGURATION FOR FLUSH MOUNTED TEST STATIONS SIMILAR TO POST MOUNTED TEST STATIONS.

3. PROVIDE 18 INCHES SLACK IN TEST WIRES, MINIMUM.

FLUSH STYLE TEST STATION BOX

538-C
NOTES:
1. TERMINALS SHALL BE 1/4" STAINLESS STEEL WITH LOCKING WASHER, TWO FLAT WASHERS, AND DOUBLE NUTS.

2. ALL WIRE CONNECTIONS TO BE WITH RING TONGUE COMPRESSION TERMINALS.
NOTES:

1. PROVIDE RETAINING GLANDS ON MECHANICAL JOINTS
2. STAGGER MULTIPLE TAPS 22-1/2 DEG. AND MAINTAIN 24" C-C MINIMUM SEPARATION
3. PROVIDE CORROSION PROTECTION AS REQUIRED. REFER TO STANDARD PLAN 534.
4. PROVIDE WATER LINE LOOPS AS REQUIRED TO MAINTAIN SEPARATION WITH OTHER UTILITIES, REFER TO STANDARD PLAN 544
NOTES:

1. PROVIDE A 10' MINIMUM PVC PIPE SECTION LENGTH BETWEEN FITTINGS, VALVES, AND COUPLINGS
2. PROVIDE RETAINING GLANDS ON MECHANICAL JOINTS
3. STAGGER MULTIPLE TAPS 22-1/2 DEG. AND MAINTAIN 36" C-C MINIMUM SEPARATION
4. PROVIDE CORROSION PROTECTION ON ALL METALLIC FITTINGS, VALVES, COUPLERS, ETC., AS REQUIRED. REFER TO STANDARD PLAN 534.
5. PROVIDE WATER LINE LOOPS AS REQUIRED TO MAINTAIN SEPARATION WITH OTHER UTILITIES, REFER TO STANDARD PLAN 544
## LEGEND AND APPROVED PARTS LIST

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>ACCEPTABLE MANUFACTURER</th>
<th>MODELS</th>
</tr>
</thead>
<tbody>
<tr>
<td>①</td>
<td>DUCTILE IRON PIPE, 3” TO 12” DIAMETER, PRESSURE CLASS 350, CEMENT-MORTAR LINING, ASPHALTIC INTERIOR/EXTERIOR COATING, AWWA C150 / C151 / C104</td>
<td>U.S. PIPE (1) PACIFIC STATES</td>
<td>STANDARD JOINT PIPE: PUSH ON TYTON JOINT</td>
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<tr>
<td></td>
<td></td>
<td>U.S. PIPE (1) PACIFIC STATES</td>
<td>RESTRAINED JOINT PIPE: THRUST-LOCK TR FLEX</td>
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<tr>
<td>②</td>
<td>POLYVINYL CHLORIDE (PVC) PIPE, C.I.O.D., C900, DR 18, INTEGRAL BELL JOINT</td>
<td>JM EAGLE (1)</td>
<td>STANDARD JOINT PIPE: BLUE BRUTE</td>
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<tr>
<td>③</td>
<td>DUCTILE IRON FITTINGS, 3” TO 12” DIAMETER, FULL BODY, PRESSURE CLASS 350, CEMENT MORTAR LINED, ASPHALTIC EXTERIOR COATING, AWWA C153 / C104</td>
<td>U.S. PIPE (1) PACIFIC STATES</td>
<td>PUSH ON STYLE FITTING: TYTON JOINT FLANGED FITTING:</td>
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<tr>
<td></td>
<td>FLANGES: AWWA C110 / C115, CLASS 125 FLANGE WITH FULL FACE OR RING FLANGE-TYTE GASKETS</td>
<td>U.S. PIPE (1) PACIFIC STATES</td>
<td>RESTRAINED JOINT PIPE: THRUST-LOCK TR FLEX</td>
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<tr>
<td>④</td>
<td>FITTINGS – DUCTILE IRON MECHANICAL JOINT PIPE WITH RETAINER GLANDS OR SST TIE ROD / NUT RESTRAINTS, AWWA C110 / C111 / C104</td>
<td>EBBA IRON (1)</td>
<td>FITTINGS: MECHANICAL JOINT RETAINER GLANDS: MEGALUG SERIES 1100, STD T-BOLTS AND NUTS</td>
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<td>⑤</td>
<td>POLYETHYLENE ENCASEMENT, HIGH DENSITY CROSS LAMINATED (HDCL) POLYETHYLENE FILM, AWWA C105 &amp; AWWA C703E METHODS A &amp; C</td>
<td>CHRISTY’S (1)</td>
<td>AWWA C703E METHOD A (4 MIL) AT PIPE AND AWWA C703E METHOD C (10 MIL) AT BOLT-TYPE JOINTS, FITTINGS, AND VALVES</td>
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<tr>
<td>⑥</td>
<td>DETECTABLE UNDERGROUND WARNING TAPE, 5-MIL MINIMUM, ALUMINUM BACKING, BLUE BACKGROUND, 6” WIDE</td>
<td>SETON (1) 85525</td>
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<tr>
<td>⑦</td>
<td>TRACER WIRE: 12 GA. SOLID, BLUE PVC INSULATION; WIRE-WIRE CONNECTORS SILICONE-FILLED WIRE NUTS</td>
<td>CONNECTORS: IDEAL INDUSTRIES (1)</td>
<td>TWISTER DB PLUS OR APP’D EQUAL</td>
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<tr>
<td>⑧</td>
<td>WAX TAPE COATING SYSTEM, APPLY TO ALL BURIED BOLTS AND NUTS INCLUDING MECHANICAL JOINT RESTRAINT SYSTEMS, AWWA C 217. REFER TO STD. PLAN 534.</td>
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</table>

## DETAIL NOTES

1. COORDINATE PIPE SIZE WITH APPROVED PLANS PRIOR TO ORDERING MATERIALS
2. LOCATE MAIN, FITTINGS, VALVES, AND FIRE LINES PER APPROVED PLANS
3. DUCTILE IRON PIPE IS REQUIRED WHEN WATER SYSTEM DESIGN PRESSURE EXCEEDS 150 PRESSURE RATING
4. PROVIDE “DOMESTIC” DUCTILE IRON FITTINGS
5. PROVIDE DUCTILE IRON RESTRAINED JOINT PIPE ON FIRE LINES, HYDRANT LINES, AND WHERE REQUIRED ON THE APPROVED PLANS
6. PROVIDE 316 STAINLESS STEEL BOLTS AND NUTS WITH ANTI-SEIZE LUBRICATION ON ALL FLANGED CONNECTIONS
7. REFER TO STANDARD PLAN 534 FOR SUPPLEMENTAL EXTERNAL CORROSION PROTECTION REQUIREMENTS. WHEN CATHODIC PROTECTION IS REQUIRED REFER TO STD. PLANS 534-538.
8. REFER TO SPECIFICATIONS FOR FLUSHING, HYDROSTATIC TESTING, AND DISINFECTING REQUIREMENTS
9. (1) DENOTES “OR EQUAL” MANUFACTURER AND MODEL. SUBMIT IN ACCORDANCE WITH CITY STANDARDS

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**WATER MAIN AND FIRE LINES**

PARK CITY MUNICIPAL CORPORATION

**DATE**

4/2014

**REV.**

0

**STD. PLAN**

540 S
## LEGEND AND APPROVED PARTS LIST

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>ACCEPTABLE MANUFACTURER</th>
<th>MODELS</th>
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<tbody>
<tr>
<td>①</td>
<td>BRONZE SERVICE SADDLE: DI &amp; AC PIPE; DOUBLE STRAP PVC PIPE; TWO-PIECE BOLTED</td>
<td><strong>MUELLER</strong></td>
<td>DI &amp; AC PIPE: BR2B SERIES, 1-1/2&quot; SERVICE, CC THDS; 2&quot; SERVICE FIP THDS PVC PIPE: H-13000 SERIES, 1-1/2&quot; SERVICE, CC THDS; 2&quot; SERVICE FIP THDS</td>
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<td></td>
<td></td>
<td><strong>FORD</strong></td>
<td>DI &amp; AC PIPE: STYLE 202B 1-1/2&quot; SERVICE, CC THDS; 2&quot; SERVICE, FIP THDS PVC PIPE: 1-1/2&quot; SERVICE, STYLE S902, CC THDS; 2&quot; SERVICE, STYLE S912, FIP THDS</td>
</tr>
<tr>
<td>②</td>
<td>BRASS CORPORATION STOP, INLET CC THREAD, OUTLET CTS COMPRESSION</td>
<td><strong>MUELLER</strong></td>
<td>B-25008N</td>
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<tr>
<td></td>
<td></td>
<td><strong>FORD</strong></td>
<td>FB1100-(SERVICE SIZE)-G-NL</td>
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<tr>
<td>③</td>
<td>POLYETHYLENE ENCASEMENT, HIGH DENSITY CROSS LAMINATED (HDCL) POLYETHYLENE FILM, AWWA C105 &amp; AWWA C703E METHOD C</td>
<td>CHRISTY’S OR APPROVED EQUAL</td>
<td>AWWA C703E METHOD C (4 MIL)</td>
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<tr>
<td>④</td>
<td>DETECTABLE UNDERGROUND WARNING TAPE, 5-MIL MINIMUM, ALUMINUM BACKING BLUE BACKGROUND, 6&quot; WIDE</td>
<td><strong>SETON OR APPV’D EQUAL</strong></td>
<td>85525</td>
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<tr>
<td>⑤</td>
<td>WATER SERVICE LINE: HIGH-DENSITY POLYETHYLENE TUBING (CTS), BLUE, SDR 9, AWWA C901 1-1/2&quot; DIA. SERVICE: 3/4&quot; AND 1&quot; SINGLE METER 1-1/2&quot; DIA. SERVICE: 3/4&quot; AND 1&quot; DUAL METERS 2&quot; DIA. SERVICE: 1-1/2&quot; AND 2&quot; SINGLE METER 2&quot; DIA. SERVICE: 1-1/2&quot; DUAL METERS</td>
<td><strong>ADS OR APPV’D EQUAL</strong></td>
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</tr>
<tr>
<td>⑥</td>
<td>WATER SERVICE LINE: HIGH-DENSITY POLYETHYLENE TUBING (CTS), BLUE, SDR 9, AWWA C901; OR, TYPE K COPPER, SOFT, AWWA C800</td>
<td><strong>ADS OR APPV’D EQUAL</strong></td>
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<td>⑦</td>
<td>TRACER WIRE: 12 GA. SOLID, BLUE PVC INSULATION; WIRE-WIRE CONNECTORS SILICONE-FILLED WIRE NUTS</td>
<td><strong>IDEAL INDUSTRIES</strong></td>
<td>TWISTER DB PLUS OR APP’D EQUAL</td>
</tr>
</tbody>
</table>

## DETAIL NOTES

1. COORDINATE SERVICE SIZE WITH CITY PRIOR TO ORDERING MATERIALS
2. LOCATE SERVICE PER APPROVED PLANS
3. NO SERVICE LINE FITTINGS ALLOWED BETWEEN CORPORATION STOP AND METER VAULT CURB STOP VALVE
4. APPLY WAX TAPE COATING SYSTEM TO SERVICE SADDLE BOLTS AND NUTS, AWWA C217. SYSTEM TO INCLUDE FILLER MATERIAL, TAPE COATING, AND PROTECTIVE OUTERWRAP. DENSO NORTH AMERICA, TRENTON, OR APPROVED EQUAL (STD. PLAN 534)
OUTSIDE WATER METER VAULT (STD. PLAN 527), SIZE AS REQUIRED

FLANGE CONNECTION

1 2 8

5

7 9

6

4 8

12" MIN

WATER METER

DISMANTLING JOINT

GATE VALVE

TO BUILDING FIRE RISER

12" MIN

CHECK VALVE, SEE NOTE 1

PROPERTY LINE

PROPERTY OWNER'S SERVICE LINE AND RESPONSIBILITY

CITY RESPONSIBILITY

3" AND LARGER

### LEGEND

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<tr>
<td>1</td>
<td>EXISTING MAIN</td>
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<tr>
<td>2</td>
<td>DUCTILE IRON TAPPING SLEEVE OR DUCTILE IRON TEE</td>
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<tr>
<td>3</td>
<td>TAPPING VALVE OR FLG X MJ GATE VALVE (STD PLAN 570 AND 572)</td>
</tr>
<tr>
<td>4</td>
<td>DUCTILE IRON PIPE FULLY RESTRAINED (STD. PLAN 541)</td>
</tr>
<tr>
<td>5</td>
<td>WATER SERVICE LINE (STD. PLAN 541)</td>
</tr>
<tr>
<td>6</td>
<td>THRUST BLOCK (STD. PLAN 561)</td>
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<tr>
<td>7</td>
<td>BRONZE DOUBLE STRAP SERVICE SADDLE (STD. PLAN 541)</td>
</tr>
<tr>
<td>8</td>
<td>POLYETHYLENE WRAPPED (STD. PLAN 540-A)</td>
</tr>
<tr>
<td>9</td>
<td>CORPORATION STOP (STD. PLAN 541)</td>
</tr>
</tbody>
</table>

### NOTES:

1. DOUBLE CHECK VALVE OR REDUCED PRESSURE PRINCIPLE BACKFLOW ASSEMBLY TO BE DETERMINE BY BUILDING AND WATER DEPARTMENTS BASED ON DEGREE OF HAZARD POSED BY FIRE SPRINKLER PROTECTION SYSTEM USE.

2. WATER METER 3-INCH AND LARGER WILL REQUIRE A DUCTILE IRON TEE, VALVING, AND DISMANTLING JOINT. A SITE SPECIFIC DESIGN IS REQUIRED.

3. A METER BYPASS LINE IS REQUIRED FOR COMMERCIAL APPLICATIONS.
TABLE OF DIMENSIONS

<table>
<thead>
<tr>
<th>OBSTRUCTION</th>
<th>SEWER MAIN</th>
<th>STORM DRAIN OR CULVERT</th>
<th>OTHER</th>
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<tr>
<td>'a'</td>
<td>18&quot;</td>
<td>SEE STD. PLAN 546</td>
<td>12&quot; MIN</td>
</tr>
<tr>
<td>'b'</td>
<td>5'-0&quot;</td>
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<td>3'-0&quot; MIN</td>
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NOTES:
1. ALL CULINARY WATER MAINS AND LATERALS SHALL BE INSTALLED ABOVE SEWER LINES UNLESS APPROVED BY PARK CITY AND UTAH DIVISION OF DRINKING WATER.
METHOD A

NOTES:

1. RESTRAINED JOINT PIPE REQUIRED
2. ALL CULINARY WATER MAINS AND LATERALS SHALL BE INSTALLED ABOVE SEWER LINES UNLESS APPROVED BY PARK CITY AND UTAH DIVISION OF DRINKING WATER.

### TABLE OF DIMENSIONS

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<thead>
<tr>
<th>OBSTRUCTION</th>
<th>'a'</th>
<th>'b'</th>
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</thead>
<tbody>
<tr>
<td>SEWER</td>
<td>18&quot; MIN</td>
<td>20' MIN</td>
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<tr>
<td>STORM DRAIN OR CULVERT</td>
<td>SEE STD. PLAN 546</td>
<td>O.D. + 6'</td>
</tr>
<tr>
<td>OTHER</td>
<td>12&quot; MIN</td>
<td>O.D. + 4'</td>
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</table>
**TABLE OF DIMENSIONS**

<table>
<thead>
<tr>
<th>OBSTRUCTION</th>
<th>'a'</th>
<th>'b'</th>
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</thead>
<tbody>
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<td>SEWER</td>
<td>18&quot; MIN</td>
<td>20' MIN</td>
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<tr>
<td>STORM DRAIN OR CULVERT</td>
<td>SEE STD. PLAN 546</td>
<td>O.D. + 6'</td>
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<td>O.D. + 4'</td>
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**METHOD B**

**TABLE OF DIMENSIONS**

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<td>SEE STD. PLAN 546</td>
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<tr>
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**METHOD C**

**NOTES:**

1. RESTRAINED JOINT PIPE REQUIRED
2. ALL CULINARY WATER MAINS AND LATERALS SHALL BE INSTALLED ABOVE SEWER LINES UNLESS APPROVED BY PARK CITY AND UTAH DIVISION OF DRINKING WATER.
HDPE PIPE WATERLINE LOOP MINIMUM REQUIREMENTS:

1. GENERAL: PIPE SHALL BE HDPE 4710 DR11 WITH AN INSIDE DIAMETER EQUAL TO OR GREATER THAN THE CONNECTING PIPE ON BOTH ENDS.
2. PIPE SHALL BE FUSION WELDED ALONG LENGTH AND FULLY RESTRAINED AT TRANSITIONS TO DIFFERING PIPE MATERIALS WITH FLANGES OR OTHER CITY APPROVED METHOD.
3. FITTINGS ALONG THE LOOP LENGTH SHALL BE HDPE UNLESS OTHERWISE APPROVED BY OWNER.
4. BENDING RADIUS NOT TO EXCEED PIPE MANUFACTURES RECOMMENDATIONS.
5. REDUCERS AND TRANSITION COUPLINGS SHALL BE PROVIDED ON BOTH ENDS AS REQUIRED AND SHALL BE HDPE OR DUCTILE IRON. CATHODIC PROTECTION REQUIRED ON FERROUS COMPONENTS PER STD. PLAN 534.
6. ALL CULINARY WATER MAINS AND LATERALS SHALL BE INSTALLED ABOVE SEWER LINES UNLESS APPROVED BY PARK CITY AND UTAH DIVISION OF DRINKING WATER.
TRACER WIRE TERMINATIONS AT VALVE BOX

NOTES:

1. INSTALL TRACER WIRE ON ALL CONSTRUCTED (METALLIC AND NON-METALLIC) PIPE.

2. ALL SPLICES SHALL BE SILICONE FILLED WIRE CONNECTORS.

3. PROVIDE TRACER WIRE CONNECTIONS AT ALL VALVE BOXES AND PER STD. PLAN 545-B TO MAINTAIN A MAXIMUM DISTANCE BETWEEN CONNECTIONS OF NO GREATER THAN 500 FEET.

4. AT VAULT AND MANHOLE LOCATIONS COIL WIRE INSIDE.
NOTES:

1. INSTALL LOCATOR WIRE ON ALL CONSTRUCTED (METALLIC AND NON-METALLIC) PIPE.

2. ALL SPLICES SHALL BE WITH SILICONE FILLED WIRE CONNECTORS.

3. PROVIDE LOCATOR WIRE CONNECTIONS PER THIS DETAIL AS REQUIRED TO MAINTAIN A MAXIMUM DISTANCE BETWEEN CONNECTIONS OF NO GREATER THAN 500 FEET. CONTRACTOR SHALL COORDINATE EACH LOCATION WITH OWNER.

4. LOCATOR WIRE AND WARNING TAPE NOT REQUIRED WHERE DIRECTIONAL DRILLING WILL TAKE PLACE.

5. AT VAULT LOCATIONS COIL WIRE INSIDE OF VAULT.
ONE LINE IN TRENCH

TWO LINES IN TRENCH

NOTES:

1. WHERE WATERLINES INTERSECT STORM DRAINS OR CULVERTS, INSTALL WATERLINE WITH FROST SHIELD. EXTEND FROST SHIELD A MINIMUM OF 3-FEET ON BOTH SIDES STORM DRAIN OR CULVERT.

2. INSULATION SHALL BE 3-INCH THICK INSULATION BOARD (DOW STYROFOAM HIGHLOAD - 60 INSULATION OR APPROVED EQUAL).

3. ALL BACKFILL MATERIAL, INCLUDING SPECIAL BEDDING AND PIPE ZONE MATERIAL, SHALL BE COMPACTED TO AT LEAST 95% DENSITY TO PROVIDE AN ADEQUATE FOUNDATION FOR THE CULVERT AND ROADWAY.

4. INSTALL TRACER WIRES AS REQUIRED (STD. PLAN 540, 541 AND 545)
HORIZONTAL SEPARATION REQUIREMENTS

VERTICAL SEPARATION REQUIREMENTS

NOTES:
1. SEE STD. PLAN 547-B FOR HORIZONTAL AND VERTICAL SEPARATION REQUIREMENT NOTES.
2. ALL CULINARY WATER MAINS AND LATERALS SHALL BE INSTALLED ABOVE SEWER LINES UNLESS APPROVED BY PARK CITY AND UTAH DIVISION OF DRINKING WATER.
HORIZONTAL SEPARATION

NOTES:

1. ZONE 1: WATER LINE AND SEWER LINE SEPARATED 10 FEET OR GREATER - NO SPECIAL REQUIREMENTS
   ZONE 2: A) WATER LINE SEPARATED BY AT LEAST 6 FEET AT OUTSIDE PIPE WALLS
   AND
   B) BOTTOM OF WATER LINE IS AT LEAST 18 INCHES ABOVE TOP OF SEWER LINE
   AND
   C) WATER LINE CONSTRUCTED WITH MECHANICAL, RESTRAINED JOINT PIPE
   AND
   SITE SPECIFIC REQUIREMENTS APPROVED BY DIVISION OF ENVIRONMENTAL QUALITY,
   DIVISION OF DRINKING WATER
   ZONE 3: WATER LINE AND SEWER LINE SEPARATION LESS THAN 6 FEET - NOT ALLOWED
2. SERVICE LINE TAPS NOT ALLOWED IN ZONE 2.
3. SERVICE LINE TAPS WITHIN ZONE 3 ALLOWED ONLY BY SITE SPECIFIC APPROVAL BY DIVISION OF ENVIRONMENTAL QUALITY, DIVISION OF DRINKING WATER
4. MAINTAIN 10 FEET HORIZONTAL SEPARATION AND 18 INCHES VERTICAL SEPARATION ABOVE SANITARY SEWER FORCE MAINS
5. CONSULT SNYDERVILLE BASIN WATER RECLAMATION DISTRICT FOR SANITARY SEWER REQUIREMENTS AND SEWER LINE MODIFICATIONS

VERTICAL SEPARATION

NOTES:

1. ZONE 1: WATER LINE ABOVE SEWER LINE AND SEPARATED 18 INCHES OR GREATER - NO SPECIAL REQUIREMENTS
   ZONE 2: WATER LINE ABOVE SEWER LINE SEPARATED LESS THAN 18 INCHES - LOOP WATER LINE,
   REFER TO STD. PLAN 543. INSTALL CONTROLLED LOW-STRENGTH MATERIAL (CLSM),
   "FLOWABLE FILL", 150 PSI MAXIMUM MIX DESIGN WITHIN WATER PIPE ZONE AND TO 18
   INCHES ABOVE SEWER LINE
   ZONE 3: WATER LINE BELOW SEWER LINE SEPARATED LESS THAN 18 INCHES - LOOP WATER LINE,
   REFER TO STD. PLAN 543. INSTALL CONTROLLED LOW-STRENGTH MATERIAL (CLSM),
   "FLOWABLE FILL", 150 PSI MAXIMUM MIX DESIGN WITHIN WATER PIPE ZONE AND TO 18
   INCHES ABOVE SEWER LINE
   ZONE 4: WATER LINE BELOW SEWER LINE SEPARATED GREATER THAN 18 INCHES - CENTER ONE FULL
   UNCUT LENGTH OF WATER PIPE OVER THE CROSSING AND PROVIDE MECHANICAL
   RESTRANDED PIPE JOINTS UNTIL THE WATER PIPE EXTENDS TO A DISTANCE OF 10 FEET
   PERPENDICULAR TO EACH SIDE OF THE SEWER LINE. INSTALL CONTROLLED
   LOW-STRENGTH MATERIAL (CLSM), "FLOWABLE FILL", 150 PSI MAXIMUM MIX DESIGN WITHIN
   WATER PIPE ZONE AND TO 18 INCHES ABOVE SEWER LINE
2. SERVICE LINE TAPS NOT ALLOWED IN ZONES 2 AND 3.
3. MAINTAIN 10 FEET HORIZONTAL SEPARATION AND 18 INCHES VERTICAL SEPARATION ABOVE SANITARY SEWER FORCE MAINS
4. CONSULT SNYDERVILLE BASIN WATER RECLAMATION DISTRICT FOR SANITARY SEWER REQUIREMENTS AND SEWER LINE MODIFICATIONS
5. ALL CULINARY WATER MAINS AND LATERALS SHALL BE INSTALLED ABOVE SEWER LINES UNLESS APPROVED BY PARK CITY AND UTAH DIVISION OF DRINKING WATER.
BEARING AREA
UNDISTURBED SOIL (TYP)

THE AREA OF BEARING PER
THRUST BLOCK TO EQUAL 1/2 THE
AREA SPECIFIED FOR THE
LARGEST PIPE OR FITTING SIZE

MINIMUM BEARING AREA
IN SQ. FT.

<table>
<thead>
<tr>
<th>SIZE OF PIPE</th>
<th>TEES, VALVES, DEAD ENDS</th>
<th>90° BENDS</th>
<th>45° BENDS</th>
<th>22 1/2° BENDS</th>
<th>11 1/2° BENDS</th>
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<tr>
<td>4&quot;</td>
<td>3.5</td>
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NOTE:
1. RESTRAINT SIZING IS BASED UPON A MAXIMUM OPERATING PRESSURE OF 150 PSI AND A TEST PRESSURE OF 250 PSI, AND A MINIMUM SOIL BEARING STRENGTH OF 2,000 PSF. OPERATING PRESSURES IN EXCESS OF 150 PSI OR SOILS WITH LESS THAN 2,000 POUND BEARING STRENGTH WILL REQUIRE SPECIAL DESIGN.
2. PIPE SIZE EXCEEDING 16" REQUIRES SPECIAL DESIGN.
3. SIDE WALLS OF THRUST BLOCK SHALL BE FORMED WITH VERTICAL SIDES.
4. DO NOT ENCASE ADJACENT FITTINGS AND BOLTS.
5. DO NOT THRUST AGAINST ADJACENT PIPES.
6. PLACE PE WRAP PRIOR TO INSTALLING BLOCKING.
### TABLE OF DIMENSIONS

<table>
<thead>
<tr>
<th>SIZE OF PIPE (NOMINAL DIAMETER)</th>
<th>VERTICAL BEND IN DEGREES</th>
<th>CONCRETE BLOCKING IN CUBIC FEET</th>
<th>SIDE OF CUBE - FEET</th>
<th>DIAMETER OF SHANK OR REBAR RODS - INCH</th>
<th>DEPTH OF ROD IN CONCRETE - FEET</th>
</tr>
</thead>
<tbody>
<tr>
<td>4&quot;</td>
<td>11 1/4</td>
<td>9.5</td>
<td>2.2</td>
<td>5/6&quot;</td>
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<tr>
<td></td>
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<tr>
<td>6&quot;</td>
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<td>2.7</td>
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<td>11 1/4</td>
<td>51</td>
<td>3.8</td>
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<tr>
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<td>102</td>
<td>4.7</td>
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<td>12&quot;</td>
<td>11 1/4</td>
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<tr>
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<td>249</td>
<td>6.3</td>
<td>7/8&quot;</td>
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</tr>
</tbody>
</table>

### TYPE A RESTRAINT

FOR 11 3/4" - 22 1/2" VERTICAL BENDS

**NOTE:**

1. RESTRAINT SIZING IS BASED UPON A MAXIMUM OPERATING PRESSURE OF 150 PSI AND A TEST PRESSURE OF 250 PSI, AND A MINIMUM SOIL BEARING STRENGTH OF 2,000 PSF. OPERATING PRESSURES IN EXCESS OF 150 PSI OR SOILS WITH LESS THAN 2,000 POUND BEARING STRENGTH WILL REQUIRE SPECIAL DESIGN.

2. PIPE SIZE EXCEEDING 16" REQUIRES SPECIAL DESIGN.

3. SIDE WALLS OF THRUST BLOCK SHALL BE FORMED WITH VERTICAL SIDES.

4. DO NOT ENCASE ADJACENT FITTINGS AND BOLTS.

5. DO NOT THRUST AGAINST ADJACENT PIPES.

6. APPLY WAX TAP COATING SYSTEM TO EXPOSED SHANK AND REBAR RODS, AWWA C217. SYSTEM TO INCLUDE FILLER MATERIAL, TAPE COATING, AND PROTECTIVE OUTER WRAP. DENSO N.A., TRENTON, OR APPROVED EQUAL.

7. SHANK AND REBAR MATERIALS SHALL BE EPOXY COATED AT LEAST 15 MILS THICK.

8. REINFORCEMENT SHALL BE DEFORMED STEEL, ASTM A 615. MINIMUM STRESS YIELD STRENGTH OF STEEL TIE-DOWN BARS IS 70,000 KSI.
TABLE OF DIMENSIONS

<table>
<thead>
<tr>
<th>SIZE OF PIPE (NOMINAL DIAMETER)</th>
<th>VERTICAL BEND IN DEGREES</th>
<th>CONCRETE BLOCKING IN CUBIC YARDS</th>
<th>SIDE OF CUBE - FEET</th>
<th>DIAMETER OF SHANK OR REBAR RODS - INCH</th>
<th>DEPTH OF ROD IN CONCRETE - FEET</th>
</tr>
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<tbody>
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<td>45</td>
<td>10.4</td>
<td>6.8</td>
<td>3/4&quot;</td>
<td>4.0</td>
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<td>45</td>
<td>14.0</td>
<td>7.3</td>
<td>3/4&quot;</td>
<td>4.0</td>
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<td>45</td>
<td>18.1</td>
<td>7.9</td>
<td>3/4&quot;</td>
<td>4.0</td>
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</tbody>
</table>

**TYPE B RESTRAINT**

FOR 45° VERTICAL BENDS

**NOTE:**

1. RESTRAINT SIZING IS BASED UPON A MAXIMUM OPERATING PRESSURE OF 150 PSI AND A TEST PRESSURE OF 250 PSI, AND A MINIMUM SOIL BEARING STRENGTH OF 2,000 PSF. OPERATING PRESSURES IN EXCESS OF 150 PSI OR SOILS WITH LESS THAN 2,000 POUND BEARING STRENGTH WILL REQUIRE SPECIAL DESIGN.
2. PIPE SIZE EXCEEDING 16" REQUIRES SPECIAL DESIGN.
3. SIDE WALLS OF THRUST BLOCK SHALL BE FORMED WITH VERTICAL SIDES.
4. DO NOT ENCASE ADJACENT FITTINGS AND BOLTS.
5. DO NOT THRUST AGAINST ADJACENT PIPES.
6. APPLY WAX TAP COATING SYSTEM TO EXPOSED SHANK AND REBAR RODS. AWWA C217. SYSTEM TO INCLUDE FILLER MATERIAL, TAPE COATING, AND PROTECTIVE OUTER WRAP. DENSO N.A., TRENTO, OR APPROVED EQUAL.
7. SHANK AND REBAR MATERIALS SHALL BE EPOXY COATED AT LEAST 15 MILS THICK.
8. REINFORCEMENT SHALL BE DEFORMED STEEL, ASTM A 615. MINIMUM STRESS YIELD STRENGTH OF STEEL TIE-DOWN BARS IS 70,000 KSI.

TIE-DOWN THRUST RESTRAINTS

STD. PLAN

562-B
FINISHED GRADE

VALVE BOX COLLAR (STD. PLAN 572)

COMPACTED BACKFILL

EXTENSION STEM WITH 2"
OPERATING NUT 1'-0"
BELOW GRADE (SEE
DETAIL BELOW)

TRACER WIRE
(STD. PLAN 544)

2" AWWA SQUARE
OPERATING NUT

3/8" FLAT PLATE
CENTERING GUIDE

1-1/4" DIA. STEEL SHAFT
EXTENSION MACHINE TO
MATCH NUT

EXTENSION STEM

NOTES:

1. REFER TO STD. PLAN 570 S FOR LEGEND ITEMS, APPROVED PARTS LIST, AND DETAIL NOTES.
**LEGEND AND APPROVED PARTS LIST**

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>ACCEPTABLE MANUFACTURER</th>
<th>MODELS</th>
</tr>
</thead>
<tbody>
<tr>
<td>①</td>
<td>BUTTERFLY VALVE, NRS, AWWA C504 CLASS 250B, 250 PSI, SST BONNET BOLTS, FLANGED END CONNECTIONS</td>
<td>MUELLER</td>
<td>LINESEAL XPII, 5227 SERIES</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CLOW</td>
<td>MODEL 4500</td>
</tr>
<tr>
<td>②</td>
<td>GATE VALVE, NRS, AWWA C509, 250 PSI, SST BONNET BOLTS, END CONNECTIONS PER FOLLOWING: ON TEES: FLG x FLG IN-LINE VALVES: MJ x MJ OTHERS: MJ x MJ, OR PER DESIGN</td>
<td>MUELLER</td>
<td>SERIES 2360</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CLOW</td>
<td>MODEL 2639</td>
</tr>
<tr>
<td>③</td>
<td>POLYETHYLENE ENCASEMENT, HIGH DENSITY CROSS LAMINATED (HDCL) POLYETHYLENE FILM, AWWA C105 &amp; AWWA C703E METHOD C</td>
<td>CHRISTY’S OR APPROVED EQUAL</td>
<td>AWWA C703E METHOD C (4 MIL)</td>
</tr>
</tbody>
</table>

**DETAIL NOTES**

1. VALVES TO BE RATED FOR WORKING AND TEST PRESSURE OF WATER MAIN
2. PROVIDE FUSION BONDED EPOXY COATING ON GATE VALVE AND BUTTERFLY VALVE INTERIOR AND EXTERIOR
3. PROVIDE 316 SST BOLTS AND NUTS WITH ANTI-SEIZE LUBRICANT ON FLANGED CONNECTIONS
4. DO NOT LOCATE VALVE AND VALVE BOX WITHIN CURB OR GUTTER
5. CENTER VALVE BOX ON VALVE OPERATING NUT
6. SET VALVE BOX PLUMB WITHOUT DEFLECTIONS IN VALVE BOX JOINTS
7. PROVIDE ADDITIONAL SLIP BASE FOR VALVE BOX ON 7’ BURY WATER MAIN
8. APPLY WAX TAPE COATING SYSTEM TO VALVE BONNET BOLTS AND ALL OTHER BURIED BOLTS AND NUTS, AWWA C217. SYSTEM TO INCLUDE FILLER MATERIAL, TAPE COATING, AND PROTECTIVE OUTERWRAP. DENSO NORTH AMERICA, TRENTON, OR APPROVED EQUAL (STD. PLAN 534)
COLD JOINT

#4 HOOP STEEL

6"

CONCRETE TO BE SET 1/4 MIN. TO 3/4 MAX. BELOW PAVEMENT LIP ALL AROUND

ASPHALT PAVEMENT
(THICKNESS VARIES)

BASE COURSE

SLIP SLEEVE
(STD. PLAN 570)

SLIP SLEEVE
(STD. PLAN 570)

ASPHALT PAVEMENT

CONCRETE PAVEMENT

SLIP SLEEVE
(STD. PLAN 570)

LANDSCAPED AREA

VALVE BOX
COLLAR

PARK CITY MUNICIPAL CORPORATION
WATER

DATE
3/2014

REV.
0

STD. PLAN
572
GENERAL NOTES

1. ALL WORK SHALL CONFORM TO PARK CITY DESIGN STANDARDS, CONSTRUCTION SPECIFICATIONS, AND STANDARD DRAWINGS.

2. SUBMIT SHOP DRAWINGS TO DESIGN ENGINEER AND CITY ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION. INCLUDE MECHANICAL, STRUCTURAL, ELECTRICAL AND INSTRUMENT DRAWINGS IDENTIFYING CONDUIT, CONDUCTOR, CABLE, SIZE AND ROUTINGS FOR POWER, GROUNDING, INSTRUMENTATION, AND CONTROLS, OPENINGS, PIPE, VALVES, HATCH, AND ALL VAULT COMPONENTS.

3. VAULT BACKFILL: STRUCTURAL FILL MATERIAL COMPACTED TO 95% MINIMUM OF MODIFIED PROCTOR DENSITY.

4. DUCTILE IRON PIPE, FITTINGS, COUPLERS, FLANGES, ETC. SHALL BE IN ACCORDANCE WITH AWWA C153, C111, AND C110 AND RATED FOR A MINIMUM 250 PSI WORKING PRESSURE.


6. FITTINGS: FULL BODY AWWA C110. NO COMPACT FITTINGS. DOMESTIC "MADE IN USA".

7. DUCTILE IRON PIPE AND FITTINGS: UNCOATED. PRIME AND PAINT WITH NSF APPROVED HIGH SOLIDS EPOXY PAINT, TNEMEC POTA-POX N140 OR PRE-APPROVED EQUAL. HIGH PRESSURE SIDE, LIGHT BLUE. LOW PRESSURE SIDE, OFF WHITE.

8. ALL VALVES INSIDE VAULT SHALL BE RATED FOR 250 PSI WORKING PRESSURE, OR HIGHER IF REQUIRED FOR PROJECT.

9. VAULT SHALL BE PRECAST CONCRETE. APPROVAL MUST BE GIVEN TO USE CAST IN PLACE CONCRETE. VAULT SHALL BE DESIGNED FOR HS-20 LOADING. THE LOCATION OF THE PRECAST JOINTS MUST BE APPROVED. SITE SPECIFIC APPROVAL REQUIRED.

10. SEAL ALL JOINTS WITH PREFORMED FLEXIBLE SEALANT CONFORMING TO ASTM C990, AND WRAP WITH EXTERNAL JOINT SEALANT MEETING ASTM C877. FILL JOINTS INSIDE VAULT WITH CAULK OR GROUT.

11. PROVIDE (2) 8 HR DAYS FOR TESTING, STARTUP, AND TRAINING FOR PRV VALVES WITH MANUFACTURER REPRESENTATIVE.

12. SEAL ALL VAULT PENETRATIONS WITH HYDROPHILIC NON-SHRINK GROUT.
ZONE VALVE, NORMALLY CLOSED
8' WIDE, 6" THICK CONCRETE ACCESS TO VAULT

2'-6" CURB & GUTTER (TYP)

5'-0" PARK STRIP (TYP)

4'-0" SIDEWALK (TYP)

VAULT LOCATION PLAN

NOTES:
1. FOR GENERAL NOTES, SEE STD. PLAN 573-A, AND FOR # KEYED ITEMS, SEE STD. PLAN 573-C.3 AND C.4.

2. SITE SPECIFIC APPROVAL REQUIRED. NEW EASEMENTS WILL BE REQUIRED IF VAULT IS LOCATED OUTSIDE OF PROPERTY LINE.
VAULT SECTION
NTS

573-B.1

4' MIN
IF NO SIDEWALK

5' MIN

6'

6'
BASIC VAULT - PLAN VIEW

NOTE:

1. FOR GENERAL NOTES, SEE STD. PLAN 573-A, AND FOR # KEYED ITEMS, SEE STANDARD PLAN 573-C.3 AND C.4.

2. SEE PROJECT SITE PLAN FOR ACTUAL LOCATION OF VENT STAND PIPES, HATCH, SUMP, AND HIGH/LOW PRESSURE SIDES.
NOTES:
1. FOR GENERAL NOTES, SEE STD. PLAN 573-A, AND FOR # KEYED ITEMS, SEE STD. PLAN 573-C.3 AND C.4.
<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>INSTALL 8&quot; WATER MAIN WITH 90° DI BENDS WITH RETAINER GLANDS AND THRUST BLOCKS</td>
</tr>
<tr>
<td>2</td>
<td>INSTALL 8&quot; RESILIENT SEAT VALVE, FL X MJ, W/ TEE AND RETAINER GLANDS AND TRUST BLOCKS ON EXISTING WATER MAIN</td>
</tr>
<tr>
<td>3</td>
<td>8&quot;X6&quot; DI REDUCER FL X FL</td>
</tr>
<tr>
<td>4</td>
<td>8&quot; DI WATER MAIN, USE FLEXIBLE OR DUCTILE IRON MJ SLEEVES (POWERSEAL MODEL 3506 POWERMAX OR EQUAL) AS NECESSARY TO LEVEL EXISTING LINES</td>
</tr>
<tr>
<td>5</td>
<td>8&quot; DI PIPE</td>
</tr>
<tr>
<td>6</td>
<td>6&quot; CLA-VAL X 43 H (H STYLE STRAINER), FLANGED ENDS, 10 MESH SCREEN, CAGE SUPPORT, AND O-RING</td>
</tr>
<tr>
<td>7</td>
<td>6&quot; RESILIENT SEAT VALVE, FL X FL W/HAND WHEEL AND POSITION INDICATOR</td>
</tr>
<tr>
<td>8</td>
<td>6&quot; PRESSURE REDUCING VALVE, CLA-VAL MODEL 92-01, STRainers, Flow Control Shut Off Cocks, Flow Stabilizer, Stainless Steel Trim, Flange X Flange, and E-FLOW Meter Model X144 WITH 4-20mA OUTPUT TO READ AT SCADA (SUBMITTAL REQUIRED, PRESSURE SUSTAINING VALVE IS REQUIRED UNLESS NOTED OTHERWISE)</td>
</tr>
<tr>
<td>9</td>
<td>6&quot; DISMANTLING JOINT, ROMAC DJ 400, OR EQUAL.</td>
</tr>
<tr>
<td>10</td>
<td>1&quot; COMBINATION AIR VALVE WITH BALL VALVE ISOLATION, CLA-VAL MODEL 361-CAV564.3 OR EQUAL, VENT ABOVE GRADE. OBTAIN OWNER APPROVAL FOR VENT PIPE ROUTING. SEE STD. PLAN 576 FOR DETAILS (SIMILAR).</td>
</tr>
<tr>
<td>11</td>
<td>6&quot; X 6&quot; X 2&quot; DI TEE FL X FL X IP THREAD WITH TAP FOR PRESSURE GAUGE (ITEM 17), AND HOSE BIBBS (ITEM 22), AND AIR VALVE (ITEM 10)</td>
</tr>
<tr>
<td>12</td>
<td>2&quot; BRASS OR RIGID COPPER PIPE, SCHEDULE 40, THREADED, TYPICAL</td>
</tr>
<tr>
<td>13</td>
<td>2&quot; BRONZE 90° ELBOW, THREADED</td>
</tr>
<tr>
<td>14</td>
<td>2&quot; BRONZE UNION COUPLING, THREADED</td>
</tr>
<tr>
<td>15</td>
<td>2&quot; THREADED BRONZE BALL VALVE WITH HANDLE, 300 PSI, MUELLER 300</td>
</tr>
<tr>
<td>16</td>
<td>2&quot; PRESSURE REDUCING VALVE CLA-VAL 92-01, STRainers, Flow Control Shut Off Cocks, Flow Stabilizer, Stainless Steel Trim, THD X THD, AND E-FLOW Meter Model X144 WITH 4-20mA OUTPUT TO READ AT SCADA (SUBMITTAL REQUIRED, PRESSURE SUSTAINING VALVE IS REQUIRED UNLESS NOTED OTHERWISE)</td>
</tr>
<tr>
<td>17</td>
<td>2&quot; LIQUID FILLED PRESSURE GAUGE, GRADE B, UPSTREAM (0-300 PSI) DOWNSTREAM (0-200 PSI), THREADED, WITH STEM VALVE - SEE STD. PLAN 573-D.1</td>
</tr>
<tr>
<td>18</td>
<td>8&quot; MJ SOLID SLEEVE, MEGA-LUG RESTRAINTS WITH COR-TEN TEE BOLTS</td>
</tr>
<tr>
<td>ITEM</td>
<td>DESCRIPTION</td>
</tr>
<tr>
<td>------</td>
<td>-------------</td>
</tr>
<tr>
<td>19</td>
<td>2&quot; STEEL PIPE SUPPORT STAND, ADJUSTABLE (2 REQUIRED ON 6&quot; PIPE SYSTEM, 2 REQUIRED ON 2&quot; PIPE SYSTEM), SEE STD. PLAN 578</td>
</tr>
<tr>
<td>20</td>
<td>CORE DRILL OPENING WITH LINK-SEAL PIPE-TO-WALL SEAL. TYPICAL ON ALL OPENING. FILL OUTSIDE OPENINGS WITH NON-SHRINK GROUT AND CAULK</td>
</tr>
<tr>
<td>21</td>
<td>DRAIN SUMP, PIPE TO DAYLIGHT WITH DRAIN PIPE AND #4 SST RODENT PROTECTION SCREEN ON END OF PIPE. ROUTE AS SHOWN ON SITE PLAN. IF NO PIPE-TO-DAYLIGHT OPTION IS AVAILABLE, INSTALL A SUMP PUMP. SEE STD. PLAN 573-D.2</td>
</tr>
<tr>
<td>22</td>
<td>3/4&quot; HOSE BIBBS, I.P. THREAD - SEE STD. PLAN 573-D.1</td>
</tr>
</tbody>
</table>
| 23   | VAULT IN ACCORDANCE WITH 573-A AND 573-B  
A. PRECAST CONCRETE VAULT RATED FOR HS-20 LOADING. MAY BE CAST IN PLACE PER CITY APPROVAL. PROVIDE STAMPED STRUCTURAL DRAWINGS  
B. WATERPROOF OUTSIDE WALLS AND TOP SLAB PER IBC CODE FOR BURIED FOUNDATIONS |
| 24   | MECHANICAL JOINT DUCTILE IRON RETAINER GLAND WITH CONCRETE THRUST BLOCK, REINFORCE CONCRETE WITH (4) #4 EACH SIDE OF PIPE. |
| 25   | 6"X6"X3" DI TEE FLANGE X FLANGE X FLANGE |
| 26   | 2" CLA-VAC X 43H (H STYLE STRAINER), FLANGED ENDS, 10 MESH SST SCREEN, CAGE SUPPORT, AND O-RING |
| 27   | 3" PRESSURE RELIEF VALVE, CLA-VAL MODEL 50A-01 BKCX WITH MOUNTED LIMIT SWITCH OR MICRO SWITCH WITH SCADA CONNECT FOR "OPEN" ALARM CONDITION, SEE STD. PLAN 573-D.2 |
| 28   | IN-LINE GAUGE PRESSURE TRANSMITTER, ROEMOUNT MODEL 3051TG 800 PSI ASSEMBLED TO INTEGRAL, 2-VALVE, ROEMOUNT 306 MANIFOLD. SEE STD. PLAN 573-D.1. 4-20 MA ANALOG |
| 29   | FRP GRATING, 1-1/2" THICK MIN. AND RATED FOR 300 LB/FT PEDESTRIAN TRAFFIC. INSIDE TRENCH WIDTH TO BE 8" MINIMUM, AND 2-1/2" DEEP. |
| 30   | VAULT LADDER, SEE DETAIL 7 ON 573-D.4 |
| 31   | SUMP PUMP: 2" SUMP PUMP, TSURUMI MODEL HSZ2.4S-62 OR EQUAL. SUMP PUMP REQUIRED IF DRAIN TO DAYLIGHT NOT AVAILABLE, SEE STD. PLAN 573-D.2 |
| 32   | 6" DI PIPE. IF VAULT HAS POWER, THIS ITEM SHALL BE REPLACED WITH ITEMS 25 AND 27. |
WELDED BRACKETS
FASTEN DEVICE FOR SCREEN
CAP
VENT PIPE

MUSHROOM STYLE VENT CAP WITH NO. 14 SST WIRE MESH, NOTE 4

SCH 40 CORE- TEN STEEL PIPE
BREAK-OFF RISER
FLANGED CONNECTION WITH BREAK AWAY BOLTS DESIGNED TO SEPARATE IF RISER IS SHEARED
3/16" THICK SEEP RING

TWO LAYERS 10 MIL POLYETHYLENE WRAP AROUND STEEL PIPE EXTEND 3" ABOVE GRADE

2' SQUARE MIN. CONCRETE PAD (2500 PSI CONCRETE), LOCATION AS SHOWN ON PLANS FINISHED GRADE

1 - #4 CONTINUOUS (EACH SIDE OF PIPE)
#4 @ 12" OC
STEEL TO PVC TRANSITION SLEEVE

SCH 80 PVC TO VAULT, USE FITTINGS AS REQUIRED, SEE VAULT MECHANICAL PLANS

NOTES:
1. WELD ALL STEEL FITTINGS EXCEPT MATCHING BOLT ON FLANGE.
2. ALL ABOVE GRADE STEEL PIPING SHALL BE CORE- TEN.
3. VENT CAP SHALL BE 12" DIA FOR 6" VENT PIPE. OTHER SIZES SHALL BE PROJECT SPECIFIC.
4. STEEL WALL PIPE WITH SEEP RING SHALL BE CAST IN VAULT FOR VENT PIPES INSTALLED ON TOP OF VAULTS.

AIR VENT STAND PIPE

PRESSURE TRANSMITTER (ONLY FOR VAULT W/POWER) (SCALE 0-300 PSI, 4-20mA OUTPUT) WITH SST SNUBBER

INSTALL BOTH A BRONZE SMOOTH NOSED HOSE BIB FOR SAMPLING AND A BRONZE THREADED HOSE BIBB

PRESSURE GAUGE AND TRANSMITTER DETAIL

PRESSURE REDUCING VALVE VAULT

PARK CITY MUNICIPAL CORPORATION WATER

DATE
4/2014

STD. PLAN
573-D.1
NOTES:
1. ROUTE TO NEAREST APPROVED DISCHARGE LOCATION WITH 12" AIR GAP AND #4 SST MESH SCREEN BETWEEN FLANGES AND EROSION CONTROL. ALL FITTINGS MUST BE FLANGED OR RESTRAINED. 5' MIN COVER.

2. FOR GENERAL NOTES, SEE STD. PLAN 573-A, AND FOR KEYED ITEMS, SEE STD. PLAN 573-C.3 AND C.4

3" PRESSURE RELIEF VALVE DETAIL

3" DI CLASS 150 SPOOL

3" RESILIENT SEAT VALVE, FLANGE X FLANGE W/HANDWHEEL

3" DIA. PIPE, SEE NOTE 1

3/4" DRAIN VALVE HOSE BIB

WALL PENETRATION
PIPE SUPPORT
SCH 80 PVC PIPE
CHECK VALVE
HOSE BIBB/DRAIN
UNION

2" BRASS BALL VALVE
GRATING
FLEXIBLE HOSE
SUMP PIT
SUMP PUMP, SEE STANDARD DRAWING 573-E

NOTES:
1. SUMP PUMP AND DISCHARGE PIPING SHALL NOT BE USED UNLESS SPECIFICALLY APPROVED BY THE CITY. SUMP SHALL DRAW TO DAYLIGHT UNLESS OTHERWISE APPROVED.

2. FOR GENERAL NOTES, SEE STD. PLAN 573-A, AND FOR KEYED ITEMS, SEE STD. PLAN 573-C.3 AND C.4

TYPICAL SUMP SECTION DETAIL

PARK CITY MUNICIPAL CORPORATION WATER

PRESSURE REDUCING VALVE VAULT

DATE
4/2014

REV.
0

STD. PLAN
573-D.2
IN-LINE EXHAUST FAN DETAIL

FANTECH FR150 EXHAUST FAN

6" FLEX COUPLING FERNCO 1056-66 AND 6.625-5.900R

GALVANIZED PIPE CLAMP SIZE FOR FAN

6" PVC VENT PIPE

STRAP WITH SCREW TO HOLD DUCT ONTO FAN (TYP OF 4)

GALV UNISTRUT MOUNT TO WALL

1/4" X 1 1/2" SST CONCRETE ANCHORS (TYP)

6" FLEX COUPLING FERNCO 1056-66 AND 6.625-5.900R

FLOOD SWITCH INSTALLATION DETAIL

CONDUIT

4"x4" J-BOX

LIQUID TIGHT STRAIN RELIEF CORD CONNECTOR

CABLE BY VENDOR

GEMS SENSOR LEVEL SWITCH, MODEL LS-270

FLOOR

(2) 1/4" STAINLESS STEEL CONCRETE ANCHORS, TYP

24"

PRESSURE REDUCING VALVE VAULT

DATE
4/2014

STD. PLAN
573-D.3

PARK CITY MUNICIPAL CORPORATION
WATER

REV.
0
NOTE:
1. LADDER, ANCHORS, AND BOLTS TO BE STAINLESS STEEL
## PANEL SCHEDULE LP-A

**LOCATION:** IN VAULT  
**MFRGR:** CULTER  
**HMMER OR EQUAL**  
**100 AMPS**  
**VOLTS:** 120/240

**DIMENSIONS:** SIZE BY CONTRACTOR  
**TYPE:** PANELBOARD  
**M.L.O.**  
**PHASE:** 1

**MOUNTING:** SURFACE  
**NEMA:** 3R  
**50 M.C.B.**  
**WIRES:** 3

**FEED:** TOP  
**10000 A.I.C.**

### PHASE LOADS

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**TOTAL WATTS:** 2600 648 1300 888 1300 1246 1486 0

**CONTINUOUS LOAD:** 2600

**CONTINUOUS LOAD *125%:** 3250

**NON-CONTINUOUS LOAD:** 2134

**DESIGN WATTS:** 5384

**MIN. RATING (AMPS):** 15

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**PRESSURE REDUCING VALVE VAULT**

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**PARK CITY MUNICIPAL CORPORATION WATER**

**DATE:** 4/2014  
**REV.:** 0  
**STD. PLAN:** 573-E.2
PANEL NOTE:

1. INSTALL WEATHERPROOF LIGHT SWITCH AND NEMA 4X HOA CONTROL BOX IN HATCH OPENING ABOUT 8" FROM TOP OF CONCRETE.

2. MAINTAIN NATIONAL ELECTRICAL CODE REQUIRED CLEARANCE AND WORKING SPACE AROUND PANELS.

3. COORDINATE WITH PCMC FOR RTU PANEL, ANTENNA, AND CABLE REQUIREMENTS. CONTRACTOR TO FURNISH AND INSTALL RTU PANEL, ANTENNA, ANTENNA MAST, CONDUIT, CONDUCTOR, AND CABLE WITH WIRING TERMINATIONS INSIDE THE RTU PANEL. CONTRACTOR TO SIZE RTU RELATED EQUIPMENT FOR 11 I/O POINTS INCLUDING 3 SPARES. (2 FLOW METERS, 2 PRESSURE TRANSDUCERS, 1 TEMPERATURE SENSOR, 1 FLOOD ALARM, 1 ENTRY SECURITY ALARM, 1 PRESSURE RELIEF OPEN ALARM, 2 SPARE DIGITAL INPUTS AND 1 SPARE ANALOG INPUT). PCMC WILL PROVIDE AND INSTALL A PRE-ASSEMBLED AND PRE-WIRED BACKPANEL IN RTU PANEL AND PROVIDE SCADA PROGRAMMING.

4. SUMP PUMP RECEPTACLE TO BE A 20 AMP, SIMPLEX, NON-GFCI OUTLET.

5. UNIT HEATER TO BE A 2600W, 240V, COMFORT HEATER WITH FAN AND INTEGRAL THERMOSTAT CHROMALOX LUH02 21 34 40 1 OR EQUAL. MOUNT ON CEILING USING CEILING MOUNT KIT. LOCATE ON OPPOSITE SIDE OF VAULT FROM HATCH DAYTON MODEL 24U58.

6. GASKETED AND ENCLOSED INDUSTRIAL FIXTURE, FIBERGLASS HOUSING, WET LOCATION TWO LAMP FLUORESCENT, 120 VOLT, INSTANT START ELECTRONIC BALLAST METALUX VT3-232DR-120V-EB81-WL-U OR EQUAL. MOUNT FIXTURE ON WALL AT ABOUT 7 FEET ABOVE FINISHED FLOOR.

7. NEMA 4 HEAVY-DUTY LIMIT SWITCH WITH 1NO 1NC CONTACT 5A 120 VAC. SQUARE D COMPANY, CLASS 9007 OR EQUAL.

8. ROOM TEMPERATURE DISPLAY AND 4-20 mA TRANSMITTER WITH 100 OHM PLATINUM RTD. DEVAR MODEL D-RTTI-0024.

9. INSTALL UTILITY POWER METER WITH 50 AMP BREAKER ON BACK TO BACK UNISTRUT TO 2" GALVANIZED STEEL POLE ACCORDING TO UTILITY COMPANY STANDARDS.
GENERAL NOTES:
1. REFER TO STD. PLAN 573-E.1 FOR EQUIPMENT LOCATIONS, 573-E.2 FOR PANEL SCHEDULE, AND 573-E.3 FOR KEYED ITEMS.

LEGEND
AI - ANALOG INPUT
DI - DIGITAL INPUT
TSP - TWISTED SHIELDED PAIR CABLE

CONTROL ONE-LINE DIAGRAM
TYPICAL VAULT EXHAUST FAN CONTROL SCHEMATIC

ELECTRIC POWER UTILITY

UTILITY TRANSFORMER
240/120V (PER PROJECT SITE PLAN)

3" C, CABLE
BY UTILITY

1-1/2" C,
3#6
1#10G

NOTE:
LARGER CONDUITS AND CONDUCTORS
MAY BE REQUIRED TO MEET INDUSTRY
STANDARD ACCEPTABLE VOLTAGE
DROP CRITERIA.

POWER ONE-LINE

PRESSURE REDUCING VALVE VAULT

PARK CITY MUNICIPAL CORPORATION
WATER
BACKFILL PER PCMC STANDARDS

#4 HOOPS @ 12" MAX

CONCRETE BASE RING, CAST ALONG PIPE

PROVIDE 12" COMPACTED GRANULAR BACKFILL AROUND CONCRETE BASE RING

6" MIN DRAIN ROCK TO TOP OF PIPE

CORE DRILL HOLE IN MANHOLE SECTION AND INSTALL PIPE AND SEAL WITH ADJUSTABLE LINKED RUBBER SEAL

SCH 80 PVC PIPE TO AIR VENT STAND PIPE, SEE STD. PLAN 576

SLOPE 1% MIN

VARES
# Legend and Approved Parts List

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<td>MANHOLE FRAME AND COVER (STD. PLAN 529)</td>
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<td>VALVE LARGER THAN 2”: DUCTILE IRON FLANGED TEE WITH 4” BLIND FLANGE BRONZE AND NPT SERVICE TAP VALVE 2” AND SMALLER: BRONZE SERVICE SADDLE DI MAIN; DOUBLE STRAP PVC MAIN; TWO-PIECE BOLTED</td>
<td>MUELLER</td>
<td>FORD</td>
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<td>BRASS CORPORATION STOP, INLET I.P. THREAD, OUTLET F.I.P. THREAD (VALVE INLET SIZE)</td>
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<td>COMBINATION AIR VACUUM / RELEASE VALVE, NPT, SIZE PER ENGINEER DESIGN AND APPROVED PLANS</td>
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<td>BRONZE TEE, F.I.P., THREADED, (VALVE OUTLET DIAMETER X 3/4” DIA.)</td>
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<td>DRAIN ASSEMBLY: 3/4” DIA. BRASS CLOSE NIPPLE, M.I.P.; 3/4” BRONZE BALL VALVE; 3/4” BRONZE PLUG</td>
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<td>5/8” DIAMETER GALVANIZED STEEL ROD WITH 3” DIAMETER HAND WHEEL TO FORM EXTENSION, TOGETHER WITH A GALVANIZED EYELET STANDOFF</td>
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<td>LIFTING EYE ABOVE AIR VALVE, GALVANIZED</td>
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<td>TRACER WIRE: 12 GA. SOLID, BLUE PVC INSULATION; WIRE-WIRE CONNECTORS SILICONE-FILLED WIRE NUTS</td>
<td>IDEAL INDUSTRIES</td>
<td>TWISTER DB PLUS OR APP’D EQUAL</td>
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## Detail Notes

1. ALL VALVES AND FITTINGS SHALL BE RATED FOR THE SAME WORKING AND TEST PRESSURES AS THE CONNECTED WATERLINE.
2. LOCATE VALVE, VAULT, AND AIR VENT PER APPROVED PLANS AND SET VAULT PLUMB.
3. REFER TO STD. PLAN 575 FOR HEAT TRACE REQUIREMENTS.
KEY NOTES:

1. WRAP HEAT TAPE AROUND THE AIR/VAC VALVE. USE MANUFACTURER'S RECOMMENDATIONS FOR THE NUMBER OF WRAPS.

2. SECURE THE HEATING CABLE IN PLACE WITH CHROMALOX FT-3 FIBERGLASS TAPE.

3. END KIT WITH INDICATING LIGHT.

4. INSULATE THE ISOLATION VALVE AND THE COMBINATION AIR VACUUM RELEASE VALVE WITH A REMOVABLE AND REUSABLE INSULATING BLANKET. ENERGY-WRAP INSULATION SYSTEM AS MANUFACTURED BY THERMAL ENERGY PRODUCTS.

5. INSTALL CHROMALOX AT-1 ALUMINUM TAPE NEXT TO PVC PIPE BEFORE INSTALLING HEAT TAPE AND THEN THE HEAT TAPE WILL CONTINUE FROM THE AIR/VAC VALVE AND LAY ALONG THE ALUMINUM TAPE.

6. INSULATE THE PIPE WITH 2 INCH THICK FIBERGLASS PIPE INSULATION.

NOTES:

1. INSTALL HEAT TAPE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

2. REFER TO STD. PLAN 575-B FOR POWER ONE-LINE DETAIL.

3. SEE AIR RELEASE / CAV VALVE MANHOLE, STD. PLAN 574
KEY NOTES:

1. TYPE 4X NONMETALLIC J-BOX FOR WIRE CONNECTIONS AS NEEDED.

2. CROUSE HINDS FS BOX, WITH 20 AMP SINGLE POLE SWITCH, AND A CROUSE HINDS P/N DS185 COVER.

3. CHROMALOX NON INDICATING TEMPERATURE CONTROL, 0 TO 150 DEGREES F, P/N PIT-15.

4. CHROMALOX PIPE MOUNTED POWER CONNECTION BOX NEMA 4X, P/N RTPC.

5. HEAT TAPE 120 VOLT, 5 WATTS PER FOOT, SELF-REGULATING, TINNED COPPER BRAID, WITH A FLUOROPOLYMER OVERJACKET. CONNECT GROUNDING CONDUCTOR TO COPPER BRAID. CHROMALOX P/N SRL 5-1CT HEATING CABLE.

6. END KIT WITH INDICATING LIGHT 120 VOLT, CHROMALOX P/N RTPC-SL1.

7. 3/4" RIGID CONDUIT GALVANIZED WITH TWO #12 CONDUCTORS AND ONE #12 GROUND.

8. 1/2" RIGID CONDUIT GALVANIZED WITH TWO #12 CONDUCTORS AND ONE #12 GROUND.

9. 3/4" RIGID T CONDUIT GALVANIZED BODY WITH ONE REDUCER FOR 1/2" CONDUIT.

HEAT TRACE POWER ONE-LINE DETAIL
VENT COVER SHALL BE 12" WIDE (MIN) x 6" DEEP (MIN). LARGER SIZE IS REQUIRED FOR VENT PIPES LARGER THAN 2". MAINTAIN 1" MINIMUM CLEARANCE BETWEEN VENT PIPES AND COVER WALLS.

#14 SST MESH SCREEN AND SST BAND ON END OF VENT PIPE

¼" THICK BARE STEEL PIPE WITH REMOVABLE UPPER SECTION

½" DIA HOLES (TYP OF 40)

BOLT SECTIONS TOGETHER USING ½" DIA BREAK AWAY BOLTS

SLOPE GROUT TO DRAIN

¾" DIA DRAIN HOLE

(4) ¾" DIA X 4" HAMMERHEADS

ROUND EDGES

FINISH GRADE

SLOPE TO VAULT
(1% MIN)

SCH 80 PVC PIPE TO AIR/VAC VALVE STRUCTURE, SIZE PER VALVE OUTLET

PROVIDE 12" MIN GRANULAR BACKFILL

NOTES:

1. LOCATE VENT AS SHOWN ON APPROVED PLANS, 1'-6" MINIMUM BEHIND TOP BACK OF CURB / GUTTER OR SIDEWALK.
1. BAR MATERIAL TO BE ASTM A 240 TYPE 304 OR 316 (Fy= 30 KSI MIN.)
NOTES:

1. TRENCH ZONE
   WATER MAIN, FIRE LINE, AND APPURTEANCES:
   BACKFILL AND COMPACT PER PCMC DESIGN STANDARDS AND CONSTRUCTION SPECIFICATIONS UNLESS OTHERWISE REQUIRED
   BY SPECIAL CONDITIONS
   WATER SERVICE - NEW PAVEMENT AND LANDSCAPE AREA:
   BACKFILL AND COMPACT PER PCMC DESIGN STANDARDS AND CONSTRUCTION SPECIFICATIONS UNLESS OTHERWISE REQUIRED
   BY SPECIAL CONDITIONS
   WATER SERVICE - EXISTING ROADWAY AND PAVED AREA:
   BACKFILL TO PAVEMENT DEPTH WITH CONTROLLED LOW-STRENGTH MATERIAL (CLSM), "FLOWABLE FILL", 100 PSI MINIMUM AND
   150 PSI MAXIMUM MIX DESIGN.

2. PIPE ZONE
   BACKFILL MATERIAL SHALL BE TAMPED IN LAYERS AROUND THE PIPE AND TO A SUFFICIENT HEIGHT ABOVE THE PIPE TO ADEQUATELY
   SUPPORT AND PROTECT THE PIPE. THE MATERIAL AND BACKFILL ZONES SHALL BE AS SPECIFIED BY THE APPLICABLE AWWA
   STANDARD FOR THAT PIPE TYPE. DO NOT DROP PIPE OR ACCESSORIES INTO THE TRENCH. AS A MINIMUM:
   WATER MAIN, FIRE LINE, AND APPURTEANCES:
   SAND OR 3/4" MAXIMUM PARTICLE SIZE ROADBASE COMPACT TO 96% OF MODIFIED PROCTOR DENSITY
   WATER SERVICE:
   SAND COMPACTED TO 96% OF MODIFIED PROCTOR DENSITY

3. PIPE BEDDING
   WATER MAIN, FIRE LINE, AND APPURTEANCES:
   SAND OR 3/4" ROADBASE COMPACT TO 96% OF MODIFIED PROCTOR DENSITY
   WATER SERVICE:
   SAND COMPACTED TO 96% OF MODIFIED PROCTOR DENSITY
   A CONTINUOUS AND UNIFORM BEDDING SHALL BE PROVIDED IN THE TRENCH FOR ALL BURIED PIPE. STONES LARGER THAN 3/4" AS
   DESCRIBED IN NOTE 2 SHALL BE REMOVED FOR A DEPTH OF AT LEAST 6 INCHES BELOW THE BOTTOM OF THE PIPE.

4. PROVIDE TRENCH PLATING AS REQUIRED FOR CLSM BACKFILL INSTALLATIONS

5. COMPLY WITH APPLICABLE PARK CITY SOILS ORDINANCE REQUIREMENTS

WATER TRENCH BEDDING
AND BACKFILL

PARK CITY MUNICIPAL CORPORATION
WATER
NOTES:

1. CLSM - CONTROLLED LOW STRENGTH MATERIAL, DESIGN MIX 100-150 PSI
NOTE:
1. REFER TO STD. PLAN 520 FOR GENERAL REQUIREMENTS - METER, METER VAULT, AND SERVICE LINE.
2. METER YOKE DEPTH MUST MEET THE METER VAULT REQUIREMENTS. (PLAN 521 THRU 525)
3. METER LID HIGHER THAN THE SURROUNDING FINISH GRADE:
   RAISE GRADE SURROUNDING METER LID TO THE TOP OF METER LID.
   PROVIDE DRAINAGE AWAY FROM THE METER LID.
4. METER LID LOWER THAN THE SURROUNDING FINISH GRADE:
   RAISE METER VAULT AND COMPONENTS TO MEET METER VAULT REQUIREMENTS.
Provide heating system. Disconnect at collar limits.
24" collar required for 4' and 5' manholes and vaults.

Asphalt pavement:
Collar set ¼" min. to ½" max. below pavement lip all around.

Concrete pavement:
Set collar flush with pavement lip.

Concrete collar, asphalt pavement

Concrete collar, concrete pavement / walks and heated surfaces

Concrete grade ring, one maximum

Match cross slope grade

Finish pavement grade

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NOTES:

1. REFER TO STD. PLAN 594.2 FOR NOTES AND REFERENCES.
VALUES DERIVED FROM SR WATER METERS TYPICAL PERFORMANCE CURVES AND THE METERS AWWA MAXIMUM CAPACITY

ASSUMED:

L (FT) = 40.0 (MAX LENGTH IN FEET FROM MAIN TO METER)

C = 135.0 (OLDER HDPE PIPE)

WHEN USED TO CALCULATE THE PRESSURE DROP USING THE US CUSTOMARY UNITS SYSTEM, THE EQUATION IS:

\[ P_d = \frac{4.52 \times L \times Q^{1.85}}{C^{1.85} \times d^{4.87}} \]

WHERE:

\( P_d \) = PRESSURE DROP OVER A LENGTH OF PIPE, PSIG (POUNDS PER SQUARE INCH GAUGE PRESSURE)

L = LENGTH OF PIPE, FT (FEET)

Q = FLOW, GPM (GALLONS PER MINUTE)

d = INSIDE PIPE DIAMETER, IN (INCHES)

C = HAZEN WILLIAMS COEFFICIENT OF FRICTION

NOTES:

1. THIS TABLE IS FOR REFERENCE PURPOSES ONLY AND REPRESENTS MAXIMUM ANTICIPATED FLOW TO THE POINT OF CONNECTION (40 FOOT MAXIMUM LENGTH) WITHOUT ADDITIONAL VALVES AND PIPING. HOMEOWNERS, ARCHITECTS, ENGINEERS, FIRE SPRINKLER DESIGNERS, ETC., ARE RESPONSIBLE TO VERIFY EXISTING WATER SYSTEM PRESSURES PRIOR TO DESIGN AND INCORPORATE THE INFORMATION INTO THE WATER SERVICE AND FIRE SERVICE LINE DESIGN.

2. THE MINIMUM WATER PRESSURE AT THE POINT OF CONNECTION SHALL BE ABOVE 20 PSI WITH FIRE FLOW AND PEAK DAY DEMANDS, ABOVE 30 PSI WITH PEAK INSTANTANEOUS DEMANDS, AND ABOVE 40 PSI WITH PEAK DAY DEMANDS. SEE UTAH ADMINISTRATIVE CODE R309-105-9. MINIMUM WATER PRESSURE.

3. INDIVIDUAL HOME BOOSTER PUMPS SHALL NOT BE ALLOWED FOR ANY INDIVIDUAL SERVICE FROM THE PUBLIC WATER SUPPLY MAIN, SEE UTAH ADMINISTRATIVE CODE R309-105-9 AND R309-540-5(4)(C)
NOTES:

1. MULTI-PURPOSE RESIDENTIAL FIRE SPRINKLER PROTECTION PLUMBING SYSTEM SHALL MEET NFPA 13D REQUIREMENTS AND PARK CITY BUILDING DEPARTMENT AND FIRE MARSAL APPROVAL. OPTION SHALL BE APPROVED BY THE PARK CITY BUILDING DEPARTMENT, CITY ENGINEER, AND FIRE MARSAL PRIOR TO SYSTEM DESIGN.

2. DESIGN AND CONSTRUCTION SHALL COMPLY WITH APPLICABLE BUILDING AND PLUMBING CODES.

3. BACKFLOW PREVENTION: BACKFLOW PREVENTION IS REQUIRED FOR BOTH OPTIONS. PROVIDE A DOUBLE CHECK BACKFLOW ASSEMBLY (DCBA) OR REDUCED PRESSURE PRINCIPLE BACKFLOW ASSEMBLY (RPBA) ON THE FIRE SPRINKLER RISER ASSEMBLY. BACKFLOW PREVENTER STYLE TO BE DETERMINED BY THE BUILDING AND WATER DEPARTMENT BASED ON DEGREE OF HAZARD POSE BY FIRE SPRINKLER PROTECTION SYSTEM. A FIRE SPRINKLER PROTECTION SYSTEM WHICH CONTAINS CHEMICAL ADDITIVES OR A FIRE PUMP SYSTEM REQUIRES A REDUCED PRESSURE PRINCIPAL BACKFLOW PREVENTER (RPBA) STYLE.

4. BEFORE A CERTIFICATE OF OCCUPANCY CAN BE ISSUED BY THE BUILDING DEPARTMENT, BACKFLOW ASSEMBLY TESTING FOR PROPER OPERATION (PER CITY REQUIREMENTS BY A CERTIFIED TESTER RECOGNIZED BY THE CITY) IS REQUIRED AND A REPORT SUBMITTED.

5. FIRE SPRINKLER PROTECTION SYSTEMS CONTAINING FIRE PUMPS REQUIRES SITE SPECIFIC DESIGN AND APPROVAL BY THE CITY ENGINEER, PARK CITY BUILDING DEPARTMENT, WATER DEPARTMENT, AND FIRE MARSAL PRIOR TO BUILDING APPROVAL. FIRE PUMP SYSTEM SHALL BE LOCATED ON THE BUILDING SIDE OF THE WATER OUTSIDE OF THE WATER METER VAULT. REFER TO STD. PLAN 520 FOR REQUIREMENTS.
DETAIL NOTES

1. REFER TO STD. PLAN 520 FOR GENERAL REQUIREMENTS – METER, METER VAULT, AND SERVICE LINE.
2. REFER TO STD. PLANS FOR WATER SERVICE REQUIREMENTS.
3. REFER TO THE STATE OF UTAH, DEPARTMENT OF ENVIRONMENTAL QUALITY DIVISION OF DRINKING WATER LIST OF APPROVED BACKFLOW PREVENTION DEVICES. APPROVED DEVICES CAN BE FOUND AT THE FOLLOWING STATE OF UTAH WEBSITE: HTTP://DRINKINGWATER.UTAH.GOV/DOCUMENTS/COMPLIANCE/APPENDIXB_1-19-11.PDF
4. BACKFLOW ASSEMBLY SELECTION AND INSTALLATION SHALL CONFORM TO THE APPROVED INSTALLATION ORIENTATION ONLY.
5. ALL BACKFLOW PREVENTION DEVICES USED WITHIN THE STATE OF UTAH SHALL HAVE THIRD PARTY CERTIFICATION AS MENTIONED ABOVE.
6. ALL BACKFLOW PREVENTERS HAVE TO BE TESTED PERIODICALLY TO ENSURE THAT THEY ARE FUNCTIONING PROPERLY. A VISUAL CHECK OF AIR GAPS IS SUFFICIENT, BUT MECHANICAL BACKFLOW PREVENTERS HAVE TO BE TESTED BY A STATE CERTIFIED BACKFLOW SPECIALIST, WITH PROPERLY CALIBRATED GAUGE EQUIPMENT. TO OBTAIN A LIST OF STATE CERTIFIED TESTERS EITHER CALL US OR REFER TO THE STATE OF UTAH WEBSITE PAGE OF BACKFLOW TESTERS. HTTP://WWW.DRINKINGWATER.UTAH.GOV/DOCUMENTS/COMPLIANCE/BACKFLOW_TECHNICIANS_COMMER_AVAIL.PDF
7. FIRE SPRINKLER SYSTEM PUMPS, INTEGRAL TO THE FIRE SPRINKLER PIPING, TO MEET FIRE SPRINKLER PRESSURE DESIGN REQUIREMENTS ARE CONSIDERED OUTSIDE THE INTENT OF UTAH DDW REGULATION R309-550-11(3) AND DO NOT REQUIRE APPROVAL OF THE DDW IF THEIR INSTALLATION CONFORMS TO UTAH ADOPTED PLUMBING CODE AND NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 13 D. PUMPS SHALL BE CONNECTED ON THE BUILDING SIDE OF THE WATER METER VAULT AND SHALL BE APPROVED BY THE CITY ENGINEER AND BUILDING DEPARTMENT.
NOTES:

1. INSTALL REFERENCE POST WHEN WATERLINE IS LOCATED OUTSIDE OF PUBLIC RIGHT-OF-WAYS WHEN DIRECTED BY CITY ENGINEER AND WATER DEPARTMENT.

2. BURIED WATER LINE MARKER SHALL BE CONSTRUCTED ON 4" RHINO 3-RAIL FIBERGLASS UTILITY MARKER POSTS WITH VERBIAGE AS SHOWN ON THIS DETAIL. BY "RHINO" OR EQUAL. (WWW.RHINOMARKERS.COM)

3. PARK CITY LOGO IS WHITE PMS CL GY, 5CCV, 282CV AND 180CV. ALL TEXT AND GRAPHICS SHALL BE SET AGAINST A WHITE BACKGROUND. (RHINO MARKERS SHALL REFER TO SD-7964K DECAL)

4. MOUNT MARKERS PER MANUFACTURERS RECOMMENDATIONS.

5. INSTALL MARKERS AT LOCATIONS INDICATED ON PLANS BUT TYPICALLY EVERY 500 FT AND AT VALVES, TRACER WIRE BOXES, AND BENDS IN ALIGNMENT.

6. PLACE MARKER ON PIPE CENTERLINE.

7. OBTAIN LOGOS FROM PARK CITY TO PROVIDE TO SIGN MANUFACTURER.

8. PRINTING MATERIAL AND SIGN MATERIAL SHALL BE WATER-RESISTANT.

9. LABEL TO READ "CAUTION WATER PIPELINE - BEFORE DIGGING CALL 811"
PIECE CASING

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**LEGEND AND APPROVED PARTS LIST**

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<td>PIPELINE SEAL AND INSULATOR, INC.</td>
<td>C12G-2 OR APPROVED EQUAL</td>
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<td>③</td>
<td>CARRIER PIPE: DUCTILE IRON RESTRAINED JOINT (STD. PLAN 540)</td>
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**DETAIL NOTES**

1. PROVIDE CARRIER AND CASING SIZE, LOCATION, AND DEPTH PER APPROVED PLANS
2. INSTALL MECHANICAL JOINT A MAXIMUM OF 18” FROM EACH END OF CASING
3. IF REQUIRED BY APPROVED PLANS, INSTALL CLOSED CELL INSULATION IN ANNULAR SPACE BETWEEN CARRIER PIPE AND CASING. INSTALLATION METHOD TO BE APPROVED BY CITY.
PUBLIC WATER SYSTEM
FIELD OBSERVATION
GUIDELINES

FOR PROJECTS WITHIN THE
PARK CITY WATER SERVICE DISTRICT

YEAR 2014
This manual provides information to assist the field representative in his duties of observing the progress and quality of public water line construction within the Park City Water Service District, Park City, Utah, and determining if the work is proceeding in accordance with Park City Design Standards, Construction Specifications and Standard Drawings. The information, checklists and procedures included in the manual are not all inclusive, but are intended to serve as guidelines for the performance of periodic construction observations, required sampling and testing observation by the field representative. It is important that field representatives contact the Project Manager or the Park City Engineer for clarification if there are any questions related to the requirements of the Park City Design Standards, Construction Specifications, and Standard Drawings.
DISINFECTING

All new water mains, services, and appurtenances shall be disinfected in accordance with AWWA Standard C651-05.
The method typically employed by the Contractor to disinfect new water distribution systems is to place calcium hypochlorite granules in the pipeline as it is being installed. Reference Park City Design Standards and Construction Specifications, Appendix 703A. The field representative should pay special attention to the following items:

- Refer to Table No. 1 of the above referenced Appendix for the number of ounces to be used per pipe diameter and pipe interval to achieve the necessary disinfection concentration.
- Active chlorine content of disinfecting solution within water service tubing (CTS) for water services shall not exceed 12%.
- Water mains shall be filled slowly to prevent "pushing" the calcium hypochlorite granules to one end of the pipe line. If the new water lines are to be filled by introducing water from the existing water distribution system, via opening the isolation valve between the two systems, the field representative shall monitor the opening of the valve. The field representative shall pay special attention to the following during water system filling by the Contractor:
  1. Verify that the static water pressure of the distribution system (typically 40 psi) is capable of overcoming the static head required to fill the new water line.
  2. Be certain a means of releasing air at the high point of the water system to be filled is provided and is open.
  3. The isolation valve shall be opened only slightly (existing water system valves are to be operated only by Water Operations staff).
  4. Listen for water passing the valve. The valve shall be closed immediately if it appears that the water pressures begin to equalize on each side of the valve. Backflow of chlorinated water into the existing water distribution system must not occur.

- After the water mains and services have been filled by the Contractor, the field representative shall sample and test the water for chlorine concentration. Observe the following:
  1. Select sampling frequency and locations to achieve representative samples. Typical locations for samples at water meter services, taps or fire hydrants. The sampling frequency will depend on length of the water line being chlorinated, availability of sampling points, and results of chlorination concentration tests.
  2. The field representative should observe the disinfection of the interior of all pipe, fittings, valves, tapping sleeves, and other materials when existing water mains are cut into or repaired. The Contractor can accomplish this by swabbing the materials with a hypochlorite solution. Reference Park City Design Standards and Construction Specifications, Appendix A.
- Remember: Good disinfection practices improve the opportunity for successful bacteriological test results.
WATER SYSTEM FLUSHING

Flushing of the installed water system is to be completed in two steps. The initial flushing is to be performed following installation and disinfection of the water main but prior to hydrostatic testing. The final flushing is to be performed following hydrostatic testing and leakage testing.

INITIAL FLUSHING

The following items should be considered by the field representative and may need to be reviewed with the Park City Engineer:

1. When notified that the Contractor intends to begin the initial flushing but before the Contractor utilizes water contact the Park City Water Department to be certain that water is available from the City for flushing purposes. **Inform the Contractor not to begin flushing without authorization (existing water system valves are to be operated only by Water Operations staff).**

2. Review with the Contractor the proposed discharge location for flushing operations and the method by which the Contractor intends to control the discharge of chlorinated water from the water system. **Fire hydrants are not acceptable points for initial flushing operations.**

   Typically, Contractors will discharge the water into a water truck or tank and haul the water offsite for disposal. Chlorinated water shall not be allowed to be discharged in a manner that it could now onto vegetation or into streams, waterways, storm drains or sanitary sewer systems.

3. Determine the required diameter of opening(s) for discharge from the water line. The opening must be sized to achieve velocities capable of moving dirt and rock through the pipe, approximately **6 to 8 feet per second**. Note that required flowrate and opening size(s) referenced in AWWA Table 3 Required Flow and Openings to Flush Pipelines, is based on only 2.5 feet per second velocity at 40 psi pressure. **Required opening size will be determined based on site specific available water system pressure to achieve the required velocity.**

4. Determine the total volume of water to be expelled from the section of water system being flushed. The entire contents of the water line must be discharged and replaced with new water. To determine the volume required, ensuring that the entire pipe line has been flushed, utilize the following formula:

   \[ V = \frac{\pi d^2}{4} \times 7.481; \]

   where:

   - \( V \) = volume (gallons)
   - \( \pi / 4 \) = area
   - \( d \) = pipe diameter (feet)
   - \( \pi = 3.141 \)

5. If the section of water line to be flushed is very long, making the transport of sediment and rock to the discharge location may be difficult, an intermediate discharge location for flushing should be considered. **The end of a fire service line, prior to setting the hydrant, or a properly sized service tap could be utilized.**

6. After initial flushing has been completed, perform sampling and testing for "low" chlorination concentration.
FINAL FLUSHING

1. Utilize the same procedure for final flushing as for initial flushing, except that concerns regarding the chlorine concentration of discharge water do not apply.
2. Fire hydrants are to be flushed and can be utilized as flushing locations.
3. Services are to be flushed at the meter vaults. *Proper flushing of the service lines is important since water samples for bacteriological testing are typically taken at the service lines.*
HYDROSTATIC TESTING

Hydrostatic testing is required for every section of water main (valve to valve). Testing every section is intended to test both sides of isolation valves to ensure proper functioning of the valve. Prior to hydrostatic testing and leakage testing the water system should be flushed and tested for proper disinfection.

The specified hydrostatic test pressure is to be met at the highest elevation in the section of water line being tested. The specified test pressure shall be achieved by means of a Contractor supplied pump/gauge system connected to the pipe. The gauge shall have sufficient increments to enable accurate readings to be taken.

To achieve proper hydrostatic test pressure at the highest elevation of the water line section being tested, consider the locations available for installing the testing apparatus. To determine the required test pressure at the test gauge, utilize the following formula:

\[ P_g = P_r + (H_v - H_g) / 2.31; \]

where:
- \( P_g \) = required gauge pressure reading (psi)
- \( P_r \) = required test pressure (psi)
- \( H_v \) = elevation at highest valve (feet)
- \( H_g \) = elevation at gauge (psi)

*Note: 1 psi = 2.31 feet of elevation, or 0.43 psi X elevation difference in feet.*

The following items should be considered and may need to be reviewed with the Park City Engineer:

- The possibility of requiring/requesting a water valve to be installed in the water main to reduce the pressure difference in the water line to be tested. This may occur when there is a significant difference in elevation between water valves;
- The installation of an additional service tap to accommodate proper testing.
- In achieving the required hydrostatic pressure at the highest elevation of the water line section being tested, the hydrostatic pressures at the lowest elevation may exceed acceptable pressures for the pipe, valves or fittings. Typically, if the calculated pressure at the lowest elevation exceeds 300 psi, the City Engineer should be notified before testing is performed.
HYDROSTATIC TESTING

The field representative shall perform all sampling for bacteriological testing and deliver samples to the Summit County Health Department (or a pre-approved state certified laboratory) for analysis. To achieve consistent and representative sampling, the following procedures shall be observed by the field representative:

- Select the location and number of samples to be taken. Samples are typically taken at water meter services and ends of the water line. Intervals of 200 feet between sampling locations is preferred.
- Procedures for obtaining samples for bacteriological testing of the water system are as follows:
  1. Obtain sample bottles from the Public Works Water Department office or Summit County Health Department, if not available in the office.
  2. When sampling, first disinfect or sterilize the discharge area.
  3. Open the control valve slowly and allow water to flow for a short period.
  4. Close the valve slightly to reduce the flowrate and fill the sample bottle to the fill line. Place the lid on the sample bottle and seal shut. Note: Be sure to identify the location of the sample bottle before obtaining other samples.
- After all samples are taken, complete the identification form and add other pertinent information to each sample bottle. Reference the sample identification form contained in the Report Forms and Checklists section of this manual. *Note: Pay special attention to Item No. 2, "Investigative Sample (not included on official records)" on the identification form. Always check this box on the form.*
FIELD OBSERVATION REPORT FORMS AND CHECKLISTS

This section includes typical forms checklists that are to be used as generalized guidelines to assist in the verification of the material and dimensional requirements of the Park City Design Standards and Construction Specifications. Field Representatives are to utilize the checklists during water system construction to assist the Contractor in understanding the requirements of the final product and during the final walk-through to verify consistency with the standards and specifications. Additionally, the fire hydrant inspection forms, illustrating the placement of a fire hydrant in three different terrain conditions, are to be completed during the Final Walk-through to provide the Park City Engineer with information regarding the hydrant’s installed elevation and location relative to the curb and gutter and the auxiliary valve.
FIELD OBSERVATION QUICK CHECKLIST

WATER LINE INSTALLATION:

☐ Verify that marking tape and locator wire is installed above the water main in the trench

☐ Verify that water main is bedded with approved gravel-sand material

☐ Verify that water main is installed at proper horizontal location (within pavement and inside of curb & gutter limits) and depth. Require additional survey staking be provided if necessary to determine design grades and curb & gutter alignment

☐ Verify that correct polyethylene encasement is provided and properly installed

☐ Verify that wax tape coating system is provided and properly installed on all buried bolts & nuts. Verify the cathodic protection system (if required) is provided and properly installed.

☐ Verify that thrust blocking is of adequate size, extended to undisturbed soil and that the pipe is wrapped with polyethylene before concrete is placed

☐ Verify that service taps are at 45 degrees to the main with 2 feet minimum separation

☐ Verify that every service corporation stop is open. This can be verified during flushing procedures

☐ Verify that water valves are properly set, valve boxes are clear of debris, and that a valve key can be placed on the valve. This must be verified during the final walk-through
FIELD OBSERVATION QUICK CHECKLIST

FIRE HYDRANT INSTALLATION:

☐ Verify that adequate gravel is placed around the fire hydrant base

☐ Verify that thrust blocking is properly placed and fire hydrant drain ports are not covered by concrete.

☐ Flush fire hydrant drain ports. Close main hydrant valve to the position at which the drains open and allow flow through the drains under pressure for about ten seconds to flush the drains. Then close hydrant valve completely.

☐ Check fire hydrant barrels for drainage. Remove nozzle cap, open hydrant valve, allow hydrant to run briefly and close hydrant valve. Place palm of hand over nozzle outlet. Drainage should be sufficient to create a suction.

☐ Check fire hydrant nozzle caps for thread damage from impact or cross threading

☐ Verify that the auxiliary valve is in the wide open position.

☐ Verify that fire hydrant markers are installed

☐ Verify that fire hydrant is properly extended above grade and hydrant pad is properly constructed. See Fire Hydrant Inspection Sheet.
FIELD OBSERVATION QUICK CHECKLIST

WATER METER INSTALLATION:

☐ Verify that meter service assembly materials are in accordance with Checklist. See checklists for specific size water meter.

☐ Verify that water meter box is adjusted to grade. See meter box adjustment detail sheet.

☐ Verify that water meter box is located properly. Require additional staking as required for verification.
TYPICAL PROCESS FOR WATER SYSTEM CONSTRUCTION

1. INSTALL WATER MAIN AND FIRE HYDRANTS
   If the Contractor elects to perform hydrostatic testing of water services independently of the water main, Items 3, 5, 7 and 9 will be performed on the water main prior to installation of the water services.

2. INSTALL WATER SERVICES
   If water services are installed after water main testing, the each services must be disinfected separately.

3. INITIAL FLUSHING OF WATER MAIN
   Sampling and testing for "high" chlorine concentration is performed prior to initial flushing.

4. INITIAL FLUSHING OF WATER SERVICES

5. PERFORM HYDROSTATIC AND LEAKAGE TESTING ON WATER MAIN

6. PERFORM HYDROSTATIC AND LEAKAGE TESTING ON FIRE HYDRANTS & WATER SERVICES

7. FINAL FLUSHING OF WATER MAIN
   Sampling and testing for "low" chlorine concentration is performed following final flushing.

8. FINAL FLUSHING OF FIRE HYDRANTS & WATER SERVICES

9. PERFORM BACTERIOLOGICAL TESTING

10. ALLOW ACTIVATION OF WATER SYSTEM
    Permanent opening of isolation valves upon receipt of successful bacteriological test results.
### WATER SYSTEM TESTING SUMMARY REPORT

**PROJECT NAME**

**CONTRACTOR**

**WATER SYSTEM SECTION**

---

#### DISINFECTION: 703.2.12C & J

- **Type of Chlorine:** [ ] Granular  [ ] Injection, Where: 
- **Sample Location:**
- **Start:**
- **End:**
- **Result:** [ ] Pass  [ ] Fail
- **Disposal of Chlorinated Water:**

#### FLUSHING: 703.2.12A

- **Main:**
  - **Length of Section:** feet  
  - **Pipe Mat’l:** 
  - **Pipe Diameter:** inches
  - **Flush Orifice Size:** inches
  - **Station:** 
  - **Estimated to BeFlushed:** gal.
  - **Estimated Duration:** min.
  - **Actual Duration:** min.
- **Date:** Initial  Final  Initials

#### SERVICES:

- **Lot No’s:**
- **Date:** Initial  Final  Initials

#### HYDRANTS:

- **Station:** Initial  Final  Initials
- **Station:** Initial  Final  Initials
- **Station:** Initial  Final  Initials

#### BACTERIOLOGICAL SAMPLING: 703.2.12M

- **Date of Sample:**
- **Sample Taken By:** P.O. No.:
- **Samples Delivered To:** Date: Time:
- **Samples Analyzed By:**
- **Sample No. 1 Taken At:** [ ] Pass  [ ] Fail
- **Sample No. 2 Taken At:** [ ] Pass  [ ] Fail
- **Sample No. 3 Taken At:** [ ] Pass  [ ] Fail
- **Date of Result:** (Reference Attached Testing Report)
## HYDROSTATIC TEST: 703.2.11

### MAIN:

<table>
<thead>
<tr>
<th>TEST PRESSURE</th>
<th>INITIAL TEST</th>
<th>DATE</th>
<th>RETEST</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>@ START:</td>
<td></td>
<td></td>
<td>@ START:</td>
<td></td>
</tr>
<tr>
<td>@ 30 min:</td>
<td></td>
<td></td>
<td>@ 30 min:</td>
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<tr>
<td>@ 60 min:</td>
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<td>@ 60 min:</td>
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<tr>
<td>@ 90 min:</td>
<td></td>
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<td>@ 90 min:</td>
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</tr>
<tr>
<td>@ FINISH:</td>
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<td></td>
<td>@ FINISH:</td>
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<tr>
<td></td>
<td>PASS</td>
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<td>PASS</td>
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<tr>
<td></td>
<td>FAIL</td>
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</tbody>
</table>

**INITIALS**

**COMMENTS**

### SERVICES:

<table>
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<tr>
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<th>RETEST</th>
<th>DATE</th>
</tr>
</thead>
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<td>@ 30 min:</td>
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<td>@ FINISH:</td>
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<td>PASS</td>
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<td>PASS</td>
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<tr>
<td></td>
<td>FAIL</td>
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<td>FAIL</td>
<td></td>
</tr>
</tbody>
</table>

**INITIALS**

**COMMENTS**

### HYDRANTS:

<table>
<thead>
<tr>
<th>STREET &amp; STATION</th>
<th>TEST DATE</th>
<th>STREET &amp; STATION</th>
<th>TEST DATE</th>
<th>STREET &amp; STATION</th>
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<tr>
<td>@ START:</td>
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<td>FAIL</td>
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</tr>
</tbody>
</table>

**INITIALS**

**COMMENTS**

## LEAKAGE TEST: 703.2.11

**DATE**

**LENGTH OF SECTION:**

**PIPE MAT'L.:**

**DIAMETER:**

**LENGTH OF TEST:**

**ACCEPTABLE LOSS, per AWWA C600. TABLE 6:**

**GALLONS USED:**

**RESULT:**

**INITIALS**