

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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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.

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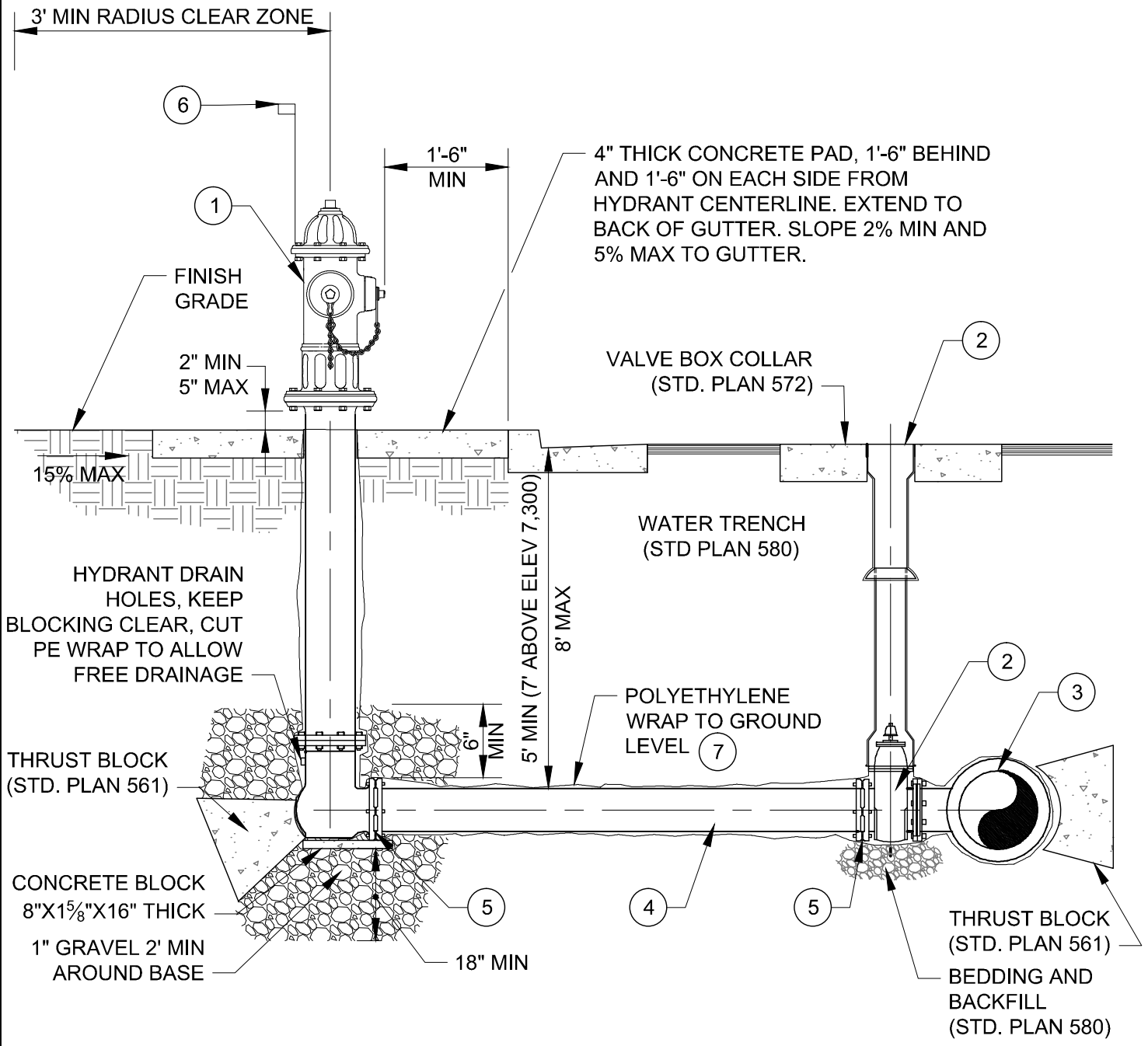
12. ALL CONSTRUCTION OF WATER SYSTEM SHALL BE CLEARLY STAKING BY THE DEVELOPER'S OR CONTRACTOR'S SURVEYOR. STAKING SHALL INCLUDE ALL BENDS, VALVES, HYDRANTS, SERVICES, METER VAULTS, AND SPECIALS. A MINIMUM OF 50-FOOT STATIONING IS REQUIRED FOR PIPELINE.
13. CHANGES TO THE APPROVED WATER PLANS, INCLUDING 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
16. THE HORIZONTAL DISTANCE BETWEEN WATER LINES AND SANITARY SEWER LINES SHALL BE AT LEAST 10 FEET. WHERE A WATER MAIN AND SEWER MUST CROSS, THE WATER MAIN SHALL BE AT LEAST 18 INCHES ABOVE THE SEWER LINE. SEPARATION DISTANCES SHALL BE MEASURED EDGE-TO-EDGE (I.E. FROM THE NEAREST EDGES OF THE FACILITIES)
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 ASBESTOS 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

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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](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.

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NOTES:

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

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LEGEND AND APPROVED PARTS LIST

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

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.

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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.

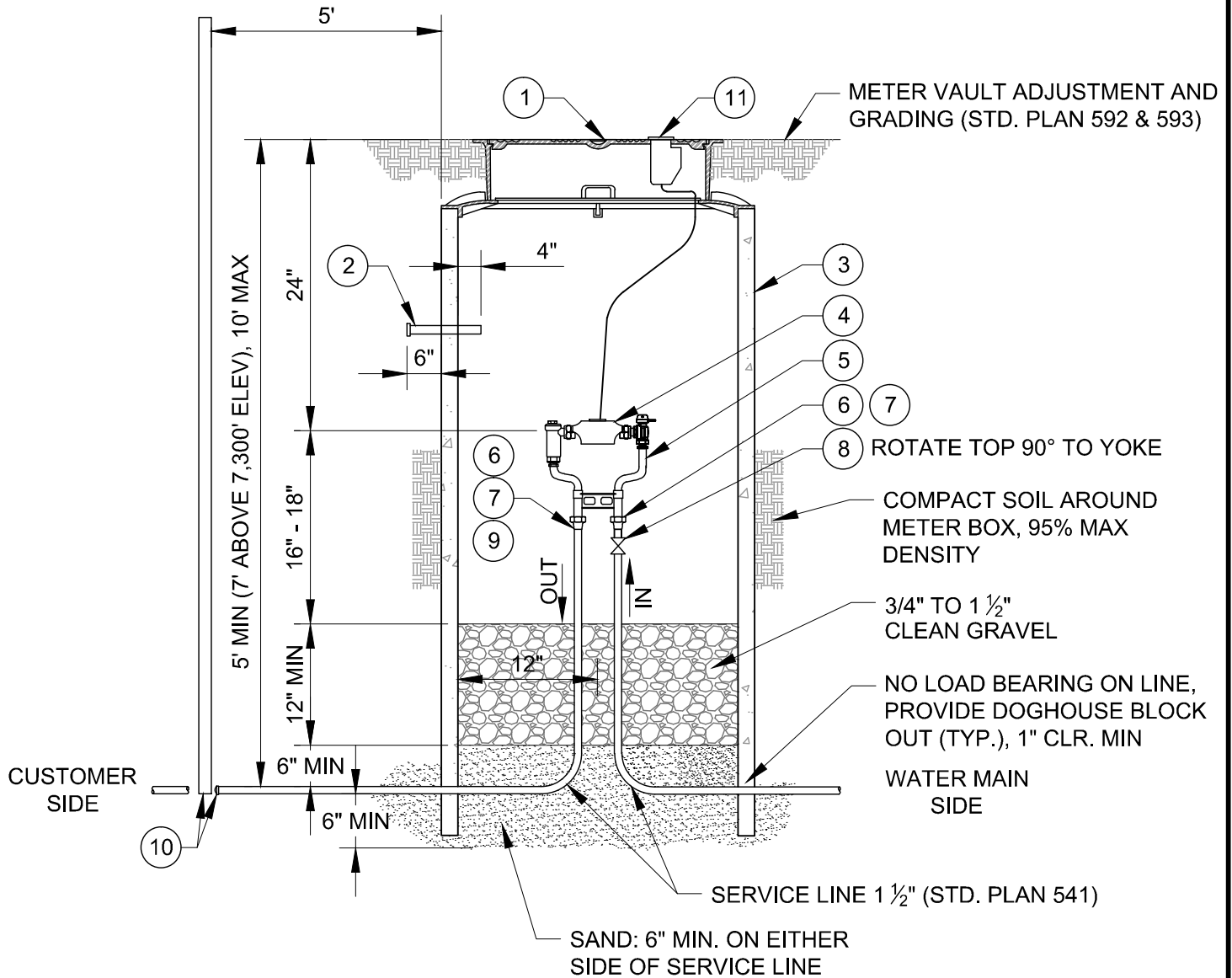
 PARK CITY MUNICIPAL CORPORATION WATER	DATE	GENERAL REQUIREMENTS METER, METER VAULT, AND SERVICE LINE	STD. PLAN
	5/2014		520.1
	REV.		
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11. IN MOST CASES THE METER TRANSCEIVER UNIT (MXU) DEVICE WILL MOUNT THROUGH THE METER VAULT LID. IF METER LOCATION 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 APPURTENANCES 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.

 PARK CITY MUNICIPAL CORPORATION WATER	DATE	GENERAL REQUIREMENTS METER, METER VAULT, AND SERVICE LINE	STD. PLAN
	5/2014		520.2
	REV.		
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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.



PARK CITY MUNICIPAL CORPORATION
WATER

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**3/4" AND 1" SINGLE METER
OUTSIDE SETTING**

STD. PLAN


521

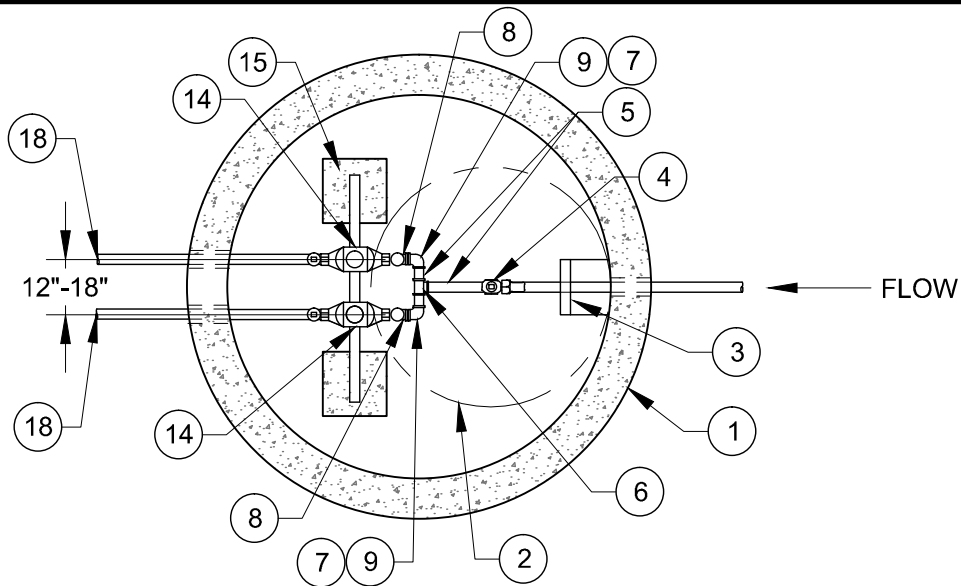
LEGEND AND APPROVED PARTS LIST

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

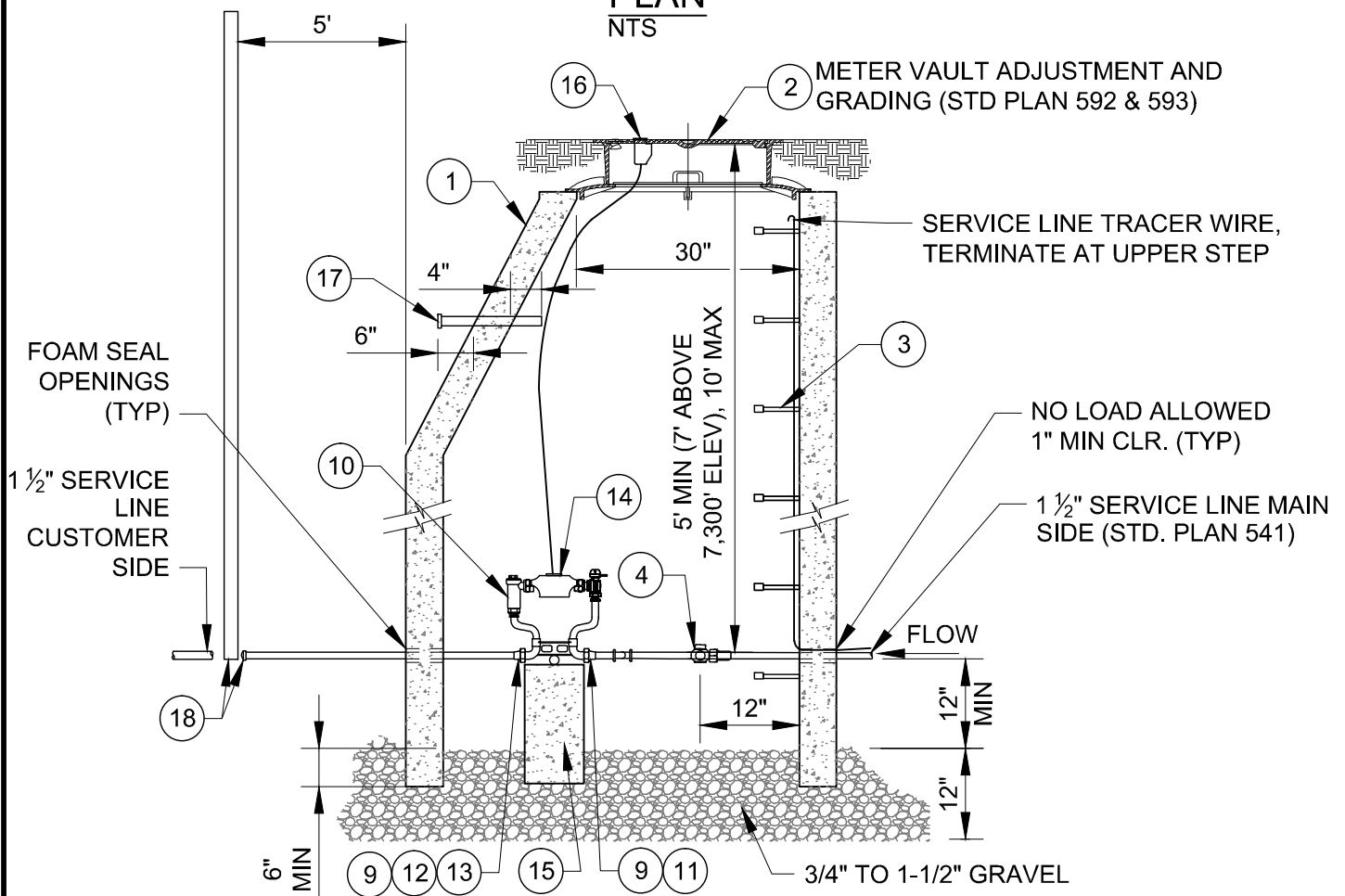
DETAIL NOTES

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

 PARK CITY MUNICIPAL CORPORATION WATER	DATE	3/4" and 1" SINGLE METER OUTSIDE SETTING	STD. PLAN
	4/2014		521 S
	REV.		
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PLAN
NTS



SECTION
NTS

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.


 PARK CITY MUNICIPAL CORPORATION WATER	DATE	3/4" AND 1" DUAL METERS OUTSIDE SETTING	STD. PLAN
	05/2014		522
	REV.		
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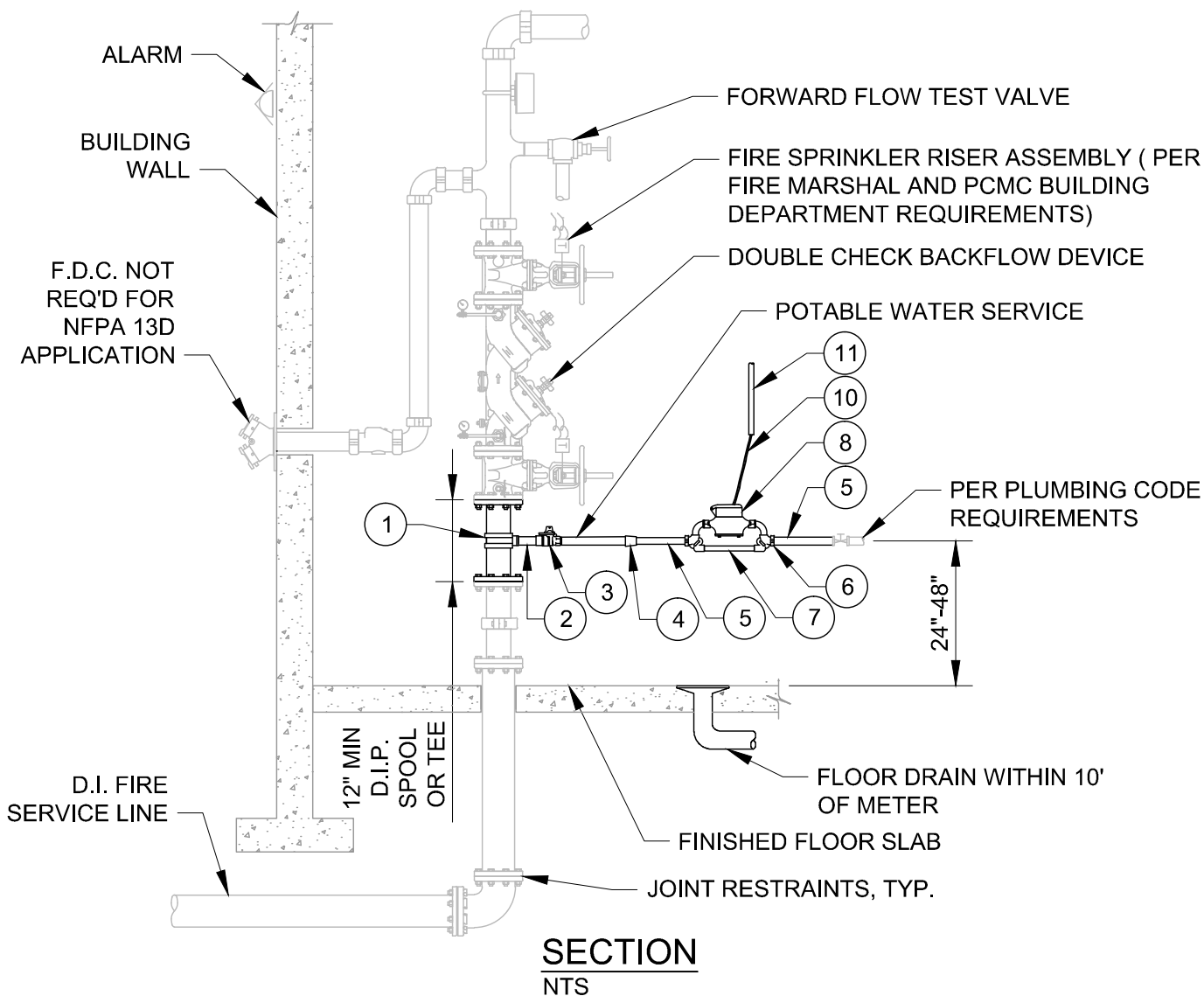
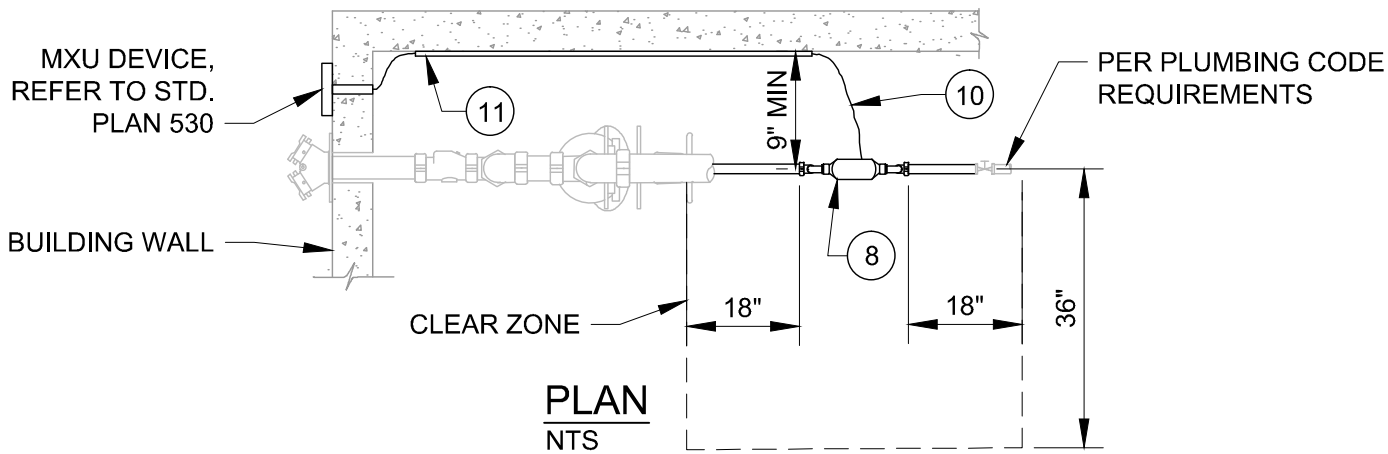
LEGEND AND APPROVED PARTS LIST

ITEM	DESCRIPTION	ACCEPTABLE MANUFACTURER	MODELS
①	4' DIA. MANHOLE, PRECAST CONCRETE ECCENTRIC CONE AND WALL SECTIONS		ASTM C 478
②	METER VAULT FRAME AND COVER (STD PLAN 529)		
③	POLYPROPYLENE ENCASED GRADE 60 STEEL STEPS AT 13" C-C, 13-1/2" TREAD WIDTH	M.A. INDUSTRIES OR APP'D EQUAL	PS2-PFDF
④	1-1/2" CURB VALVE	MUELLER	B-25172N
⑤	1-1/2" DIA. BRASS NIPPLE X 6" LENGTH, M.I.P.		
⑥	1-1/2" DIA. BRONZE TEE, F.I.P., THREADED		
⑦	1-1/2" BRONZE 90° ELBOW, F.I.P., THREADED (2 EA)		
⑧	1-1/2" BRASS NIPPLE X 4" LENGTH, M.I.P. (2 EA)		
⑨	BRONZE BELL REDUCER REQ'D (2 EA) 3/4" YOKE: 1-1/2" X 3/4" 1" YOKE: 1-1/2" X 1" DIA.		
⑩	3/4" METER YOKE (2 EA)	MUELLER	5/8"x3/4"x9" B2404N-6AN
		FORD	5/8"x3/4" VBHC72-9W-11-33-NL
	1" METER YOKE (2 EA)	MUELLER	1"x12" B2404N-6AN
		FORD	1" VBHC72-12W-11-44-NL
⑪	3/4" OR 1" METER YOKE END CONNECTIONS (2 EA)	MUELLER	MULTI X M.I.P., H-14223N
		FORD	3/4" OR 1" CLOSE BRASS NIPPLE
⑫	1-1/2" x 3/4" OR 1" BRONZE BUSHING (OUTLET) (2 EA)		
⑬	1-1/2" CONNECTION, F.I.P. X CTS (OUTLET) (2 EA)	MUELLER	H-15451N
		FORD	C-14-66-G-NL
⑭	METER, SUPPLIED AND INSTALLED BY PCMC (2 EA)		
⑮	PIPE SUPPORTS, GALVANIZED PIPE SUPPORT ROD AND (2) 16"x8"x8" CMU BLOCK		
⑯	MXU AND WIRING, SUPPLIED AND INSTALLED BY PCMC		
⑰	MXU REMOTE LOCATION CONDUIT WITH END CAPS, SCH 40 PVC (STD. PLAN 531)		
⑱	END CAP AND MARKER, CTS X F.I.P. (OUTLET) (2 EA)	MUELLER	H-15451N AND H-10035N

DETAIL NOTES

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

 PARK CITY MUNICIPAL CORPORATION WATER	DATE	3/4" and 1" DUAL METER OUTSIDE SETTING	STD. PLAN
	4/2014		522 S
	REV.		



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.

 PARK CITY MUNICIPAL CORPORATION WATER	DATE	3/4" AND 1" METER INSIDE SETTING	STD. PLAN
	05/2014		523
	REV.		
	0		

LEGEND AND APPROVED PARTS LIST

ITEM	DESCRIPTION	ACCEPTABLE MANUFACTURER	MODELS
①	1" BRONZE SERVICE SADDLE, DOUBLE STRAP	MUELLER	BR2B SERIES, CC THREADS
		FORD	STYLE 202B, CC THREADS
②	1" DIA. BRASS NIPPLE x 2" LENGTH, M.I.P.		
③	1" CURB VALVE, F.I.P. X F.I.P.	MUELLER	B-20283N
④	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)		
⑤	3/4" OR 1" DIA. COPPER PIPING AND FITTINGS, AS REQ'D PER SITE SPECIFIC LAYOUT		
⑥	3/4" OR 1" METER YOKE END CONNECTIONS	MUELLER	MULTI X F.I.P, H-14222N
⑦	3/4" METER YOKE (STRAIGHT LINE INLET AND OUTLET)	MUELLER	5/8"x3/4"x7" B-2418-6AN
		FORD	5/8"x3/4" LSVH11-233W-NL
	3/4" METER YOKE (VERTICAL INLET AND OUTLET)	MUELLER	5/8"x3/4"x10" B-2448-6AN
		FORD	5/8"x3/4" LSVH11-233W-NL
	1" METER YOKE (STRAIGHT LINE INLET AND OUTLET)	MUELLER	1" VBHC84-12W-11-44-NL
		FORD	1" LSVH11-444W-NL
	1" METER YOKE (VERTICAL INLET AND OUTLET)	MUELLER	1"x12" B-2448-6AN
		FORD	1" KHVBHC-4-FP-NL
⑧	METER, SUPPLIED AND INSTALLED BY PCMC		
⑨	PIPE SIZE BRASS NIPPLE AND CURB VALVE, F.I.P. X F.I.P.	MUELLER	B-20283N
⑩	MXU AND WIRING, SUPPLIED AND INSTALLED BY PCMC		
⑪	EMT CONDUIT FOR MXU WIRING, AS REQUIRED		



PARK CITY MUNICIPAL CORPORATION
WATER

DATE

5/2014

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**3/4" and 1" METER
INSIDE SETTING**

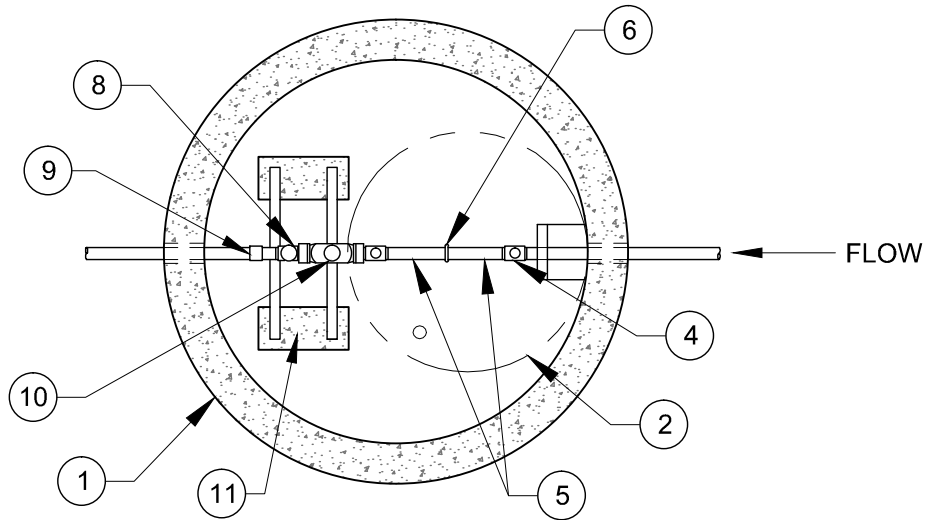
STD. PLAN

523 S.1

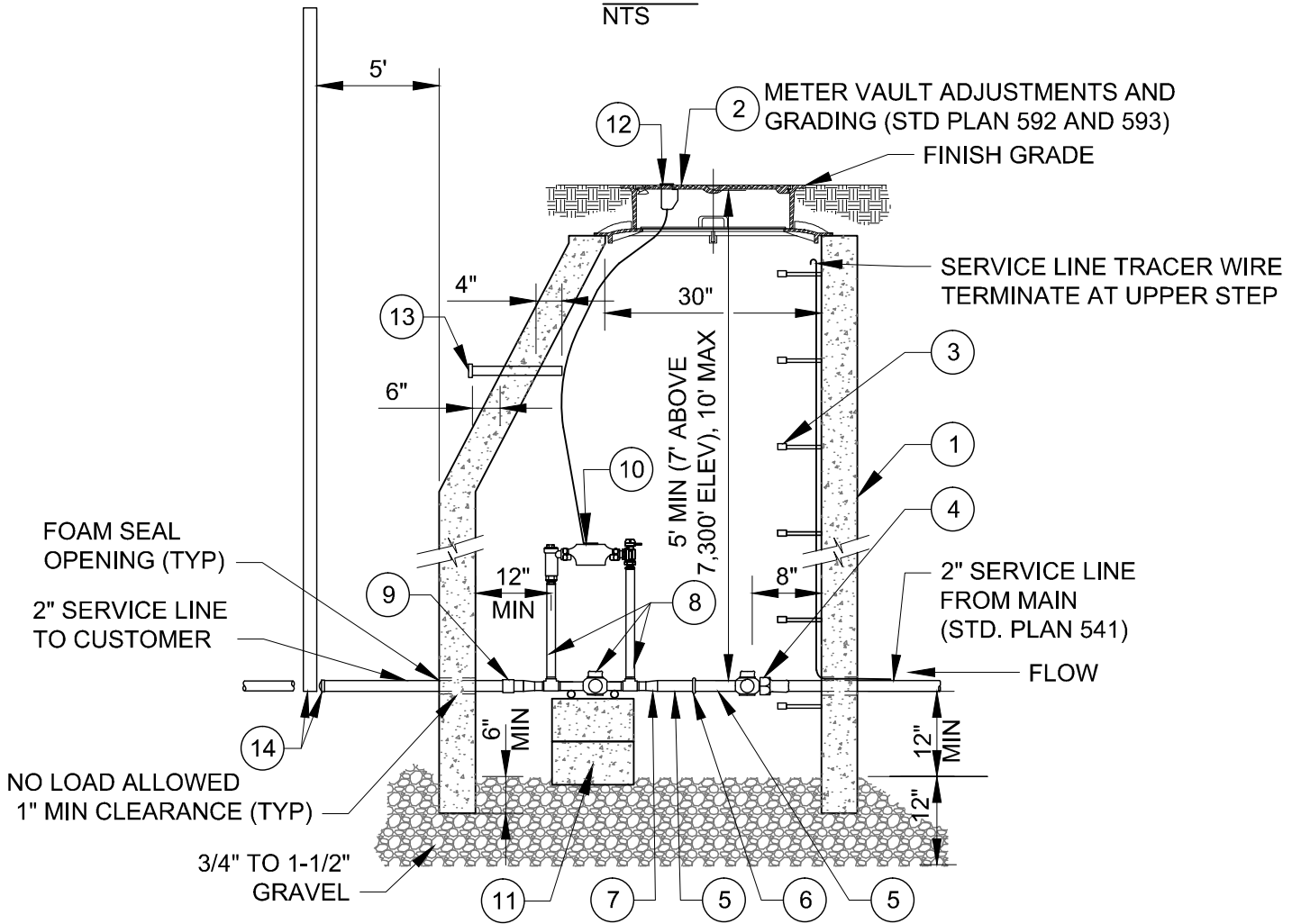
DETAIL NOTES

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. 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. 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

 PARK CITY MUNICIPAL CORPORATION WATER	DATE	3/4" and 1" METER INSIDE SETTING	STD. PLAN
	5/2014		523 S.2
	REV.		
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PLAN
NTS



SECTION
NTS

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.


 PARK CITY MUNICIPAL CORPORATION WATER	DATE	1-1/2" AND 2" SINGLE METER OUTSIDE SETTING	STD. PLAN
	05/2014		524
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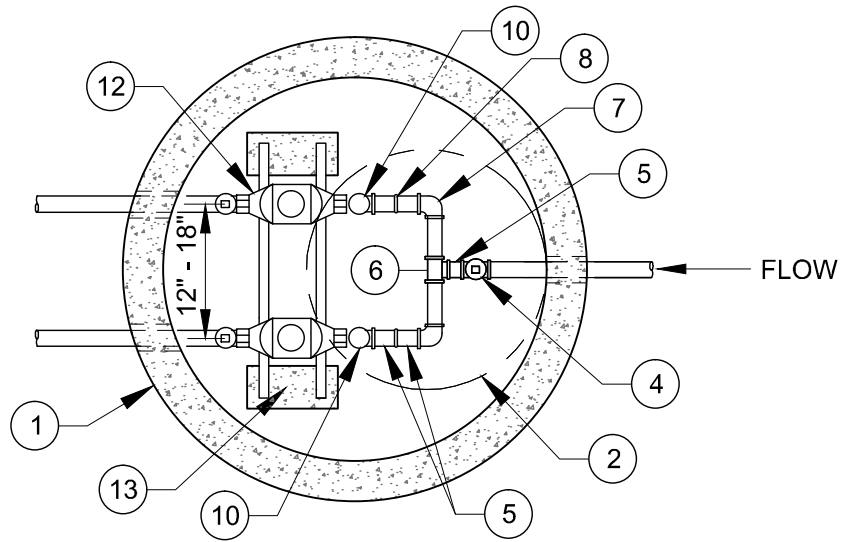
LEGEND AND APPROVED PARTS LIST

ITEM	DESCRIPTION	ACCEPTABLE MANUFACTURER	MODELS
①	5' DIA. MANHOLE, PRECAST CONCRETE ECCENTRIC CONE AND WALL SECTIONS		ASTM C 478
②	METER VAULT FRAME AND COVER (STD. PLAN 529)		
③	POLYPROPYLENE ENCASED GRADE 60 STEEL STEPS AT 13" C-C, 13-1/2" TREAD WIDTH	M.A. INDUSTRIES OR APPV'D EQ.	PS2-PFDF
④	2" CURB VALVE, F.I.P. x CTS	MUELLER	B-25172N
⑤	2" DIA. BRASS NIPPLE x 4" LENGTH, M.I.P.		
⑥	2" BRONZE UNION, F.I.P., THREADED		
⑦	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)		
⑧	1-1/2" METER YOKE COMMERCIAL SERVICE: WITH BYPASS RESIDENTIAL SERVICE: WITHOUT BYPASS IRRIGATION SERVICE: WITHOUT BYPASS	MUELLER	1-1/2"x15" B2423-2-01N (WITH BYPASS) 1-1/2"x15" B2422-2N (WITHOUT BYPASS)
		FORD	1-1/2" VBHH76-15B-11-66-NL (WITH BYPASS) 1-1/2" VBHH76-15-11-66-NL (WITHOUT BYPASS)
	2" METER YOKE COMMERCIAL SERVICE: WITH BYPASS RESIDENTIAL SERVICE: WITHOUT BYPASS IRRIGATION SERVICE: WITHOUT BYPASS	MUELLER	2"x15" B2423-2-01N (WITH BYPASS) 2"x15" B2422-2N (WITHOUT BYPASS)
		FORD	2" VBHH77-15B-11-77-NL (WITH BYPASS) 2" VBHH77-15-11-77-NL (WITHOUT BYPASS)
⑨	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	MUELLER	H-15451N
		FORD	C-14-66-G-NL
⑩	METER, SUPPLIED AND INSTALLED BY PCMC		
⑪	PIPE SUPPORTS (4) 16"x8"x8" CMU BLOCK, (2) METER SUPPORT RODS, GALVANIZED		
⑫	MXU AND WIRING, SUPPLIED AND INSTALLED BY PCMC		
⑬	MXU REMOTE LOCATION CONDUIT WITH END CAPS, SCH 40 PVC (STD. PLAN 531)		
⑭	END CAP AND MARKER, CTS x F.I.P. (OUTLET)		H-15451N AND H-10035N

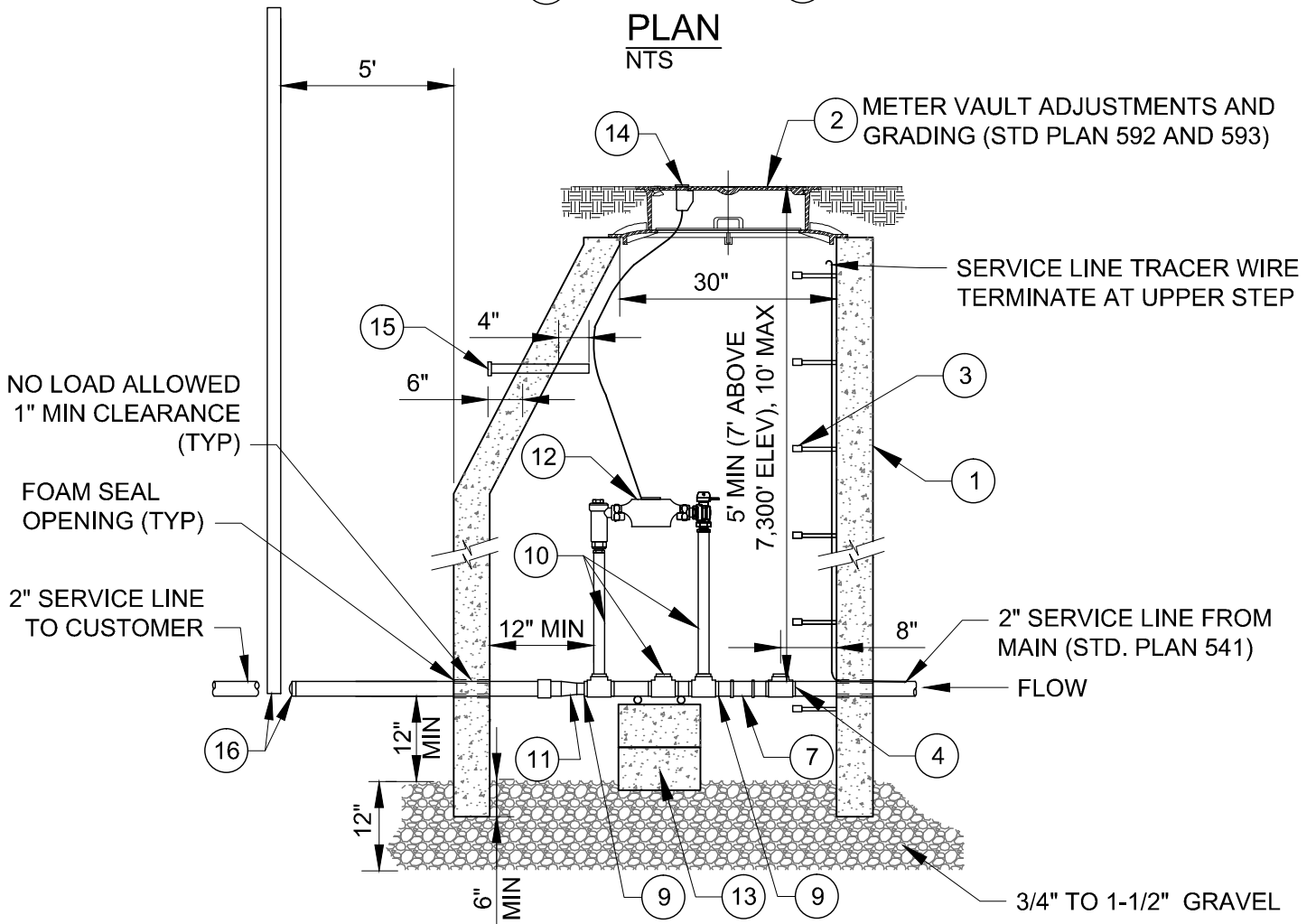
DETAIL NOTES

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

 PARK CITY MUNICIPAL CORPORATION WATER	DATE	1-1/2" and 2" SINGLE METER OUTSIDE SETTING	STD. PLAN
	3/2014		524 S
	REV.		



PLAN
NTS



SECTION
NTS

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.



PARK CITY MUNICIPAL CORPORATION
WATER

DATE

05/2014

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**1-1/2" DUAL METERS
OUTSIDE SETTING**

STD. PLAN


525

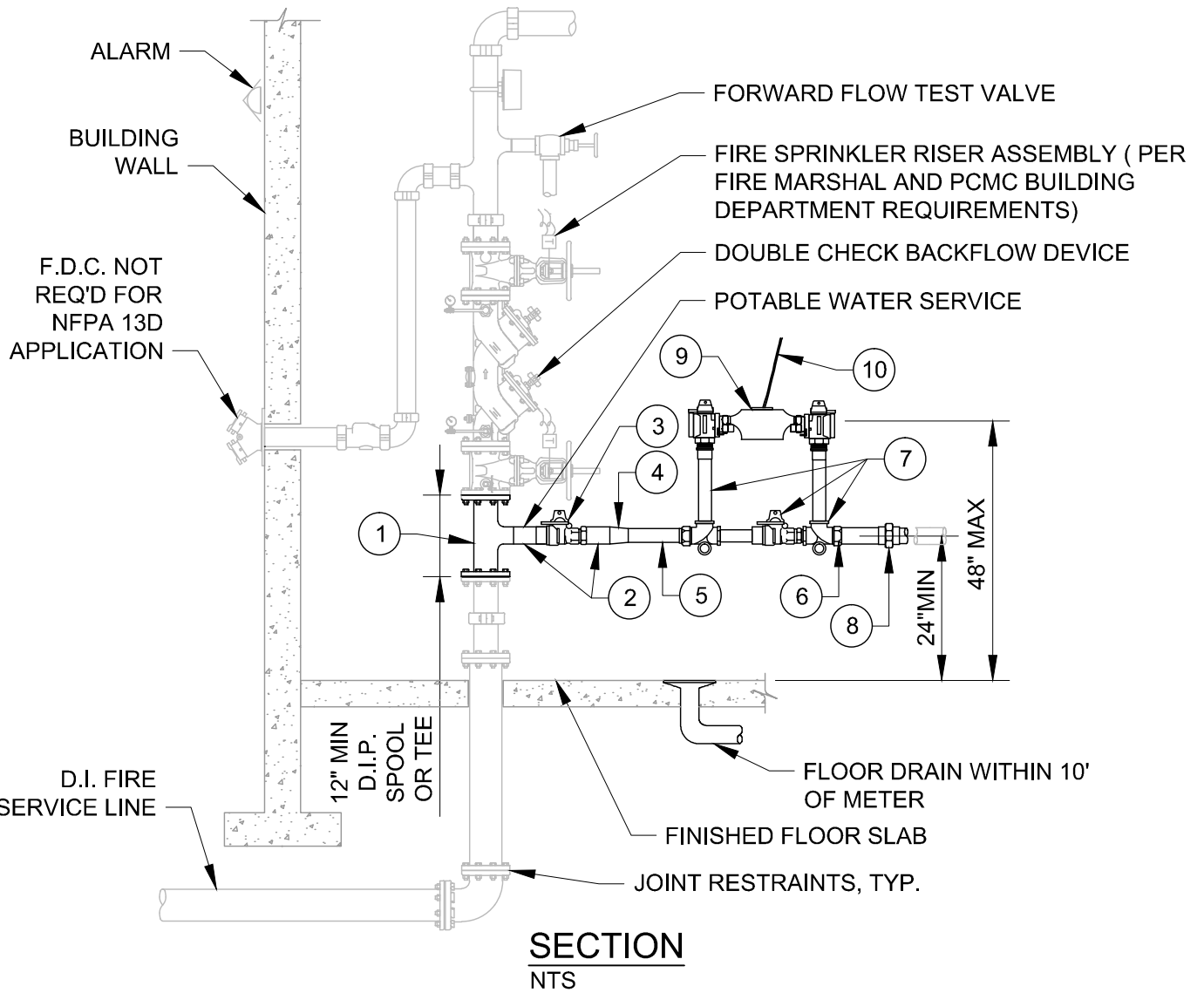
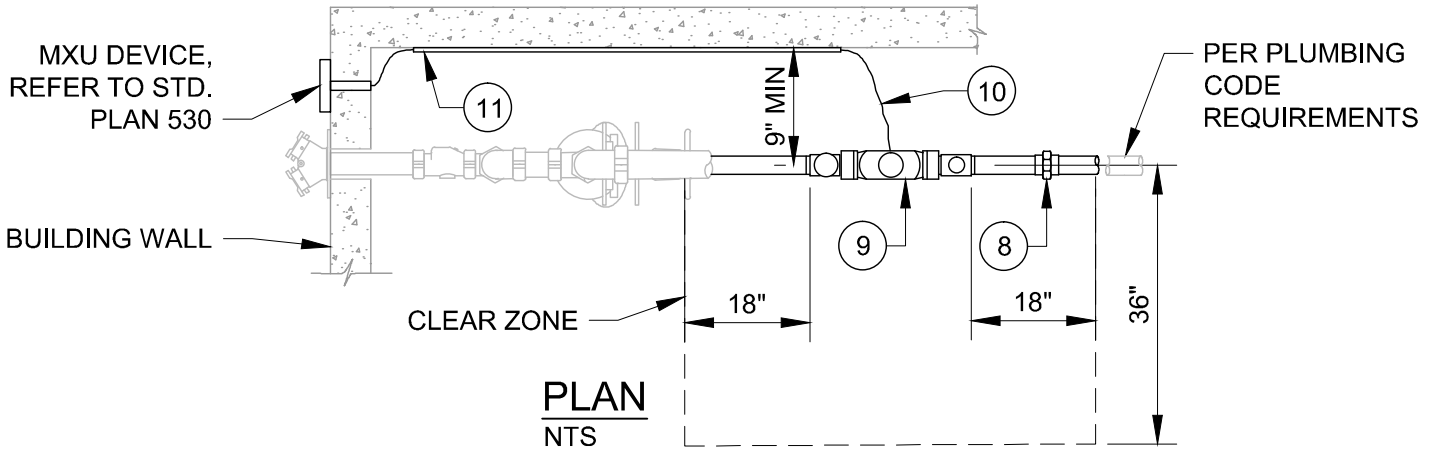
LEGEND AND APPROVED PARTS LIST

ITEM	DESCRIPTION	ACCEPTABLE MANUFACTURER	MODELS
①	5' DIA. MANHOLE, PRECAST CONCRETE ECCENTRIC CONE AND WALL SECTIONS		ASTM C 478
②	METER VAULT FRAME AND COVER (STD. PLAN 529)		
③	POLYPROPYLENE ENCASED GRADE 60 STEEL STEPS AT 13" C-C, 13-1/2" TREAD WIDTH	M.A. INDUSTRIES OR APPV'D EQ.	PS2-PFDF
④	2" CURB VALVE, F.I.P. x CTS	MUELLER	B-25172N
⑤	2" DIA. BRASS NIPPLE x 3" LENGTH, M.I.P. (5 EA)		
⑥	2" DIA. BRONZE TEE, F.I.P., THREADED		
⑦	2" BRONZE 90° ELBOW, F.I.P., THREADED (2 EA)		
⑧	2" BRONZE UNION, F.I.P., THREADED (2 EA)		
⑨	1-1/2" BRASS NIPPLE x 4" LENGTH, 2" x 1-1/2" BRONZE BELL REDUCER, AND 1-1/2" CLOSE BRASS NIPPLE (2 EA)		
⑩	1-1/2" METER YOKE (2 EA) COMMERCIAL SERVICE: WITH BYPASS RESIDENTIAL SERVICE: WITHOUT BYPASS IRRIGATION SERVICE: WITHOUT BYPASS	MUELLER	1-1/2"x15" B2423-2-01N (WITH BYPASS) 1-1/2"x15" B2422N (WITHOUT BYPASS)
		FORD	1-1/2" VBHH76-15B-11-66-NL (WITH BYPASS) 1-1/2" VBHH76-15-11-66-NL (WITHOUT BYPASS)
⑪	2" CONNECTION, F.I.P. x CTS; 2" BRASS NIPPLE x 4" LENGTH; 2"x1-1/2" BRONZE BELL REDUCER; AND 1-1/2" CLOSE BRASS NIPPLE (OUTLET) (2 EA)	MUELLER	H-15451N
		FORD	C-14-66-G-NL
⑫	METER, SUPPLIED AND INSTALLED BY PCMC (2 EA)		
⑬	PIPE SUPPORTS (4) 16"x8"x8" CMU BLOCK, (2) METER SUPPORT RODS, GALVANIZED		
⑭	MXU AND WIRING, SUPPLIED AND INSTALLED BY PCMC		
⑮	MXU REMOTE LOCATION CONDUIT WITH END CAPS, SCH 40 PVC (STD. PLAN 531)		
⑯	END CAP AND MARKER, CTS X F.I.P. (OUTLET) (2 EA)		H-15451N AND H-10035N

DETAIL NOTES


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

 PARK CITY MUNICIPAL CORPORATION WATER	DATE	1-1/2" DUAL METERS OUTSIDE SETTING	STD. PLAN
	4/2014		525 S
	REV.		



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.

 PARK CITY MUNICIPAL CORPORATION WATER	DATE	1-1/2" AND 2" METER INSIDE SETTING	STD. PLAN
	05/2014		526
	REV.		
	0		

LEGEND AND APPROVED PARTS LIST

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



PARK CITY MUNICIPAL CORPORATION
WATER

DATE

5/2014

REV.

0


**1.5" and 2" METER
INSIDE SETTING**

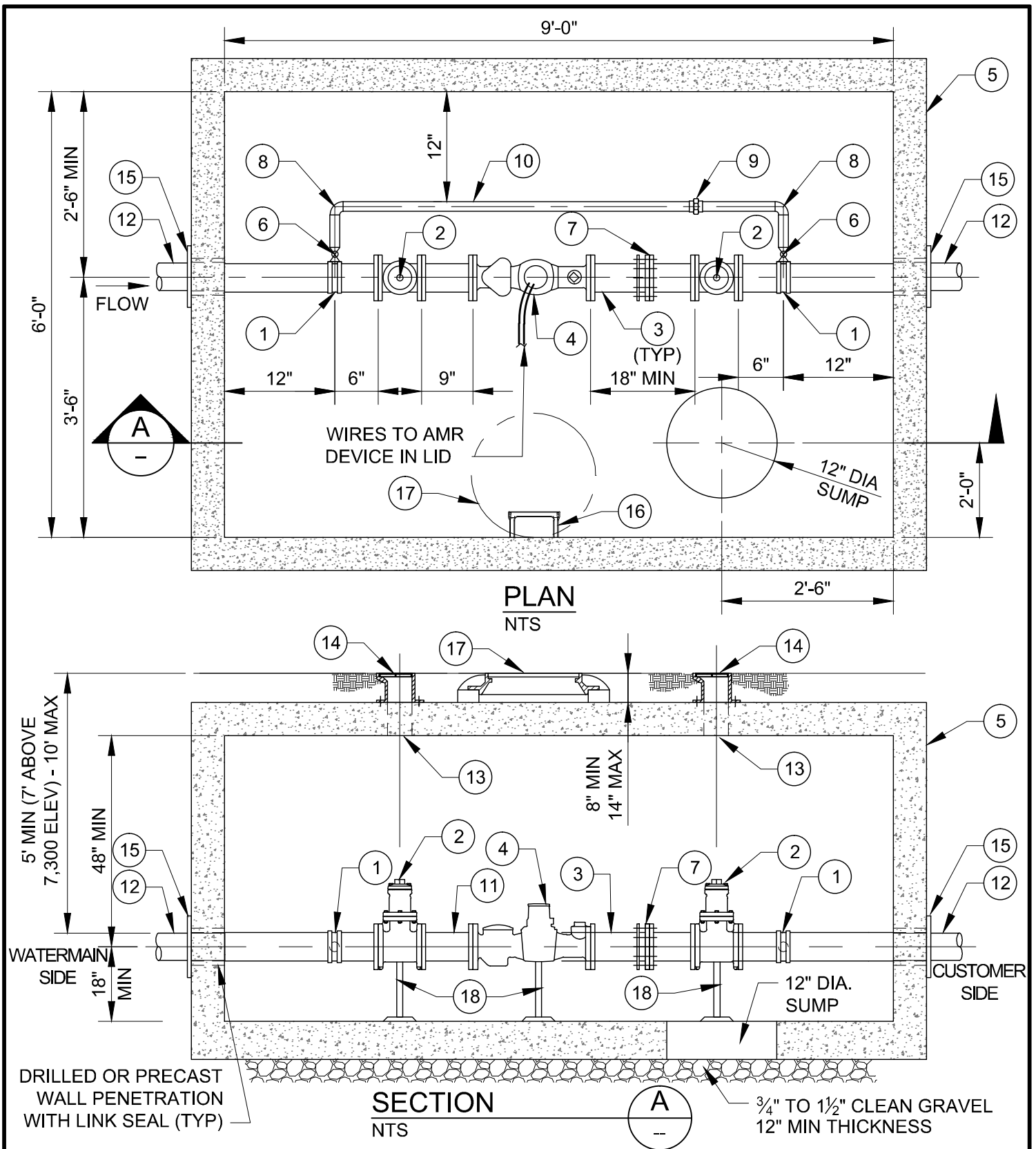
STD. PLAN

526 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. 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

 PARK CITY MUNICIPAL CORPORATION WATER	DATE	1.5" and 2" METER INSIDE SETTING	STD. PLAN
	5/2014		526 S.2
	REV.		
	0		



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.


 PARK CITY MUNICIPAL CORPORATION WATER	DATE	3" AND LARGER METER OUTSIDE SETTING	STD. PLAN
	03/2014		527
	REV.		
	0		

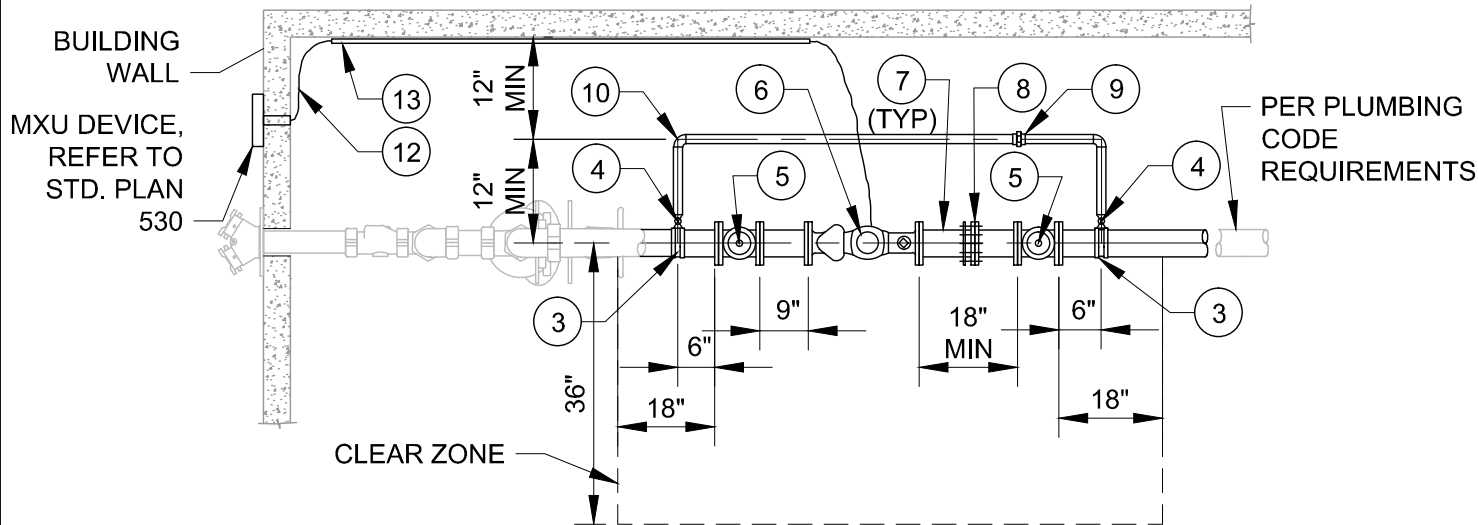
LEGEND AND APPROVED PARTS LIST

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

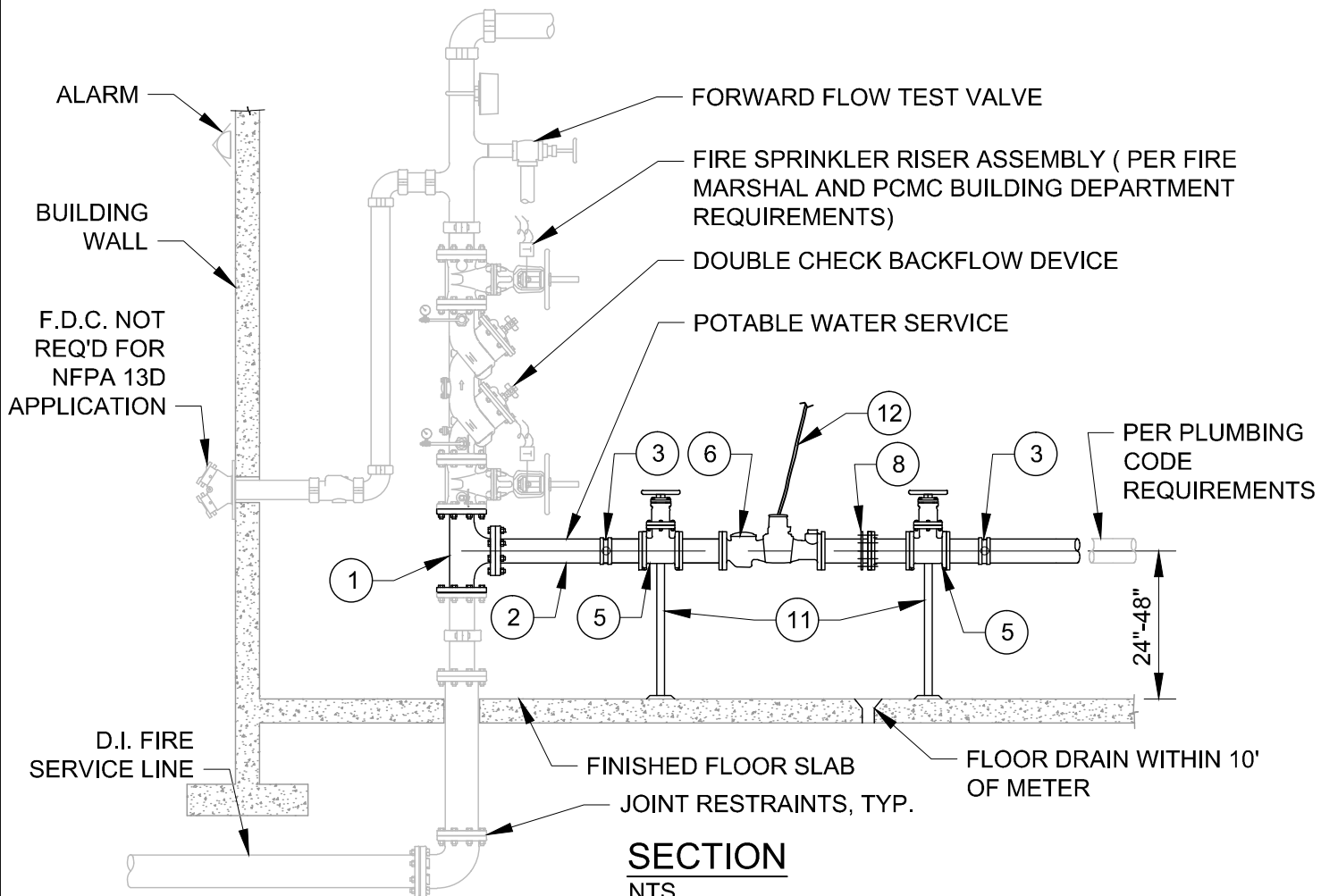
DETAIL NOTES

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

 PARK CITY MUNICIPAL CORPORATION WATER	DATE	3" AND LARGER METER OUTSIDE SETTING	STD. PLAN
	2/2014		527 S
	REV.		




PLAN
NTS



SECTION
NTS

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.

 PARK CITY MUNICIPAL CORPORATION WATER	DATE	3" AND LARGER METER INSIDE SETTING	STD. PLAN
	05/2014		528
	REV.		
	0		

LEGEND AND APPROVED PARTS LIST

ITEM	DESCRIPTION	ACCEPTABLE MANUFACTURER	MODELS
①	DUCTILE IRON TEE, FLG., PRESSURE CLASS 350, CEMENT-MORTAR LINED, ASPHALTIC INTERIOR COATING, AWWA C150 / C151 / C104	U.S. PIPE PACIFIC STATES	
		U.S. PIPE PACIFIC STATES	
②	DUCTILE IRON PIPE SPOOL, FLG. X FLG., 3" TO 12" DIAMETER, FULL BODY, PRESSURE CLASS 350, CEMENT-MORTAR LINED, ASPHALTIC INTERIOR COATING, AWWA C150 / C151 / C104	U.S. PIPE PACIFIC STATES	
③	2" BRONZE SERVICE SADDLE, DOUBLE STRAP	MUELLER	BR2B SERIES, FIP THDS
		FORD	STYLE 202B, FIP THDS
④	2" BRONZE BALL VALVE WITH LOCKING HANDLE, F.I.P., THREADED, 300 PSI RATED, LEAD FREE		
⑤	GATE VALVE, PIPE SIZE, NRS WITH HANDWHEEL, FLANGED, 2" SQ. OPERATING NUT, AWWA C509	MUELLER	SERIES A-2360
		CLOW	MODEL 2639
⑥	METER, SUPPLIED AND INSTALLED BY PCMC		
⑦	DUCTILE IRON PIPE SPOOL (2), FLG X PE	MUELLER	MULTI X F.I.P, H-14222N
⑧	DISMANTLING JOINT, WITH RESTRAINING BOLTS	ROMAC	DJ400 OR APPV'D EQUAL
⑨	2" BRONZE UNION, F.I.P., THREADED, LEAD FREE		
⑩	2" COPPER PIPE, TYPE K, WITH COPPER 90° ELBOW, SOLDERED, OR BRASS NIPPLE BRONZE, F.I.P., WITH THREADED 90° ELBOW (NO GALVANIZED MATERIALS)		
⑪	PIPE SUPPORTS, 2 REQ'D ON MAIN SERVICE LINE AND 2 REQ'D ON BYPASS SERVICE		
⑫	MXU AND WIRING, SUPPLIED AND INSTALLED BY PCMC		
⑬	1/2" EMT CONDUIT FOR MXU WIRING, AS REQUIRED		



PARK CITY MUNICIPAL CORPORATION
WATER

DATE

5/2014

REV.

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**3" AND LARGER METER
INSIDE SETTING**

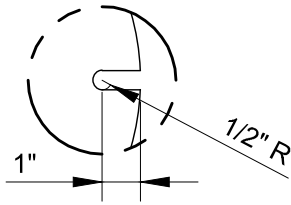
STD. PLAN

528 S.1

DETAIL NOTES

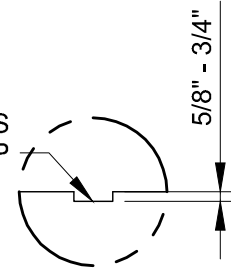
1. USE OF AN INSIDE WATER METER REQUIRES CITY ENGINEER APPROVAL. REFERENCE WATER STANDARD PLAN 520 FOR APPLICABLE CONDITIONS.
2. FIRE SPRINKLER RISER WITH POTABLE WATER SERVICE: A SITE SPECIFIC DESIGN IS REQUIRED. THE FIRE PROTECTION SPRINKLER SYSTEM AND POTABLE WATER SYSTEM DESIGN SHALL BE APPROVED 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

 PARK CITY MUNICIPAL CORPORATION WATER	DATE	3" AND LARGER METER INSIDE SETTING	STD. PLAN
	5/2014		528 S.2
	REV.		
	0		

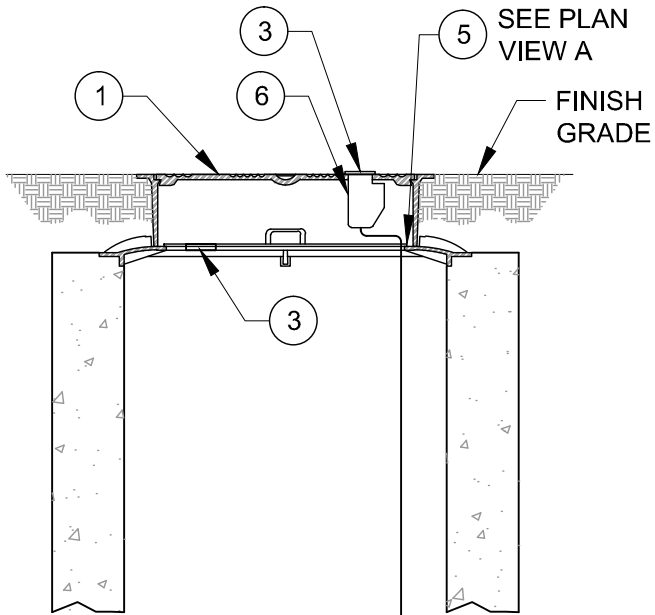


PLAN VIEW A

4 1/2" DIA. RECESS
W/ 2" TAP

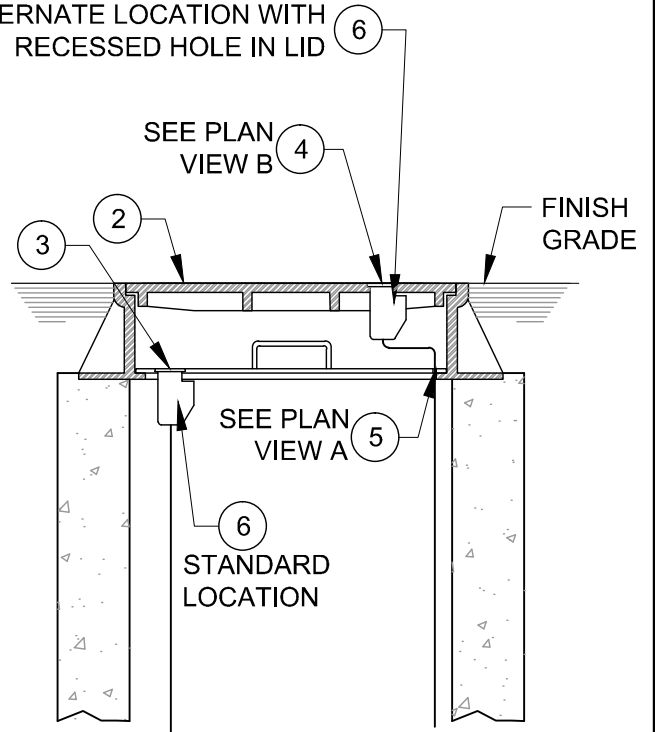


PLAN VIEW B



LANDSCAPE AREA

ALTERNATE LOCATION WITH
RECESSED HOLE IN LID



PAVEMENT AREA



PARK CITY MUNICIPAL CORPORATION
WATER

DATE

03/2014

REV.

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**METER VAULT FRAME AND
COVER / MXU DEVICE
LOCATION**

STD. PLAN


529

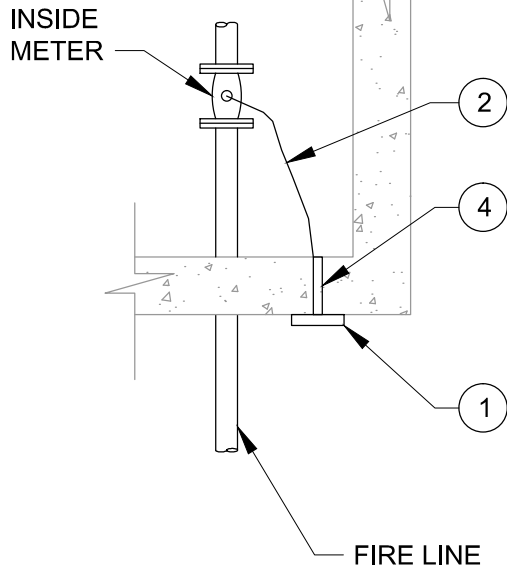
LEGEND AND APPROVED PARTS LIST

ITEM	DESCRIPTION	ACCEPTABLE MANUFACTURER	MODELS
①	METER VAULT FRAME AND COVER, MARKED "WATER"	D&L SUPPLY	L-2320, OR APPROVED EQUAL
②	METER VAULT FRAME AND COVER, TRAFFIC RATED, MARKED "WATER"	D&L SUPPLY	A-1019, OR APPROVED EQUAL
③	2" TAP AND PLUG, REQUIRED	FORD OR APPROVED EQUAL	PLUG: PTP
④	2" TAP WITH RECESSED PLUG, REQUIRED (PLAN VIEW 'B')		
⑤	NOTCH INNER FROST FREE LID FOR SIGNAL WIRE (PLAN VIEW 'A')		
⑥	MXU AND WIRING, SUPPLIED AND INSTALLED BY PCMC		
⑦	METER VAULT, MATERIALS VARY		

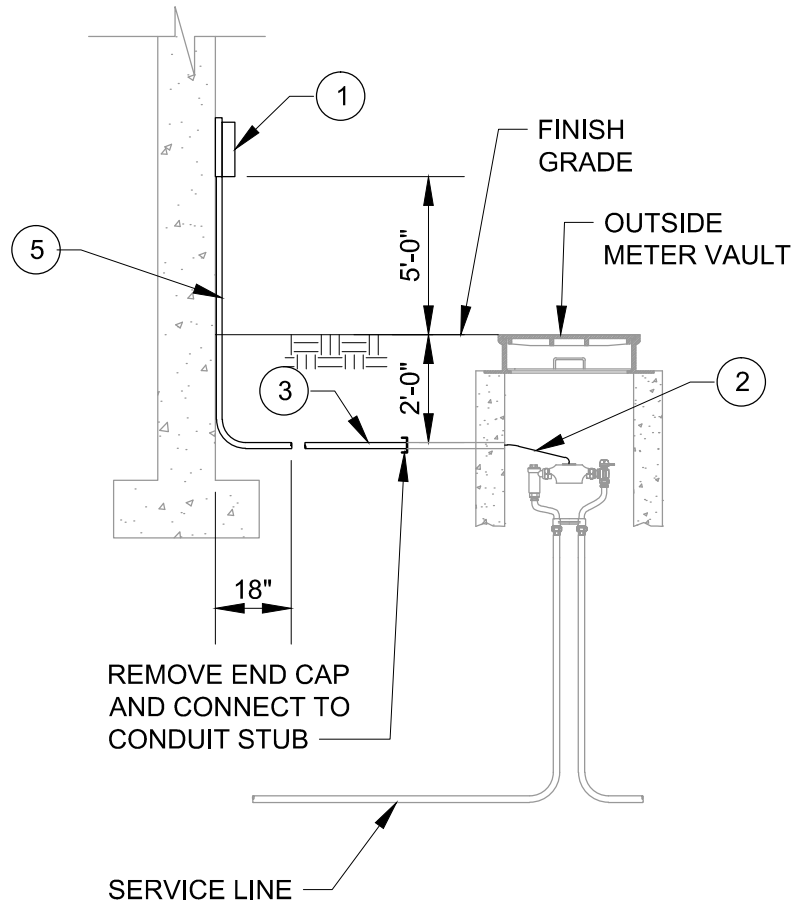
DETAIL NOTES

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

 PARK CITY MUNICIPAL CORPORATION WATER	DATE	METER VAULT FRAME AND COVER / MXU DEVICE LOCATION	STD. PLAN
	3/2014		529 S
	REV.		
	0		



INSIDE METER



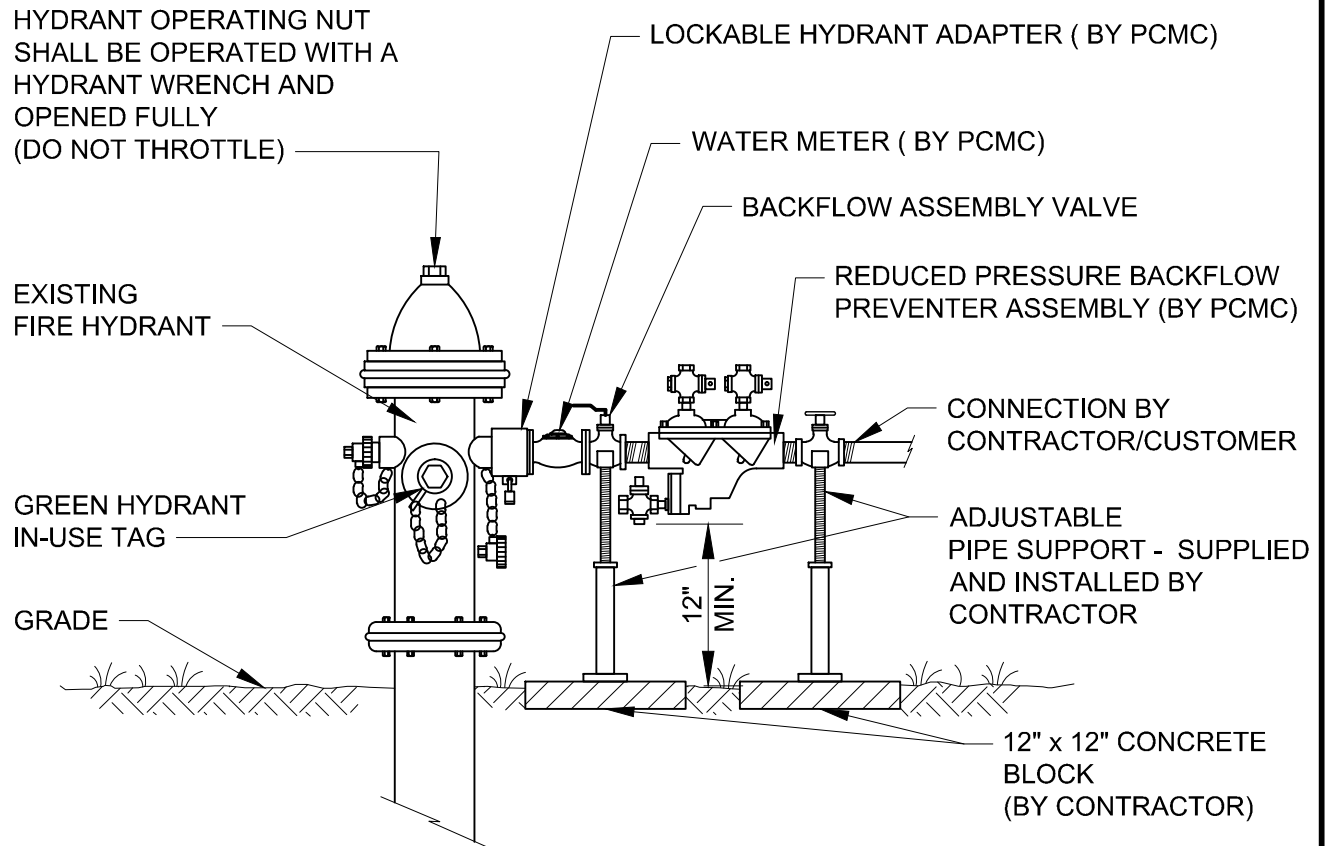
OUTSIDE METER

LEGEND	
ITEM	DESCRIPTION
①	REMOTE RADIO READ MXU, 6"X6", DEVICE SURFACE MOUNT, BY PCMC
②	MXU SIGNAL WIRE, SUPPLIED AND INSTALLED BY PCMC
③	3/4" PVC NEMA TC-2 CONDUIT BY CUSTOMER
④	WALL PENETRATION, BY CUSTOMER
⑤	3/4" GALVANIZED RIGID STEEL CONDUIT, BY CUSTOMER

NOTES:

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

 PARK CITY MUNICIPAL CORPORATION WATER	DATE	REMOTE MXU DEVICE	STD. PLAN
	03/2014		530
	REV.		
	0		



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 ACTIVE 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.

 PARK CITY MUNICIPAL CORPORATION WATER	DATE	TEMPORARY HYDRANT METER ASSEMBLY	STD. PLAN
	03/2014		531
	REV.		
	0		

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

 PARK CITY MUNICIPAL CORPORATION WATER	DATE	METALLIC PIPE CORROSION PROTECTION	STD. PLAN
	5/2014		534.1
	REV.		
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- 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:

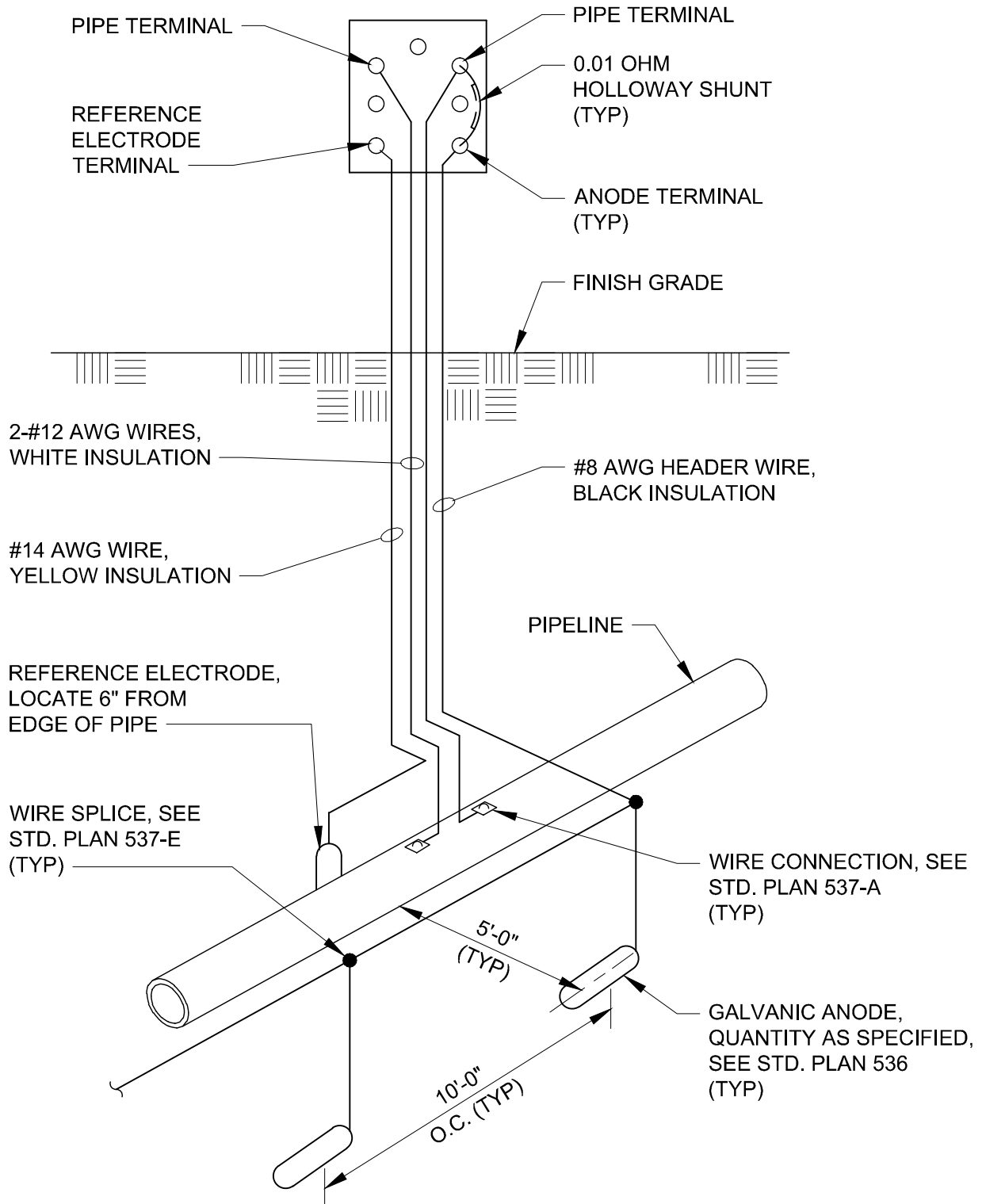
TABLE 1 - SOIL CORROSIVITY CLASSIFICATION VERSUS SOIL RESISTIVITY

CORROSIVITY	RESISTIVITY, OHM-CM	TREATMENT
EXTREMELY CORROSIVE	LESS THAN 1,000	SITE SPECIFIC DESIGN REQUIRED
VERY CORROSIVE	1,000 TO 3,000	SITE SPECIFIC DESIGN REQUIRED
CORROSIVE	3,000 TO 6,000	NON-METALLIC PIPE – WAX TAPE COATING SYSTEM ON BOLTS & NUTS, ANODE PROTECTED FITTINGS AND VALVES
MODERATELY CORROSIVE	6,000 TO 10,000	NON-METALLIC PIPE - WAX TAPE COATING SYSTEM ON BOLTS AND NUTS ON PIPE, FITTINGS, AND VALVES
MILDLY CORROSIVE	MORE THAN 10,000	WAX TAPE COATING SYSTEM ON BOLTS AND NUTS ON PIPE, FITTINGS, AND VALVES

- 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

 PARK CITY MUNICIPAL CORPORATION WATER	DATE	METALLIC PIPE CORROSION PROTECTION	STD. PLAN
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	REV.		
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TERMINAL BOARD WIRING DIAGRAM



PARK CITY MUNICIPAL CORPORATION
WATER

DATE

12/2013

REV.

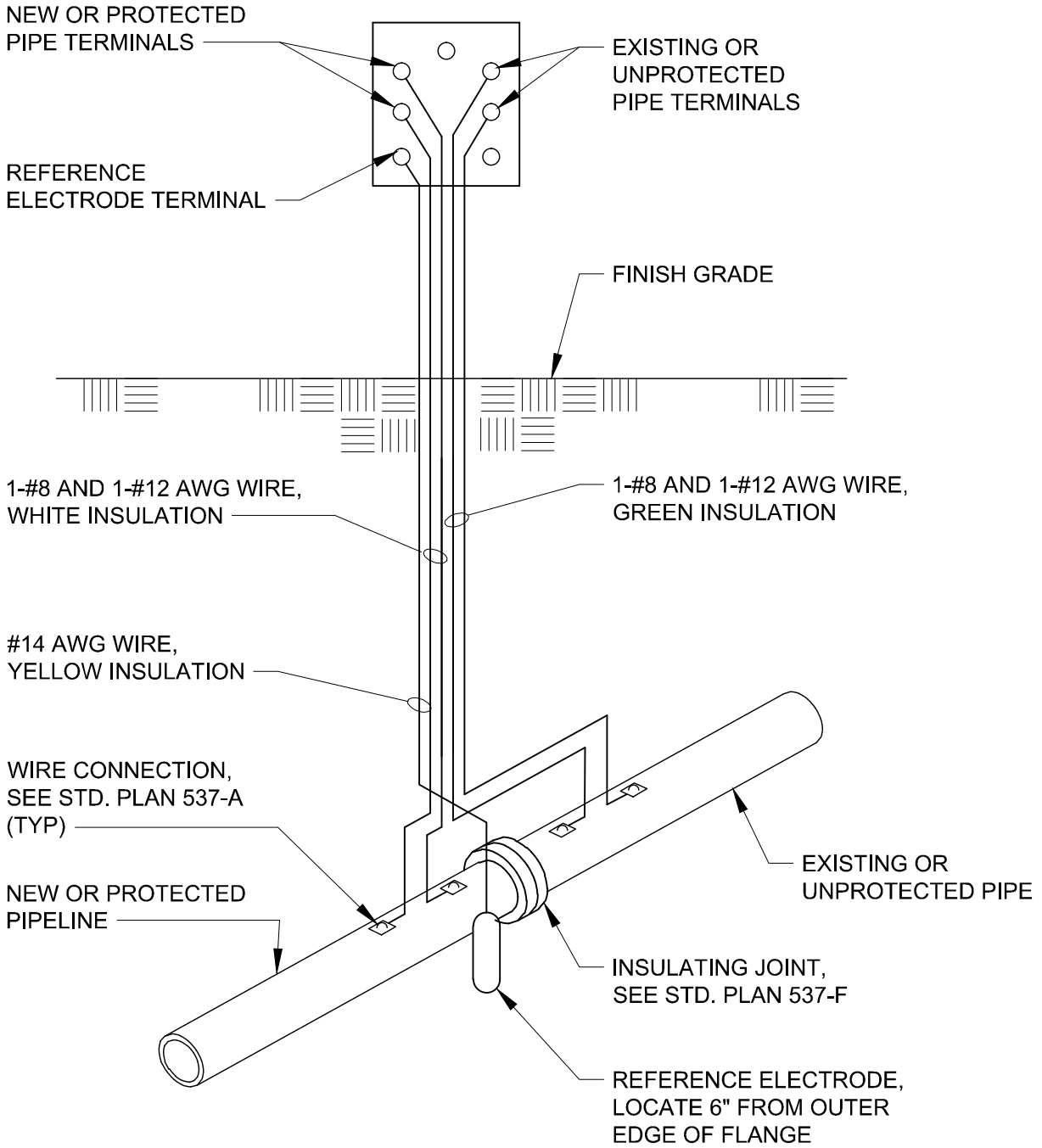
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TYPE A TEST STATION

STD. PLAN

535-A

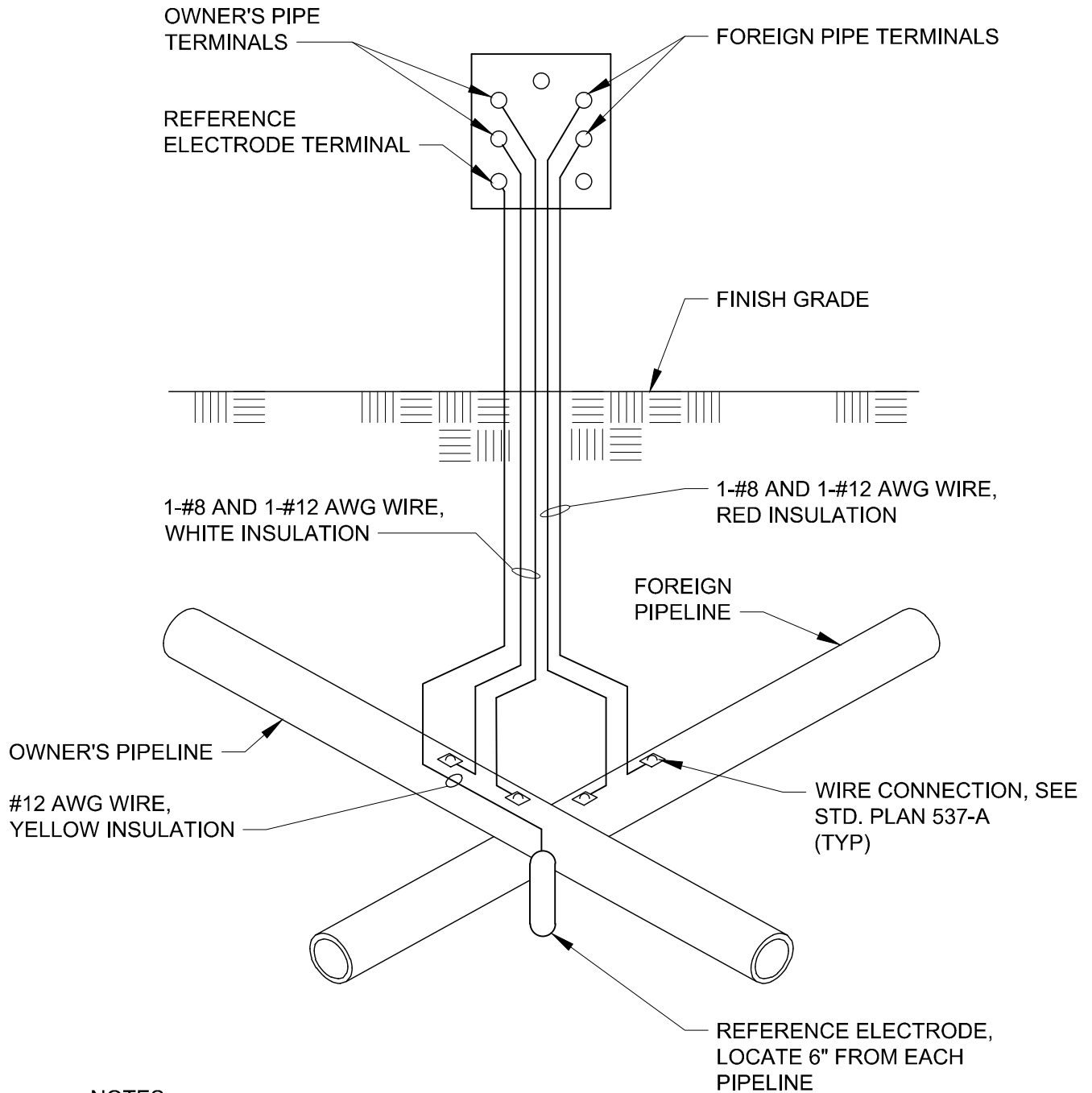
TERMINAL BOARD WIRING DIAGRAM



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

 PARK CITY MUNICIPAL CORPORATION WATER	DATE	TYPE I TEST STATION	STD. PLAN
	12/2013		535-B
	REV.		
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TERMINAL BOARD WIRING DIAGRAM

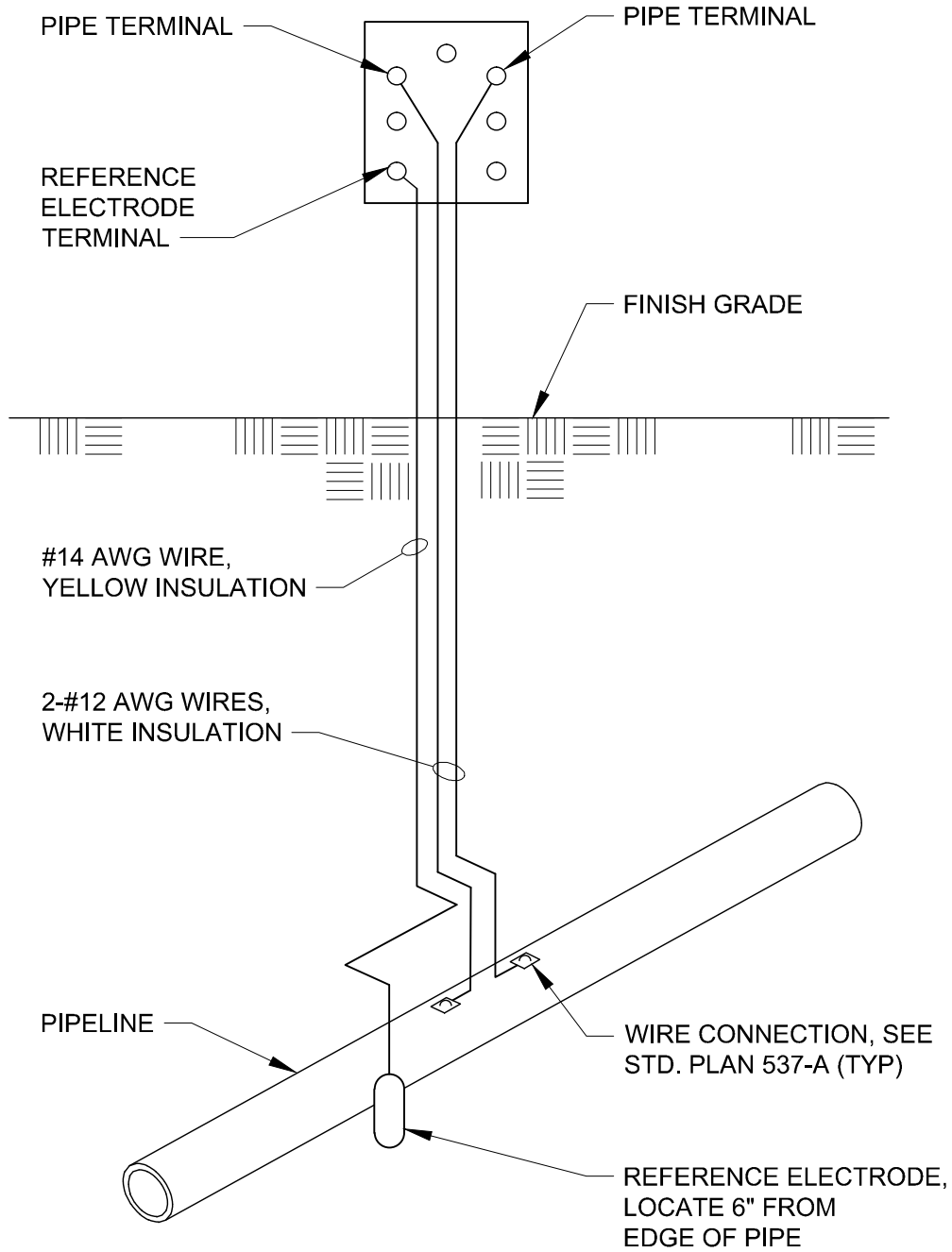


NOTES:

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.

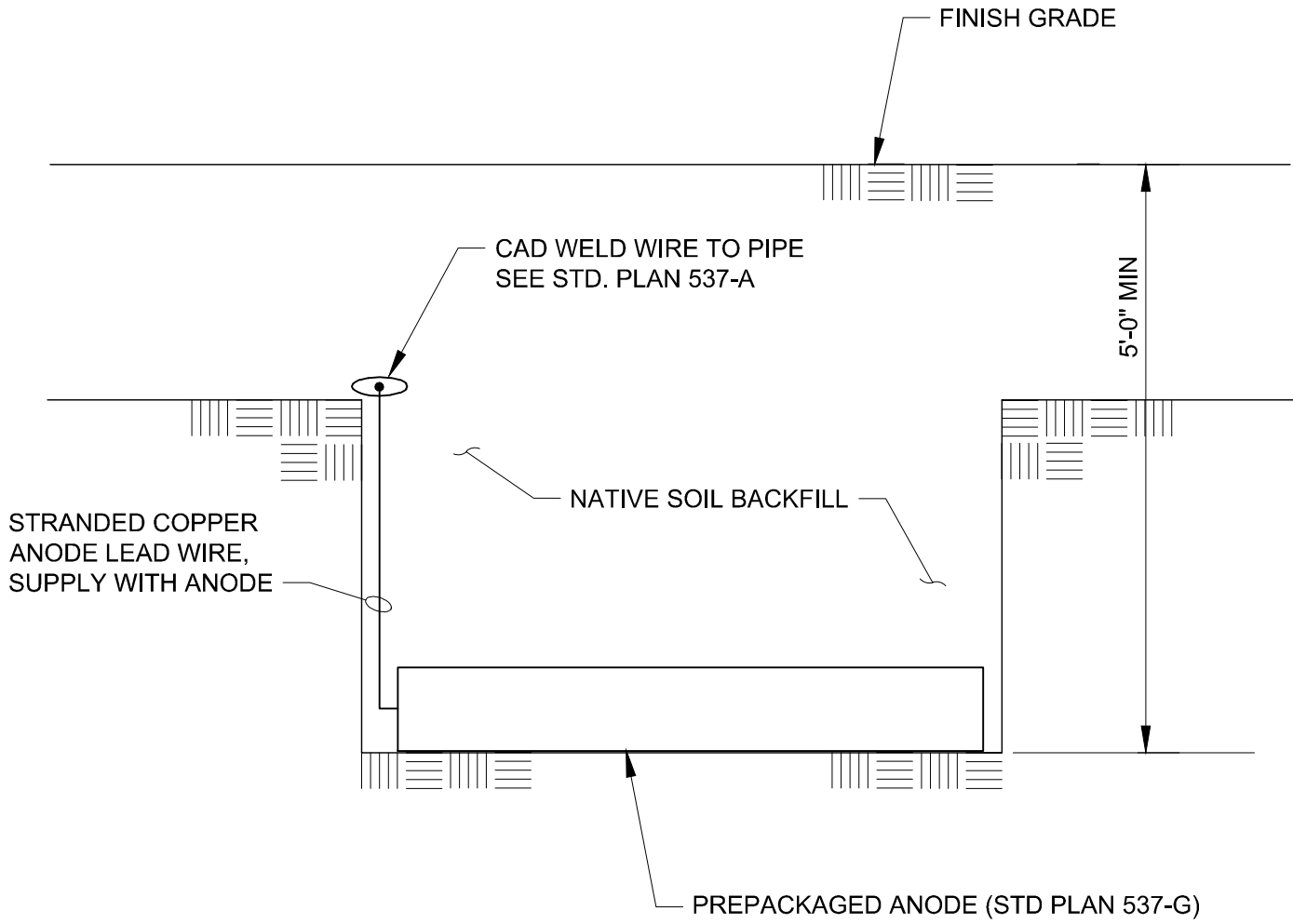
 PARK CITY MUNICIPAL CORPORATION WATER	DATE	TYPE F TEST STATION	STD. PLAN
	12/2013		535-C
	REV.		
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TERMINAL BOARD WIRING DIAGRAM



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

 PARK CITY MUNICIPAL CORPORATION WATER	DATE	TYPE T TEST STATION	STD. PLAN
	12/2013		535-D
	REV.		
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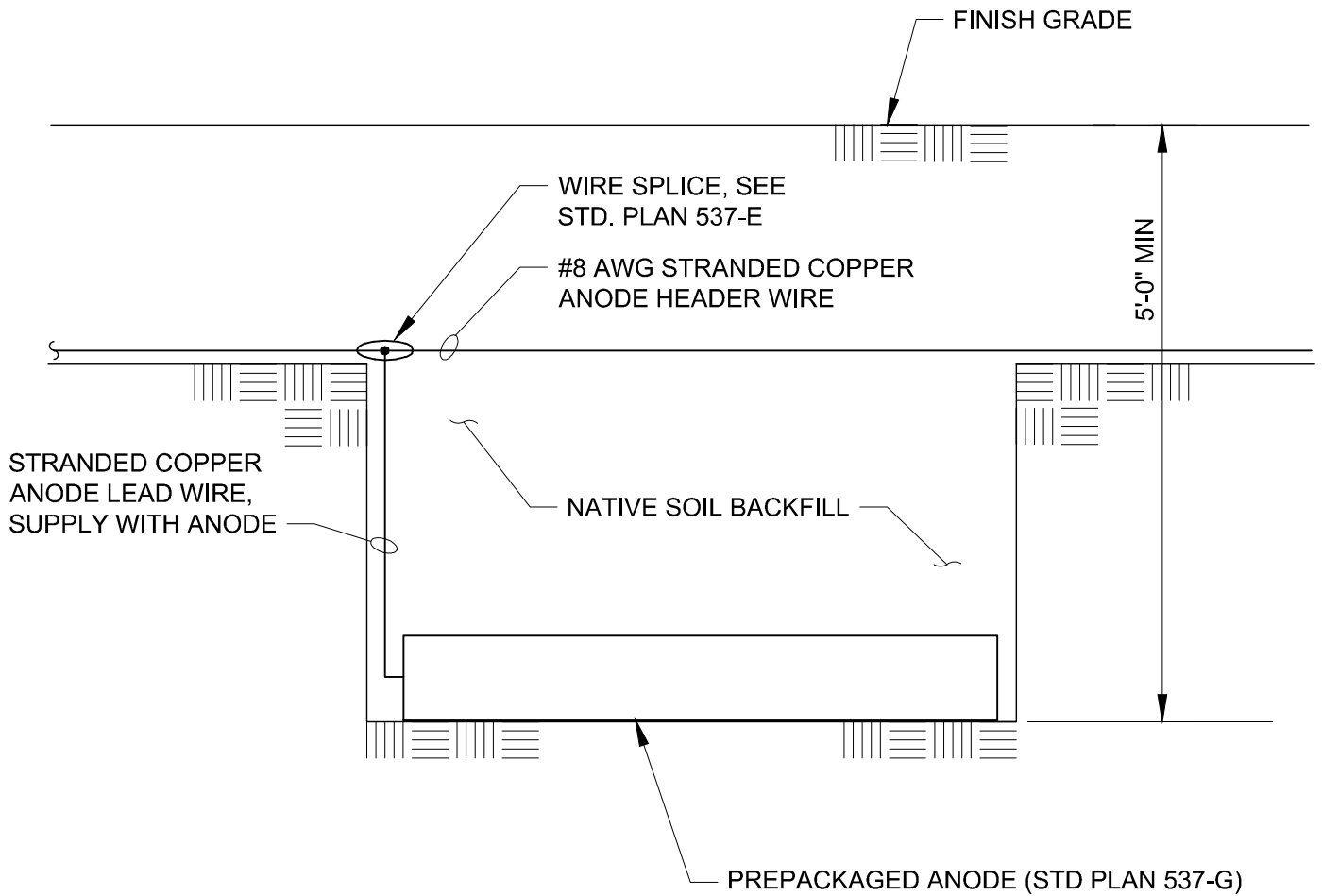
PARK CITY MUNICIPAL CORPORATION
WATER

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04/2014
REV.
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**HORIZONTAL GALVANIC
 ANODE INSTALLATION
 WITHOUT TEST STATION**

STD. PLAN

536-A



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DATE

03/2014

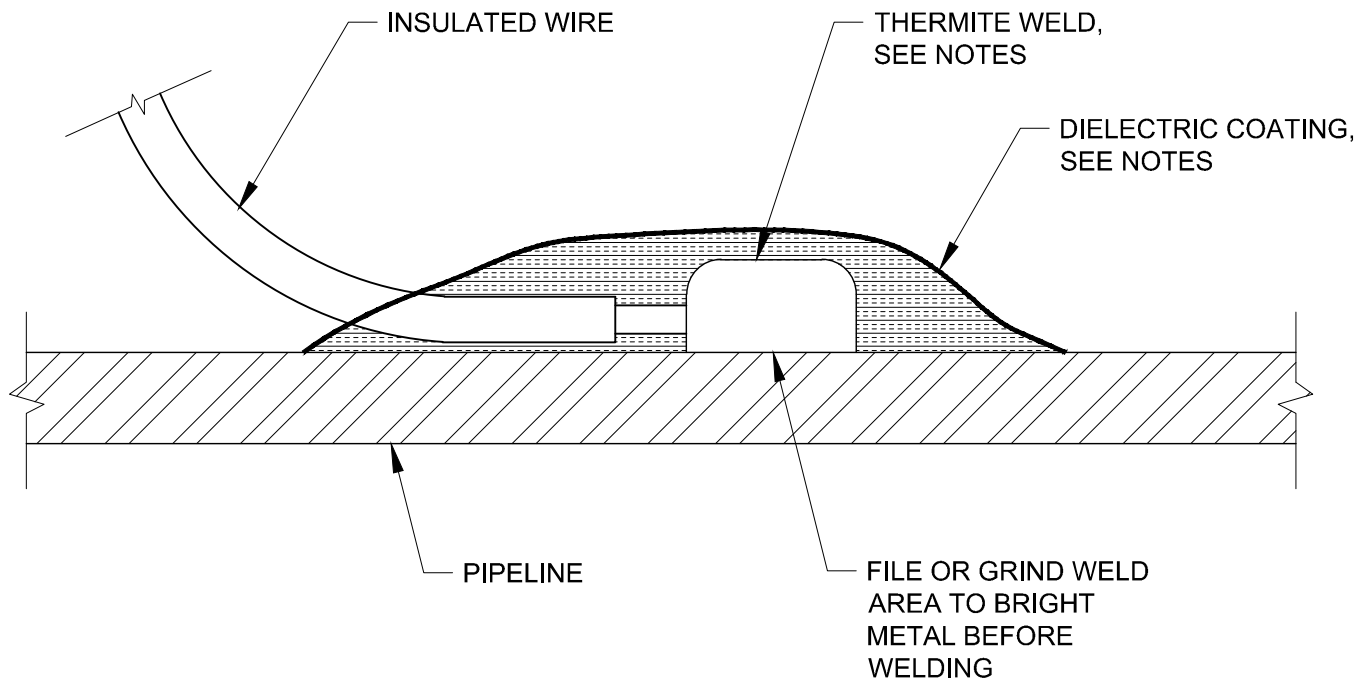
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HORIZONTAL GALVANIC ANODE INSTALLATION

STD. PLAN

536-B



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.



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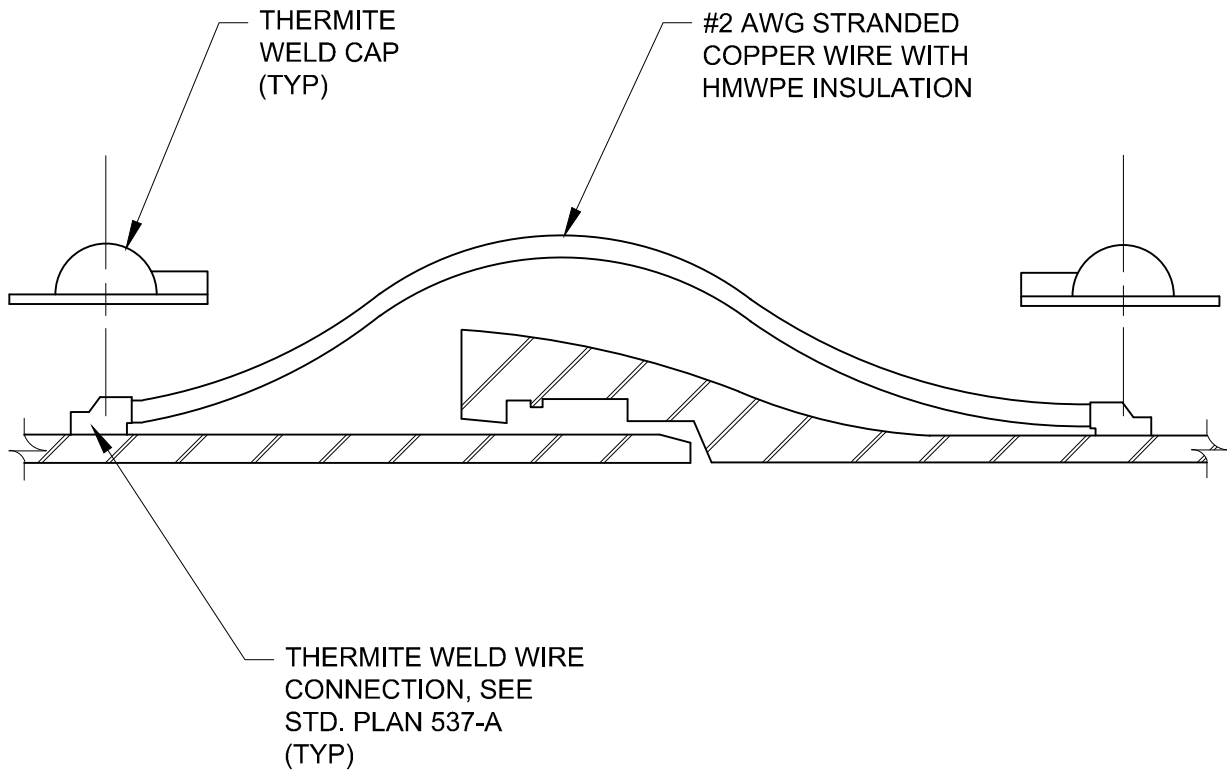
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**STEEL AND DUCTILE IRON PIPE
WIRE CONNECTION**

STD. PLAN

537-A



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.



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**DUCTILE IRON PIPE
JOINT BOND**

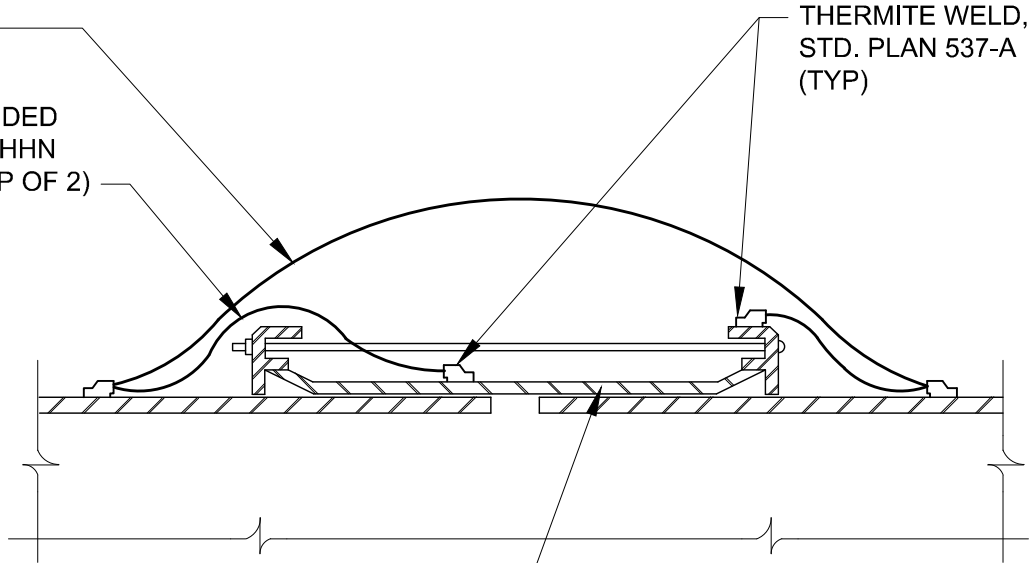
STD. PLAN

537-B

#2 AWG STRANDED
WIRE, HMWPE
INSULATION

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

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



FLEXIBLE,
EXPANSION, OR
DEPEND-O-LOCK
TYPE COUPLING



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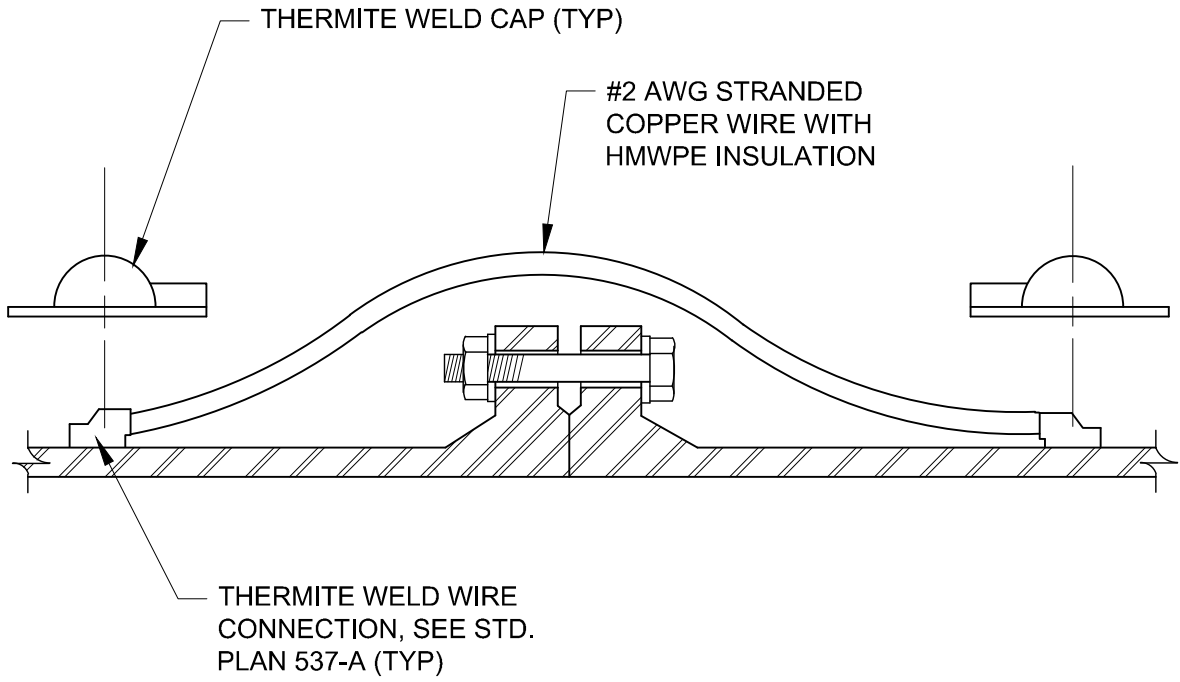
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FLEXIBLE JOINT BOND

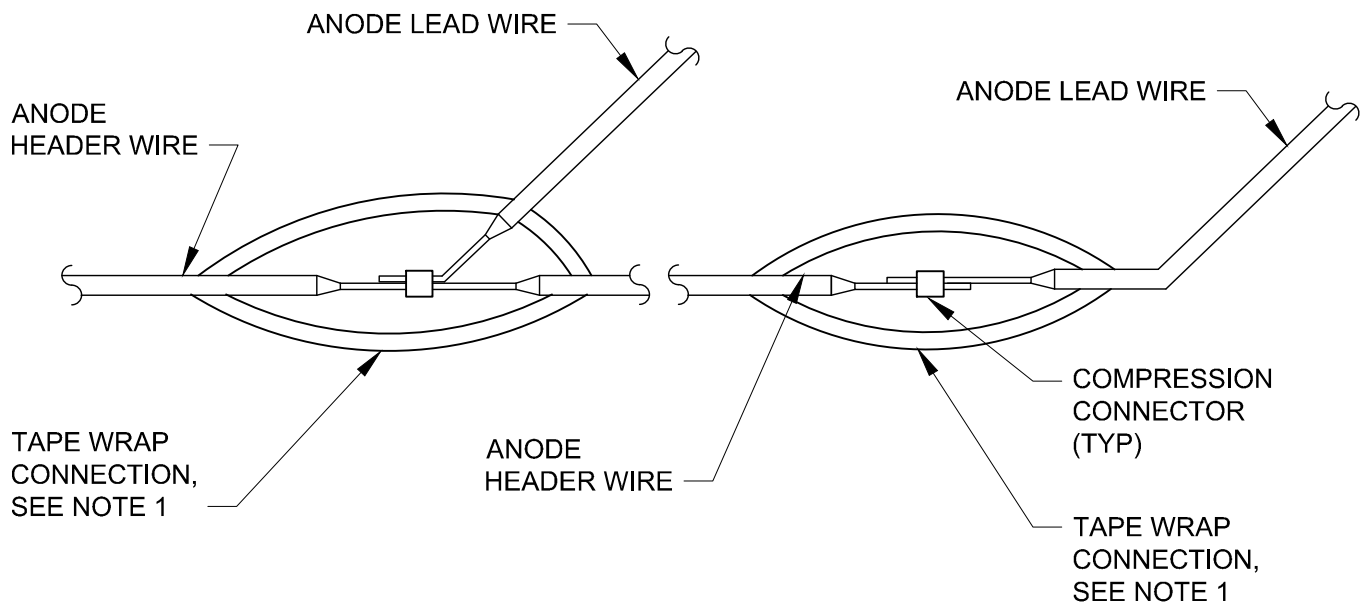
STD. PLAN

537-C



NOTE:
 INSTALL TWO BOND WIRES AT EACH PIPE JOINT.

 PARK CITY MUNICIPAL CORPORATION WATER	DATE	FLANGED AND MECHANICAL JOINT BOND	STD. PLAN
	12/2013		537-D
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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.



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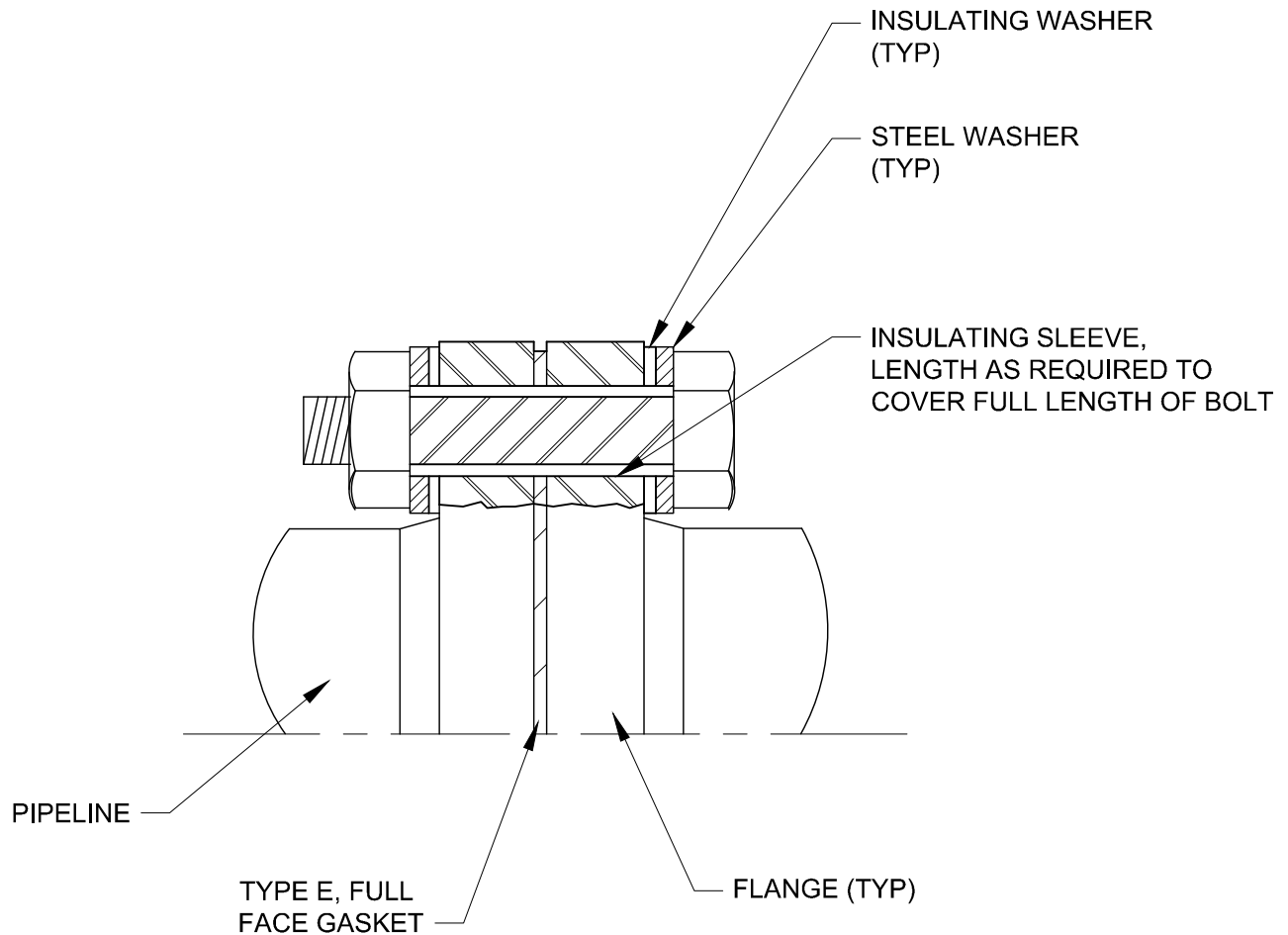
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**GALVANIC ANODE
WIRE SPLICE**

STD. PLAN

537-E



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 IMMERSSED 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.



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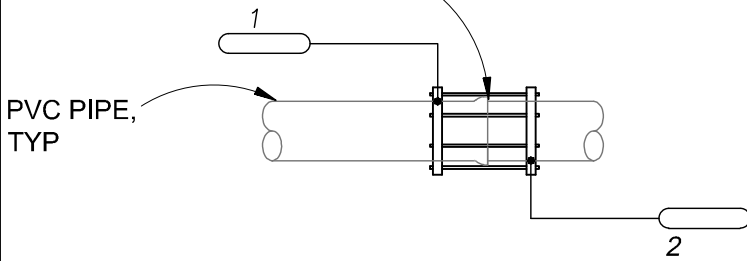
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INSULATING FLANGE

STD. PLAN

537-F

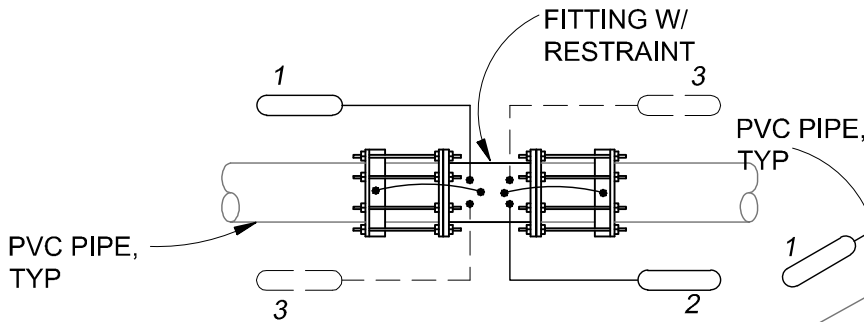
SINGLE UNRESTRAINED
FITTING OR JOINT
RESTRAINT ASSEMBLY



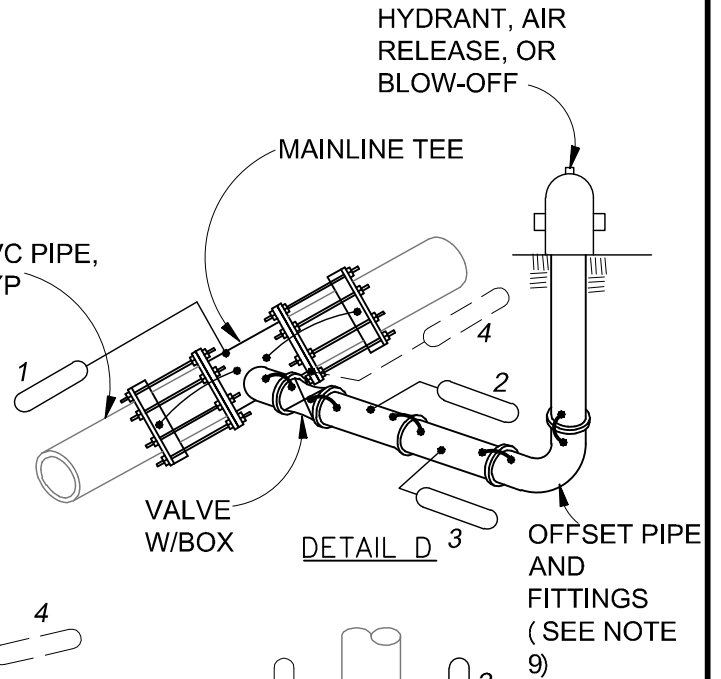
DETAIL A

LEGEND

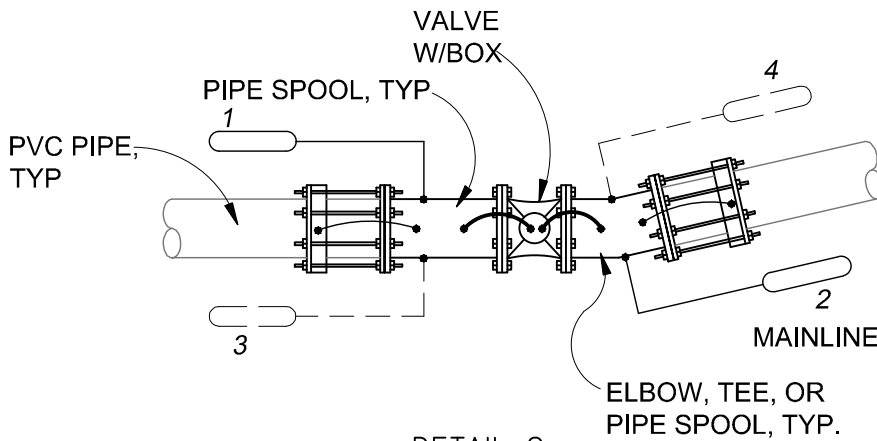
- THERMITE WELD
- ANODE-SEE NOTES 2 THROUGH 8
- ⌒ #2 AWG BOND WIRE
- ⌒ #8 AWG BOND WIRE



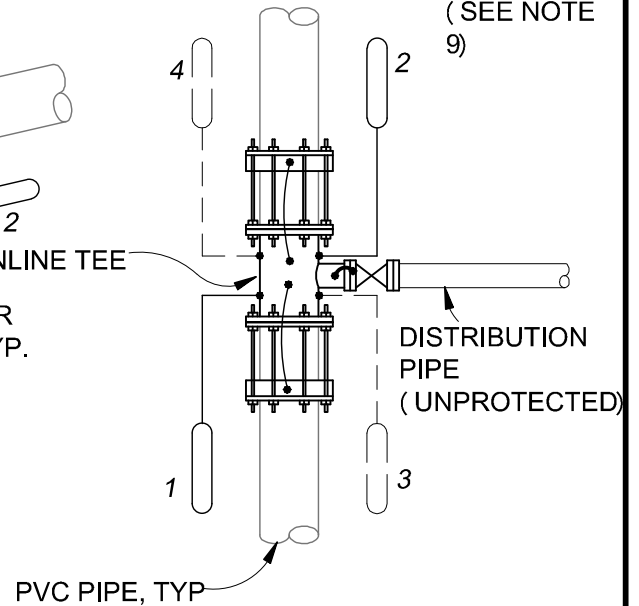
DETAIL B



DETAIL D



DETAIL C



DETAIL E



PARK CITY MUNICIPAL CORPORATION
WATER

DATE

4/2014

REV.

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**METALLIC PIPE
APPURTENANCE AND
FITTING CATHODIC
PROTECTION**

STD. PLAN

537-G.1

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.

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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 APPURTENANCES

1. WAX TAPE COATING SYSTEM

- a. METALLIC PIPING, FITTINGS, AND APPURTENANCES SHALL BE COATED IN ACCORDANCE WITH AWWA C217.
- b. APPLY COATING SYSTEM TO ALL BURIED METALLIC PIPE APPURTENANCES, INCLUDING JOINTS, FITTINGS, BOLTS, AND IRREGULARLY SHAPED SURFACES.
- c. FILLER MATERIAL:
 - (1) SHALL BE COMPRISED 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.



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**METALLIC PIPE
APPURTENANCE AND
FITTING CATHODIC
PROTECTION**

STD. PLAN

537-G.3

SCHEDULE OF ANODE QUANTITIES AND BARE WEIGHT

PIPE AND FITTINGS DESCRIPTIONS	MAX. COMBINED LENGTH	PIPELINE DIAMETER			REFERENCE DETAIL
		6"-10"	12"-18"	20"-24"	
ONE JOINT RESTRAINT	0'	1 @ 17#	1 @ 17#	1 @ 17#	A
ONE FITTING W/O RESTRAINT	0'	1 @ 17#	1 @ 17#	1 @ 17#	A
ONE FITTING W/ RESTRAINT	0'	1 @ 17#	1 @ 17#	1 @ 17#	B
ONE FLEXIBLE COUPLING	0'	1 @ 17#	1 @ 17#	1 @ 17#	A
3"-6" AIR RELEASE ASSEMBLY	20'	2 @ 17#	3 @ 17#	4 @ 17#	D
6" BLOW-OFF PIPE ASSEMBLY	20'	2 @ 17#	3 @ 17#	4 @ 17#	D
6" OR 8" FIRE HYDRANT	20'	2 @ 17#	3 @ 17#	4 @ 17#	D
BURIED MAINLINE VALVE	10'	1 @ 17#	1 @ 17#	2 @ 17#	C
MULTIPLE FITTINGS	10'	1 @ 17#	2 @ 17#	2 @ 17#	C
VALVED TURNOUT	0'	1 @ 17#	2 @ 17#	2 @ 17#	E
<u>EXTRA PIPE LENGTH:</u>					
1-17 LB ANODE FOR		30 FT	15 FT	10 FT	
<u>EXTRA FITTING LENGTH:</u>					
2-17 LB ANODES FOR		20 FT	12 FT	8 FT	



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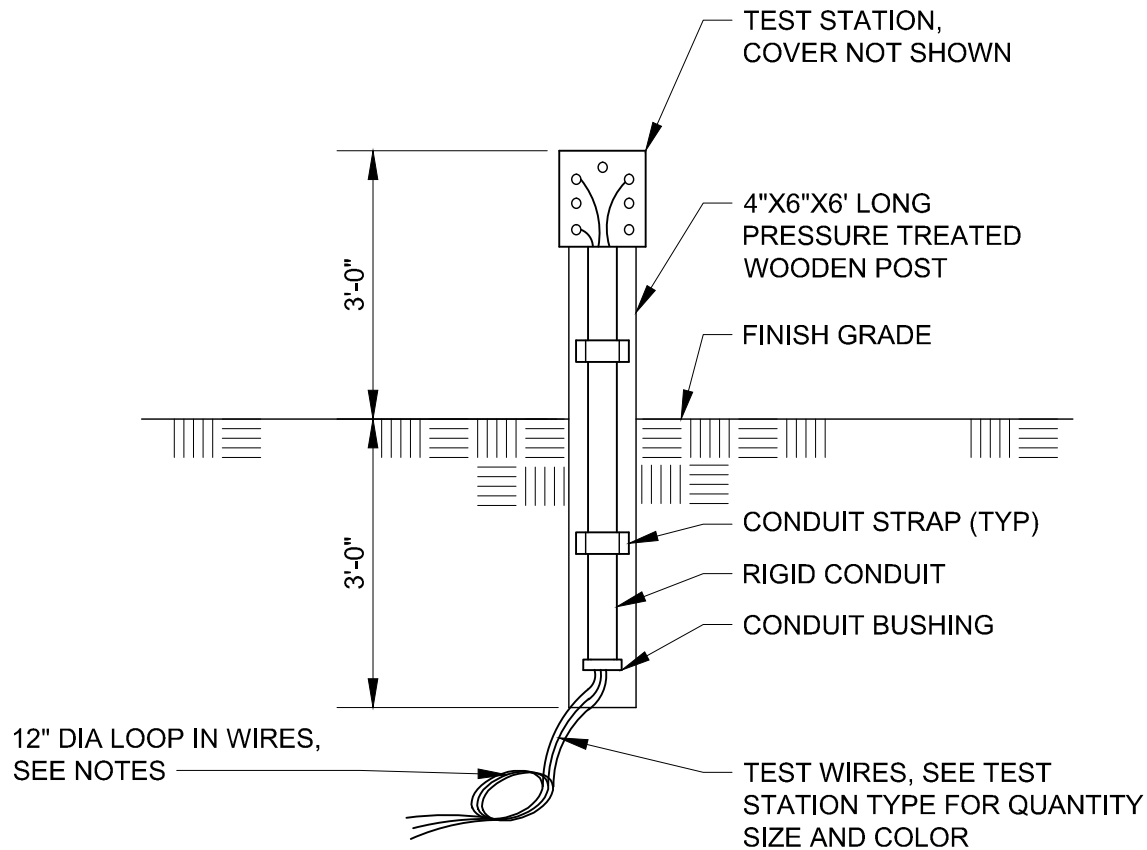
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METALLIC PIPE APPURTENANCE AND FITTING CATHODIC PROTECTION

STD. PLAN

537-G.4



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.



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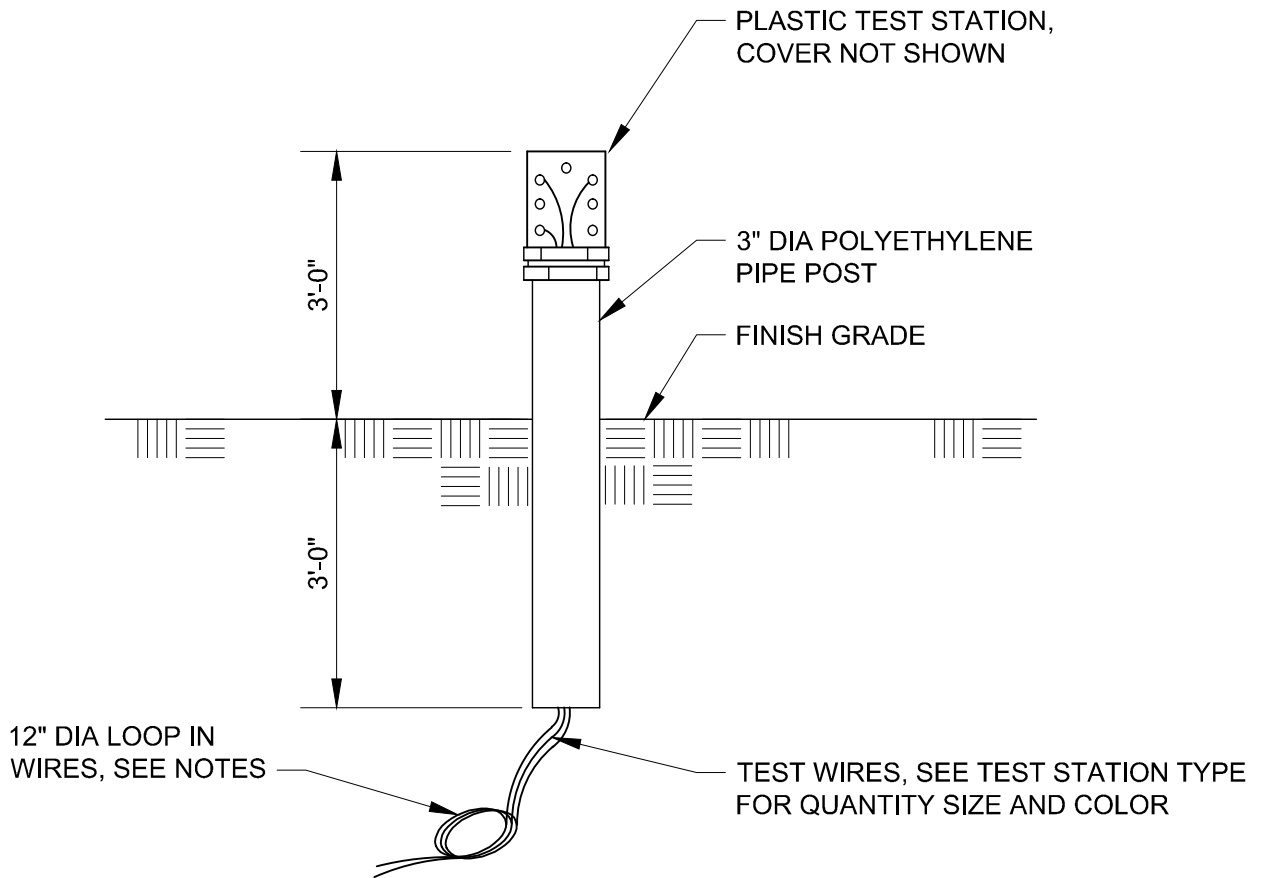
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**POST STYLE TEST STATION
WOOD**

STD. PLAN

538-A



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



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**POST STYLE TEST STATION
 PLASTIC**

STD. PLAN

538-B

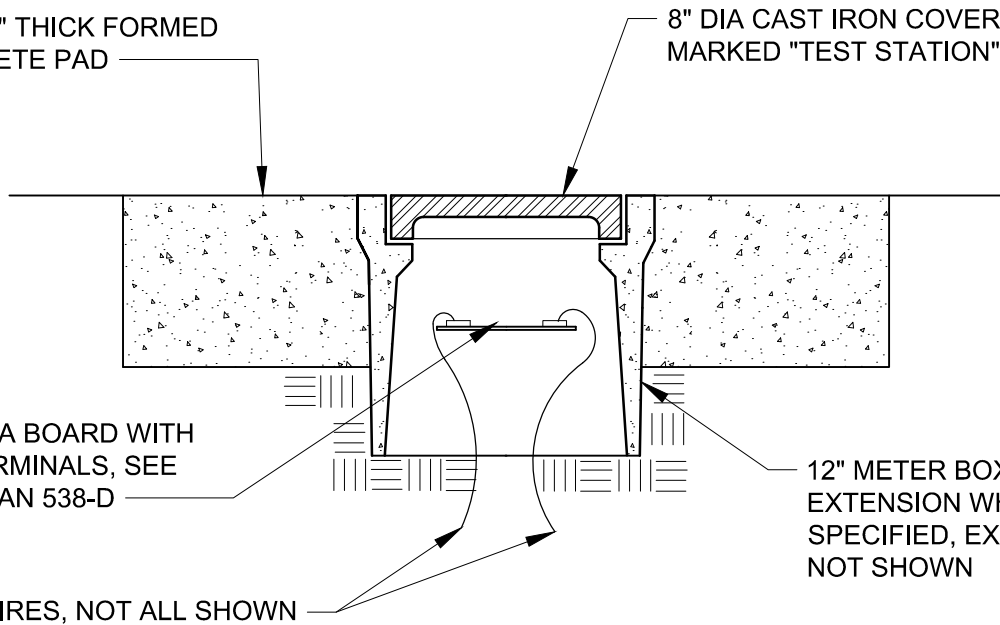
2'-6" X 6" THICK FORMED
CONCRETE PAD

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.



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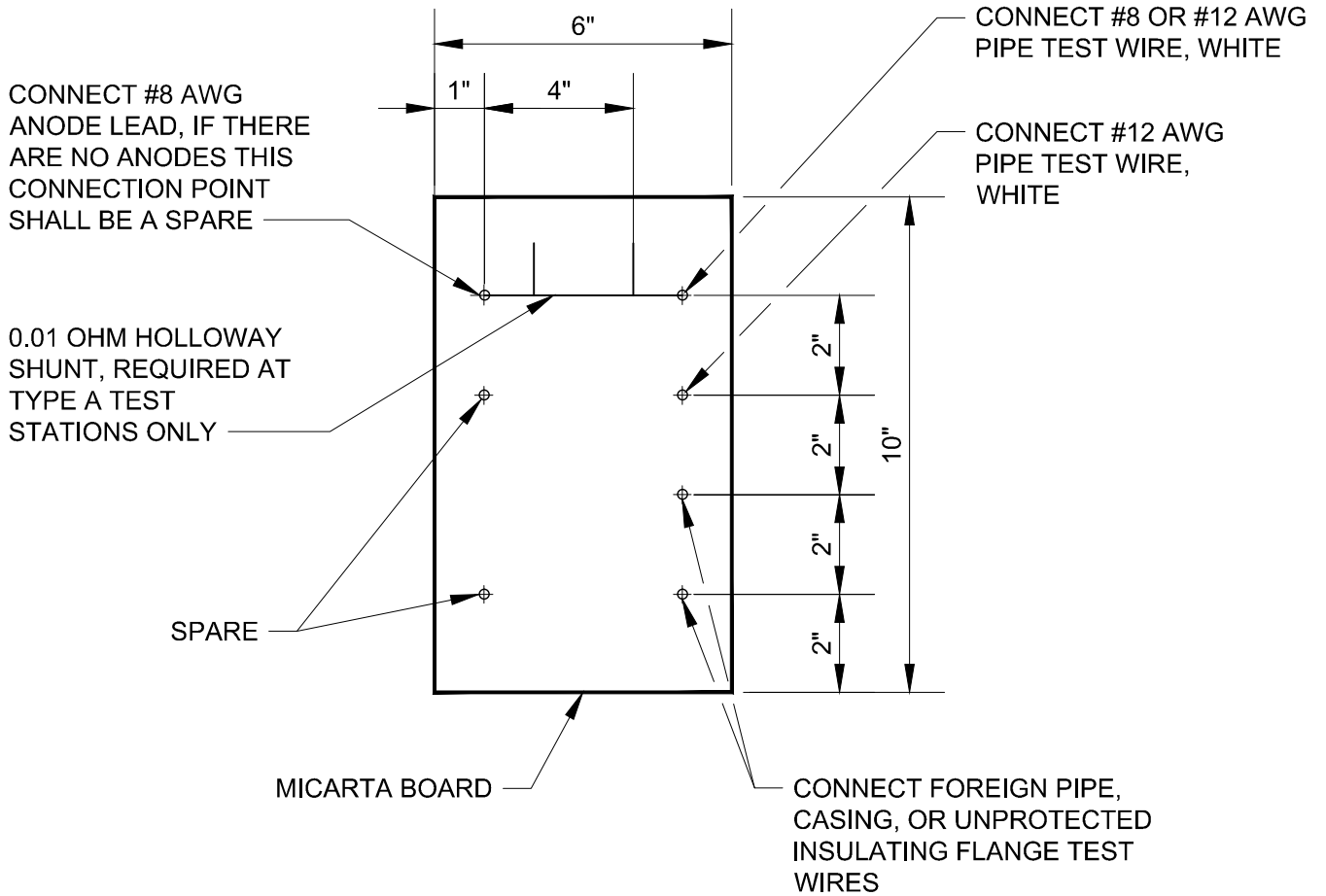
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**FLUSH STYLE
TEST STATION BOX**

STD. PLAN

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.



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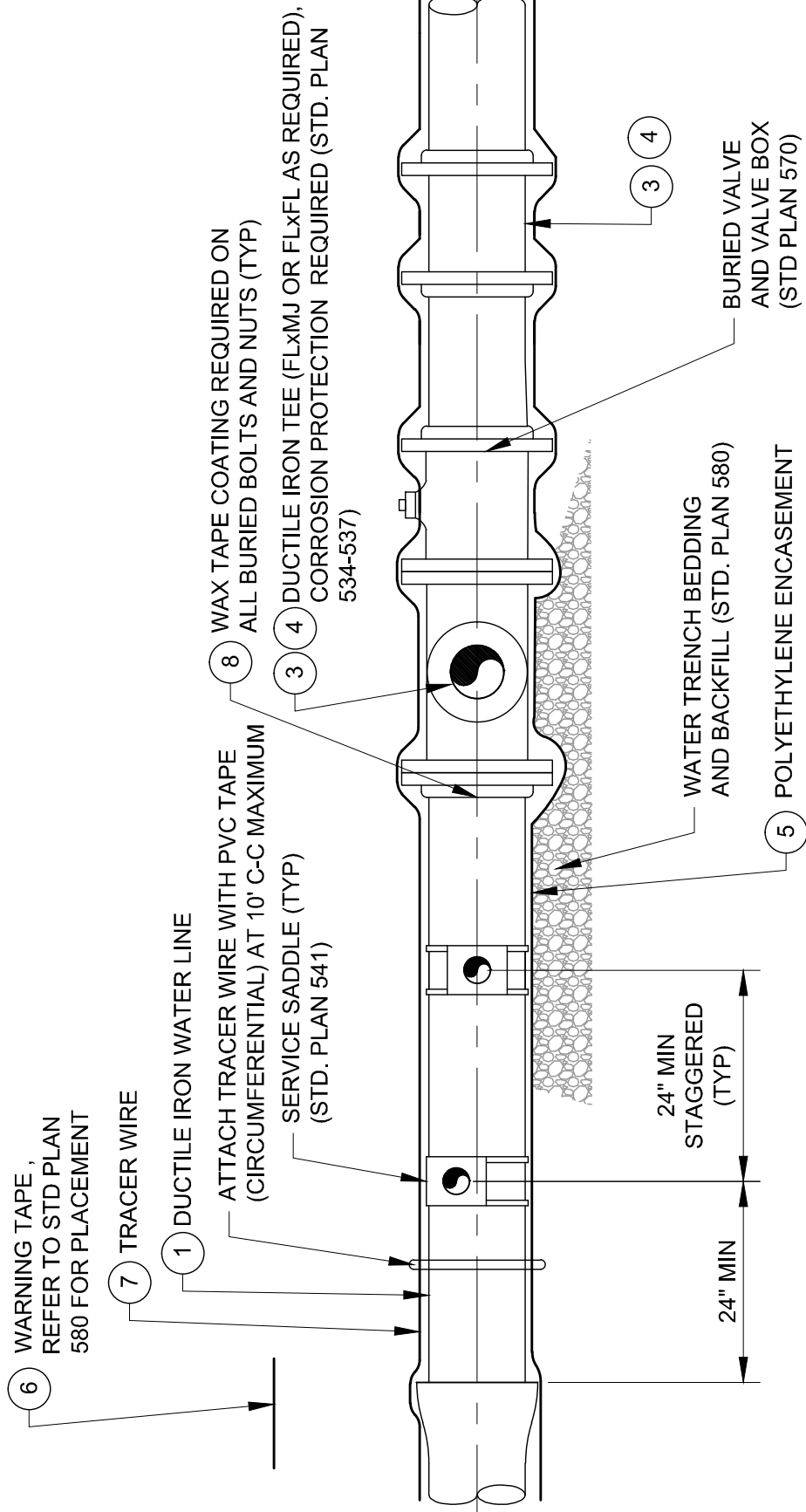
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**FLUSH STYLE TEST STATION
TERMINAL BOARD**

STD. PLAN

538-D



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



DATE	3/2014
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**WATER MAIN AND FIRE LINE
3" TO 12" DIAMETER**

STD. PLAN	540-A
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6 WARNING TAPE, REFER TO STD PLAN 580 FOR PLACEMENT

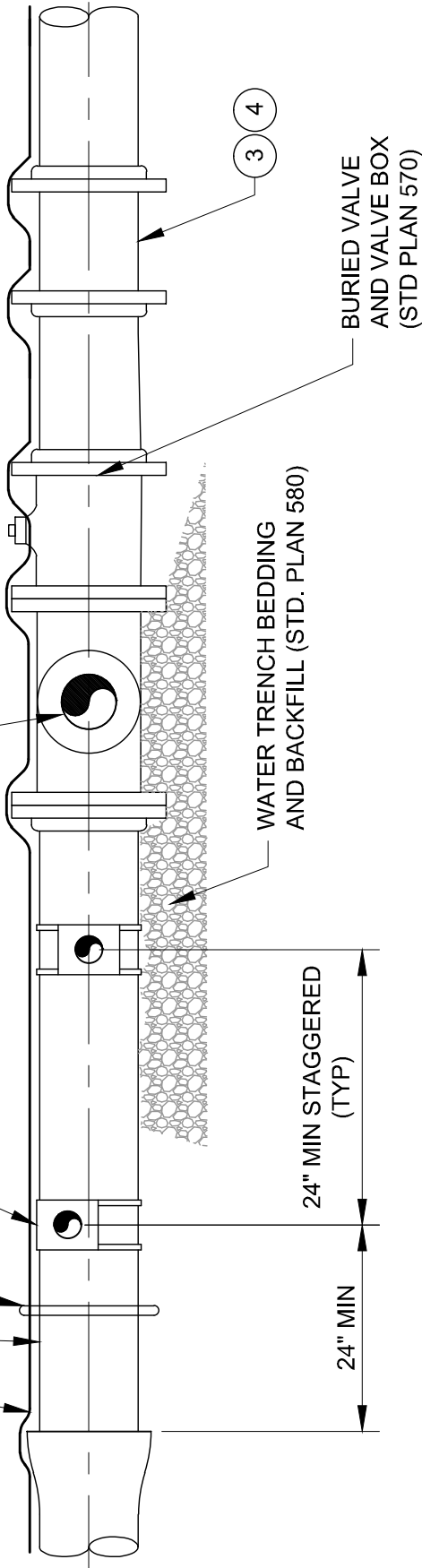
TRACER WIRE (STD PLAN 580)

2 C900 PVC WATER LINE, DR18

ATTACH TRACER WIRE WITH PVC TAPE (CIRCUMFERENTIAL) AT 10' C-C MAXIMUM

SERVICE SADDLE (TYP) (STD. PLAN 541)

3 4 DUCTILE IRON TEE (FLxMJ OR FLxFL AS REQUIRED), CORROSION PROTECTION REQUIRED (STD. PLAN 534-537)



WATER TRENCH BEDDING AND BACKFILL (STD. PLAN 580)

BURIED VALVE AND VALVE BOX (STD PLAN 570)

24" MIN STAGGERED (TYP)

24" MIN

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



PARK CITY MUNICIPAL CORPORATION
WATER

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**WATER MAIN - PVC PIPE
8" TO 12" DIAMETER**

STD. PLAN

540-B

LEGEND AND APPROVED PARTS LIST

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

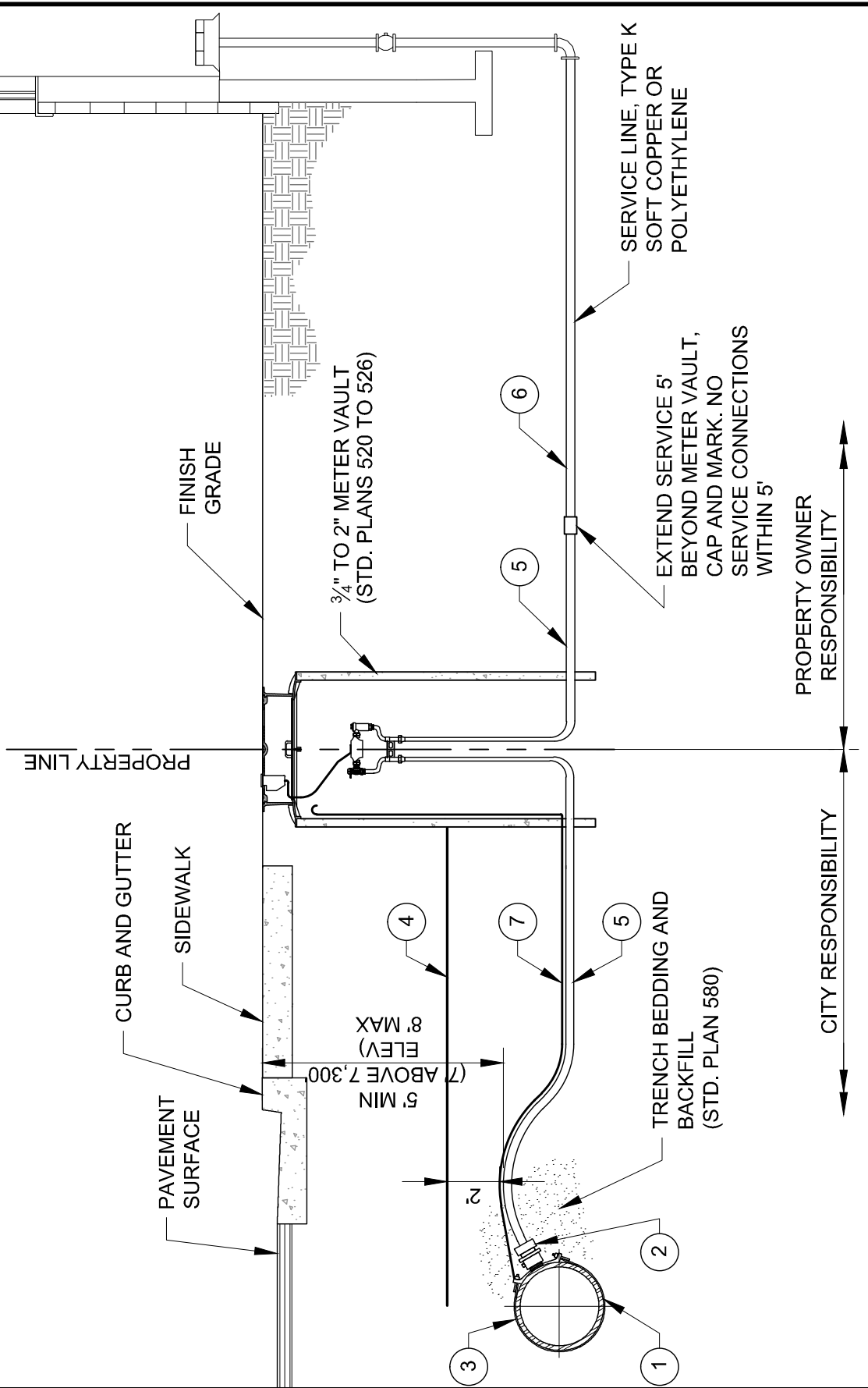
DETAIL NOTES

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

 PARK CITY MUNICIPAL CORPORATION WATER	DATE	WATER MAIN AND FIRE LINES	STD. PLAN
	4/2014		540 S
	REV.		
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NOTES:

1. REFERENCE STD. PLAN 520 FOR GENERAL REQUIREMENTS - METER, METER VAULT, AND SERVICE LINE.



PARK CITY MUNICIPAL CORPORATION
WATER

DATE

2/2014

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**WATER SERVICE LINE
3/4" TO 2" METERS**

STD. PLAN


541

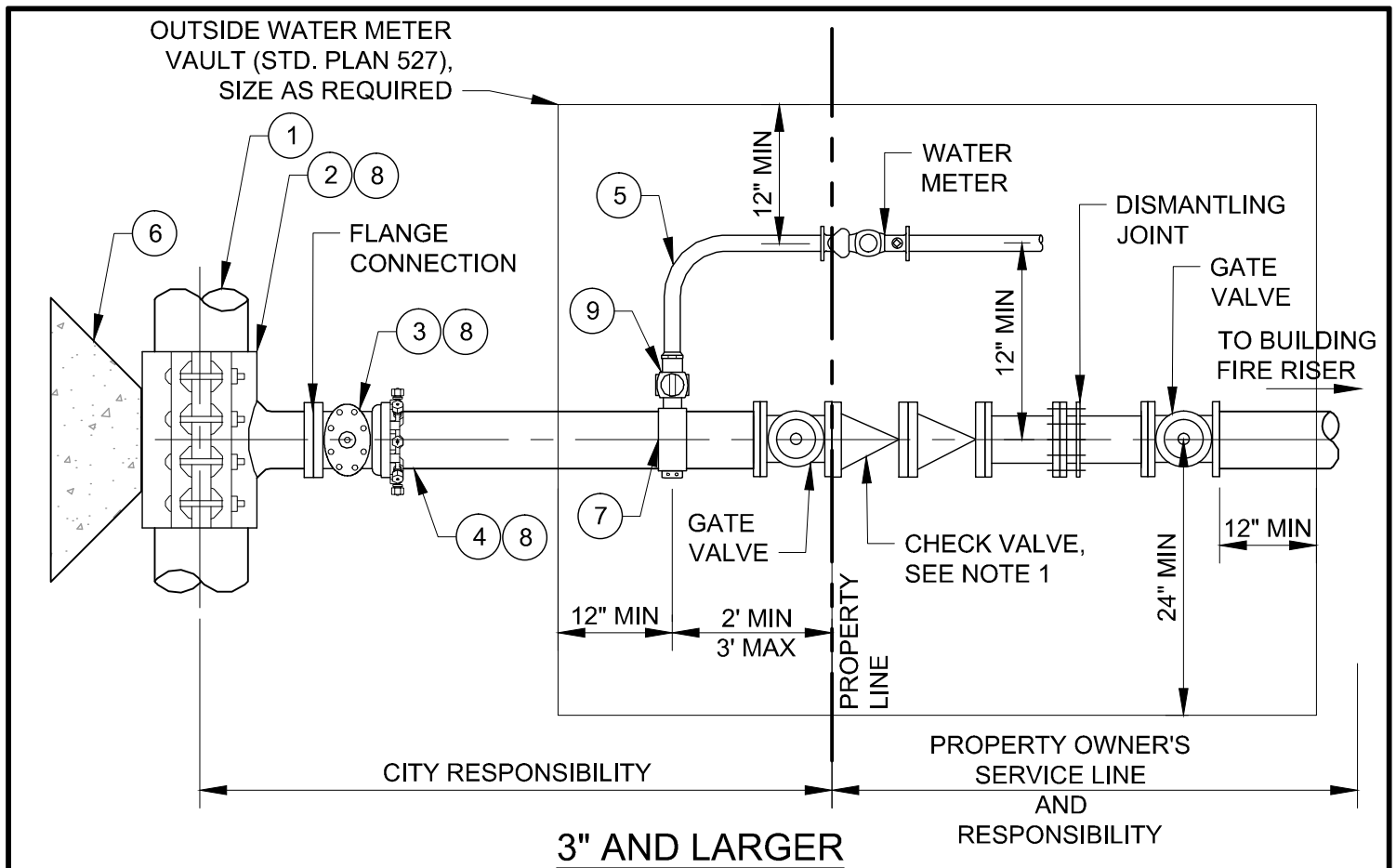
LEGEND AND APPROVED PARTS LIST

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

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)

 PARK CITY MUNICIPAL CORPORATION WATER	DATE	WATER SERVICE LINE 3/4" TO 2" METERS	STD. PLAN
	5/2014		541 S
	REV.		



3" AND LARGER

LEGEND

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

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.



PARK CITY MUNICIPAL CORPORATION
WATER

DATE

4/2014

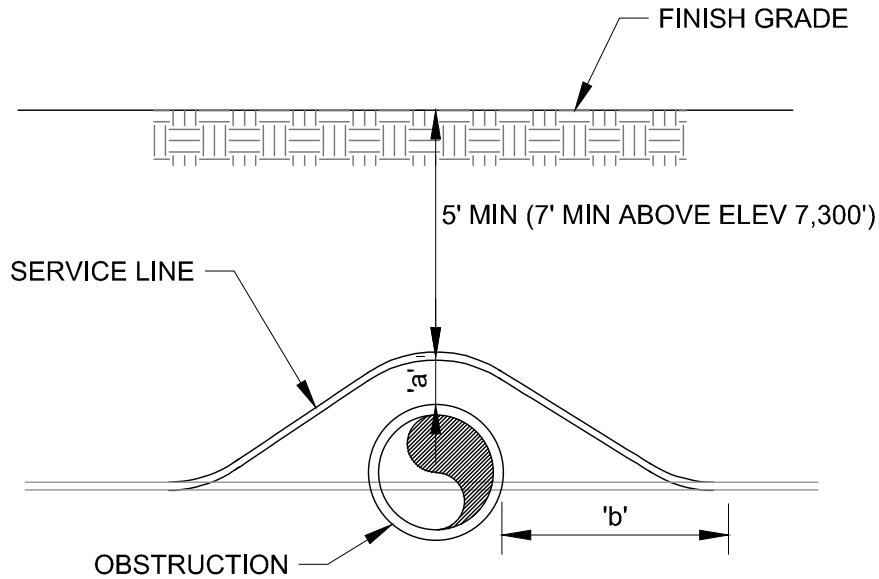
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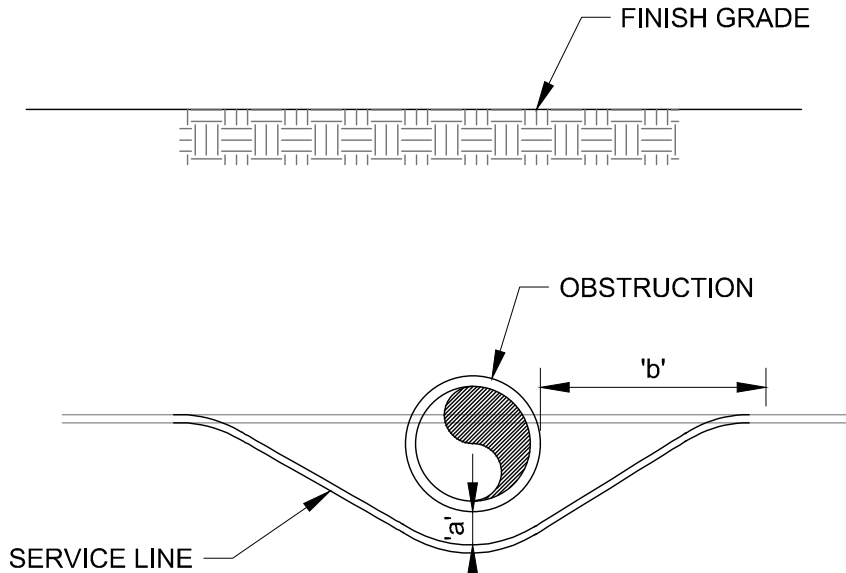
FIRE SERVICE LINE

STD. PLAN

542



METHOD A



METHOD B

TABLE OF DIMENSIONS

	OBSTRUCTION		
	SEWER MAIN	STORM DRAIN OR CULVERT	OTHER
'a'	18"	SEE STD. PLAN 546	12" MIN
'b'	5'-0"		3'-0" MIN

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.



PARK CITY MUNICIPAL CORPORATION
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WATER SERVICE LINE LOOP

STD. PLAN

543

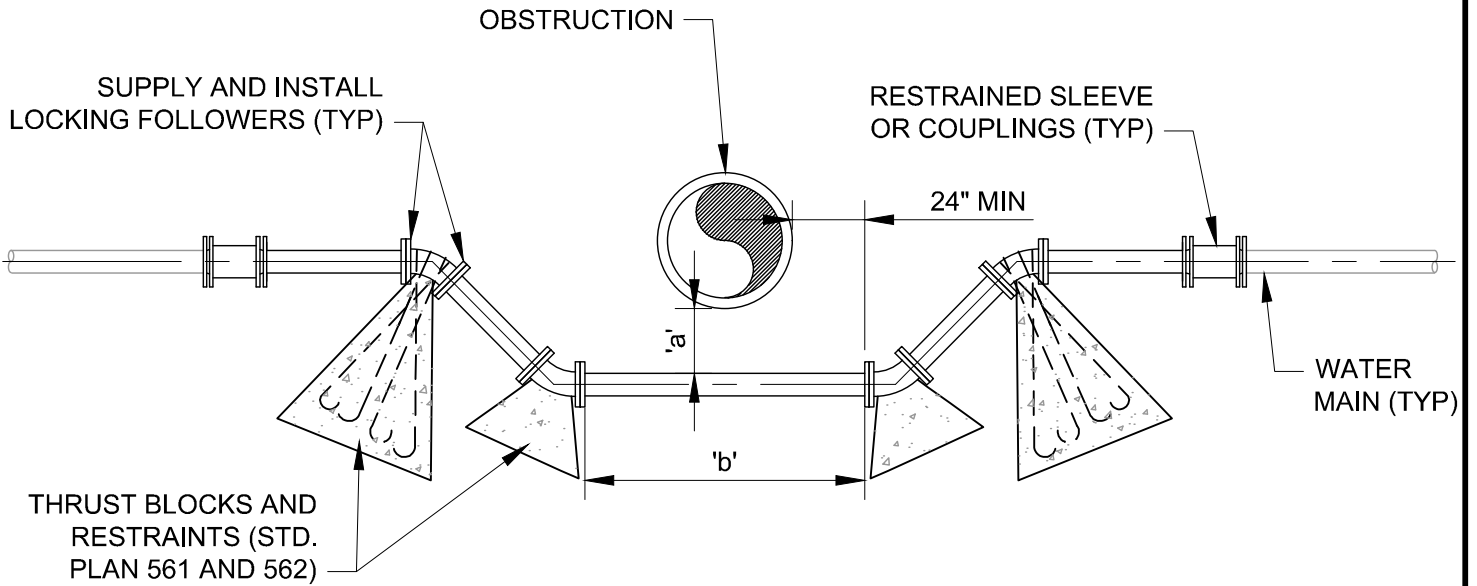


TABLE OF DIMENSIONS		
OBSTRUCTION	'a'	'b'
SEWER	18" MIN	20' MIN
STORM DRAIN OR CULVERT	SEE STD. PLAN 546	O.D. + 6'
OTHER	12" MIN	O.D. + 4'

NOTES:

METHOD A

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.

 PARK CITY MUNICIPAL CORPORATION WATER	DATE	WATER MAIN LOOP	STD. PLAN
	6/2019		544-A
	REV.		
	1		

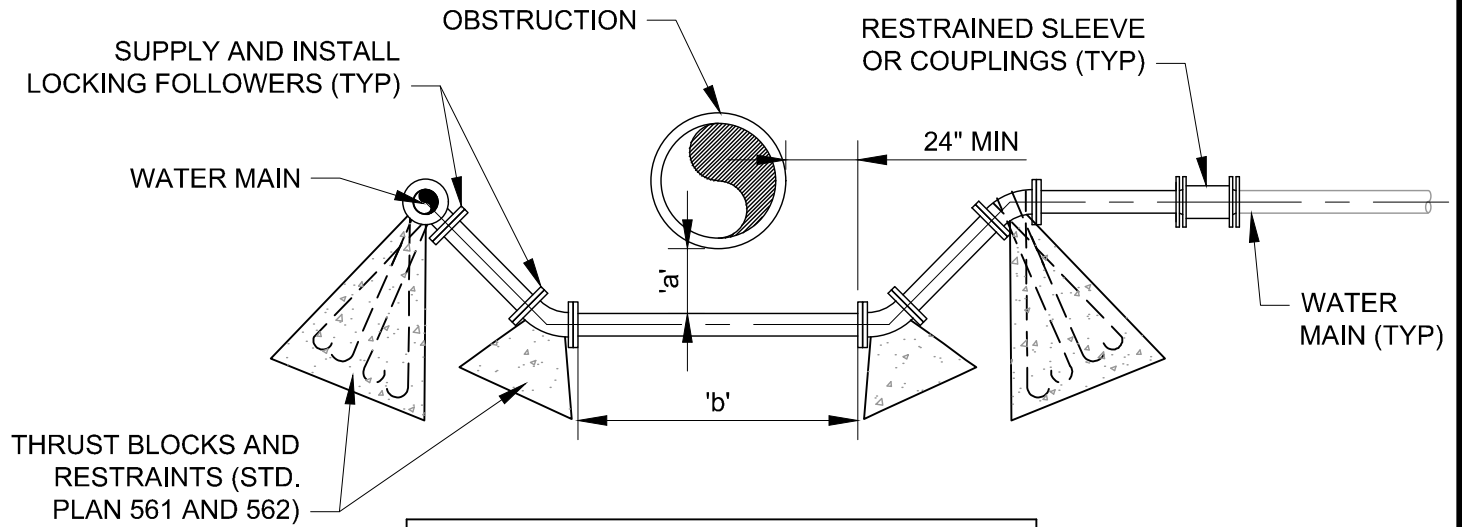


TABLE OF DIMENSIONS		
OBSTRUCTION	'a'	'b'
SEWER	18" MIN	20' MIN
STORM DRAIN OR CULVERT	SEE STD. PLAN 546	O.D. + 6'
OTHER	12" MIN	O.D. + 4'

METHOD B

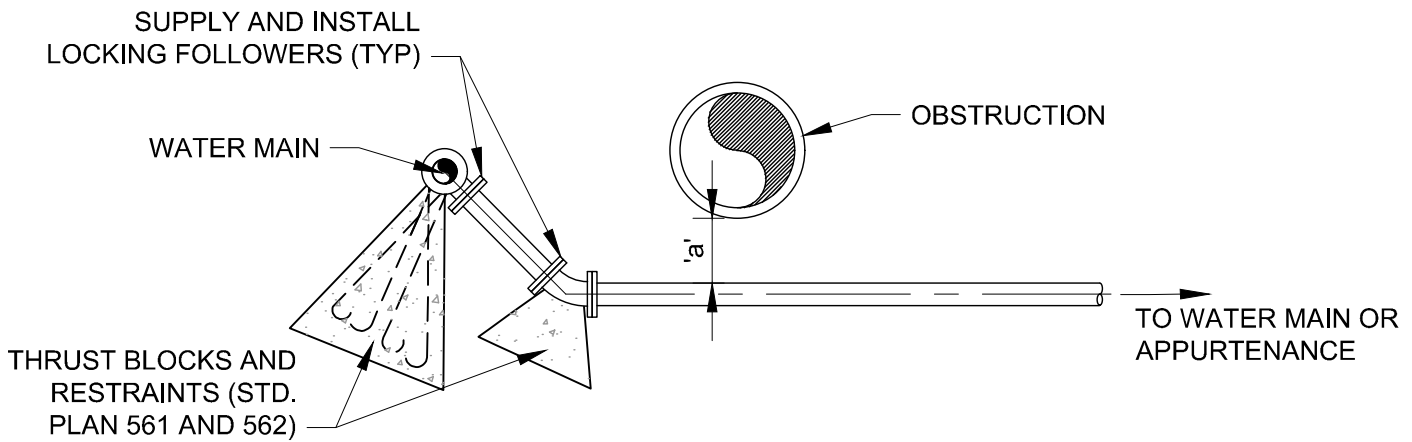


TABLE OF DIMENSIONS	
OBSTRUCTION	'a'
SEWER	18" MIN
STORM DRAIN OR CULVERT	SEE STD. PLAN 546
OTHER	12" MIN

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.

 PARK CITY MUNICIPAL CORPORATION WATER	DATE	WATER MAIN LOOP	STD. PLAN
	6/2019		544-B
	REV.		
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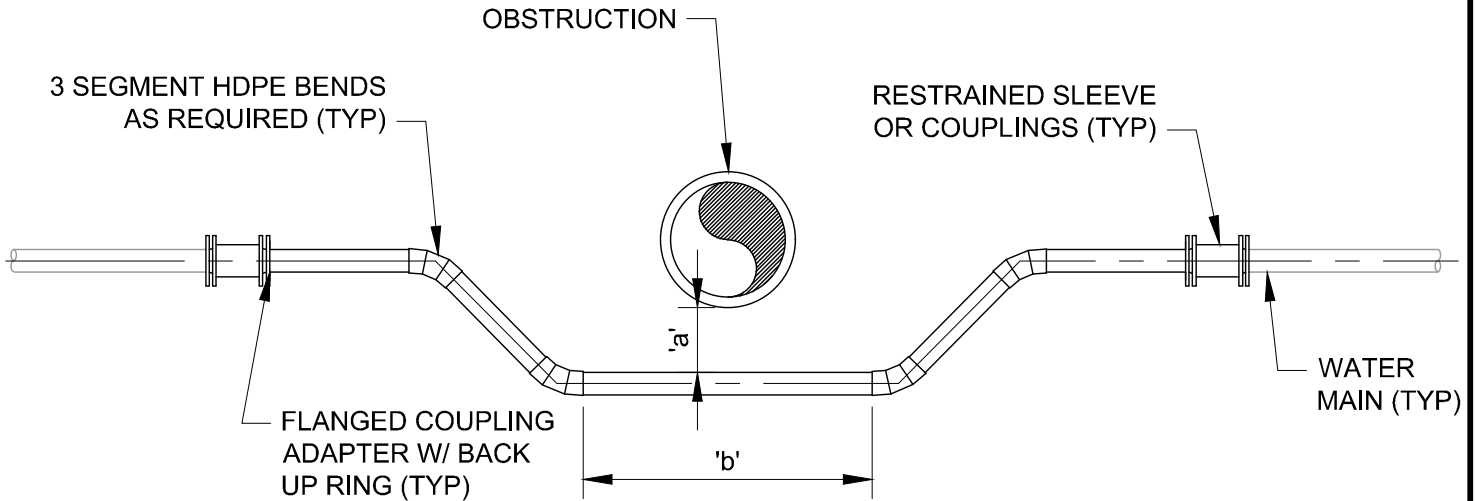


TABLE OF DIMENSIONS		
OBSTRUCTION	'a'	'b'
SEWER	18" MIN	20' MIN
STORM DRAIN OR CULVERT	SEE STD. PLAN 546	O.D. + 6'
OTHER	12" MIN	O.D. + 4'

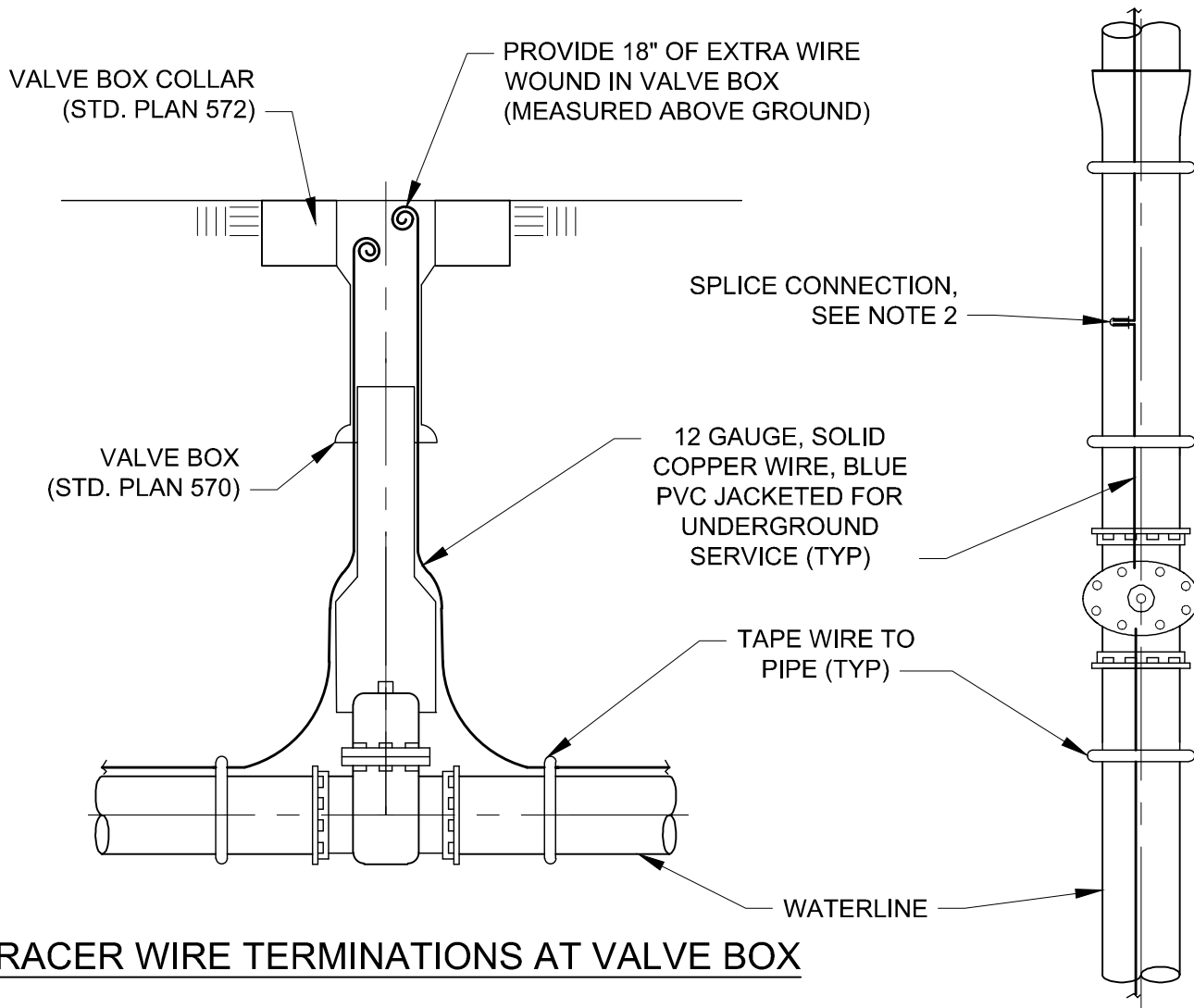
HDPE METHOD

NOTES:

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.

 PARK CITY MUNICIPAL CORPORATION WATER	DATE	<h2 style="margin: 0;">WATER MAIN LOOP</h2>	STD. PLAN
	6/2019		<h1 style="margin: 0;">544-C</h1>
	REV.		
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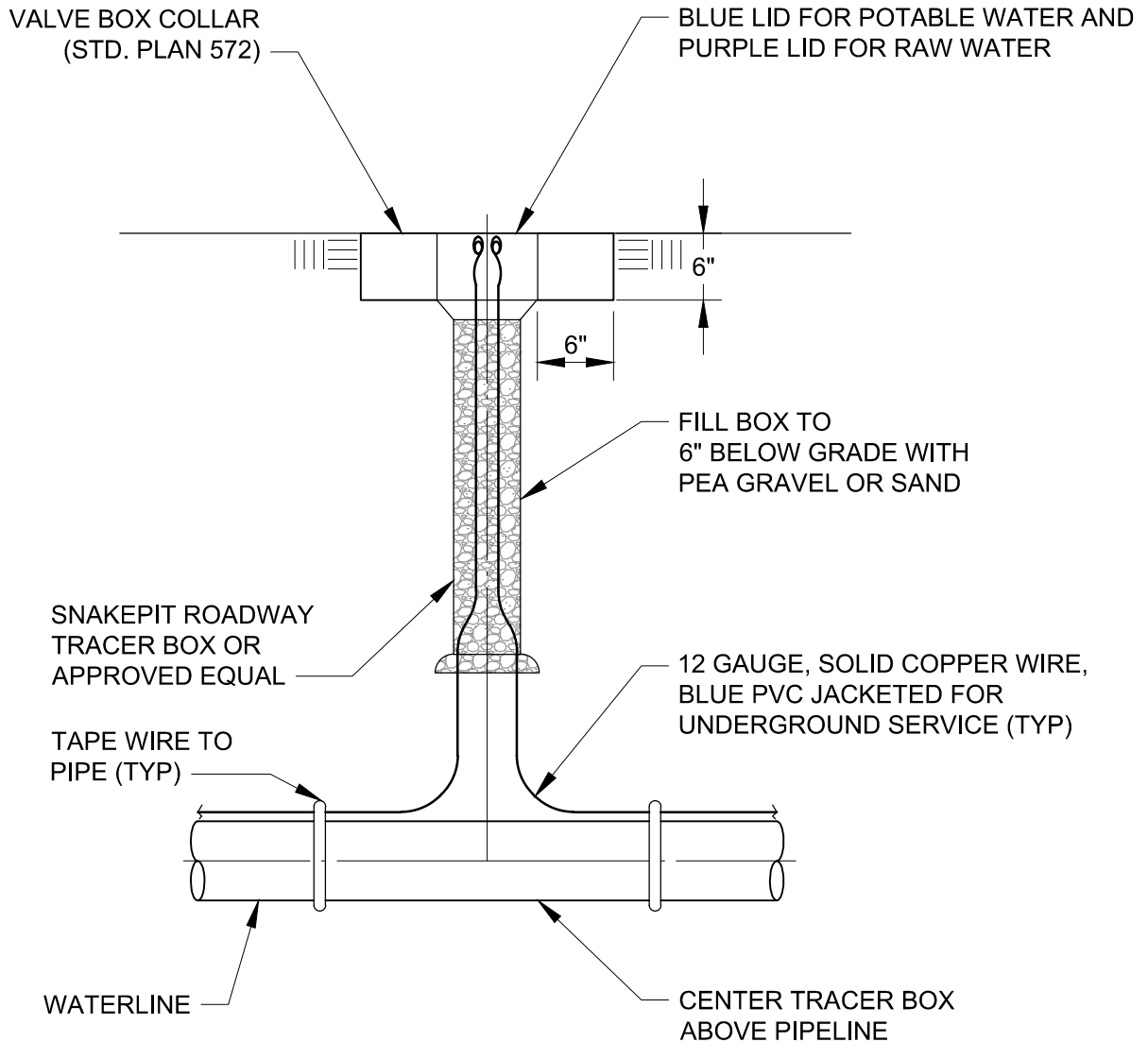


TRACER WIRE TERMINATIONS AT VALVE BOX

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.

 PARK CITY MUNICIPAL CORPORATION WATER	DATE	TRACER WIRE VALVE BOX TERMINATIONS	STD. PLAN
	3/2014		545-A
	REV.		
	0		



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.



PARK CITY MUNICIPAL CORPORATION
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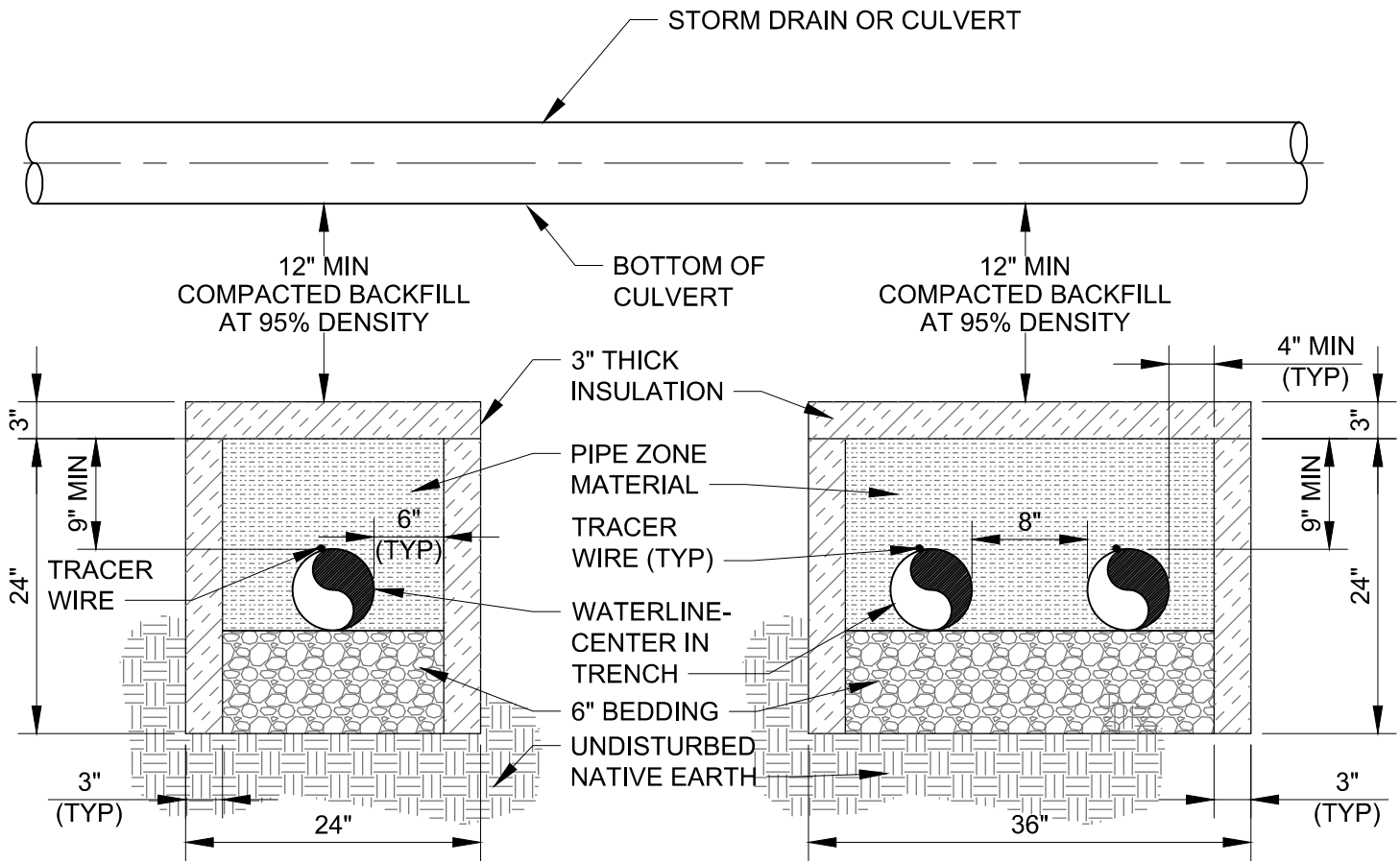
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**TRACER WIRE
ACCESS BOX TERMINATIONS**

STD. PLAN

545-B



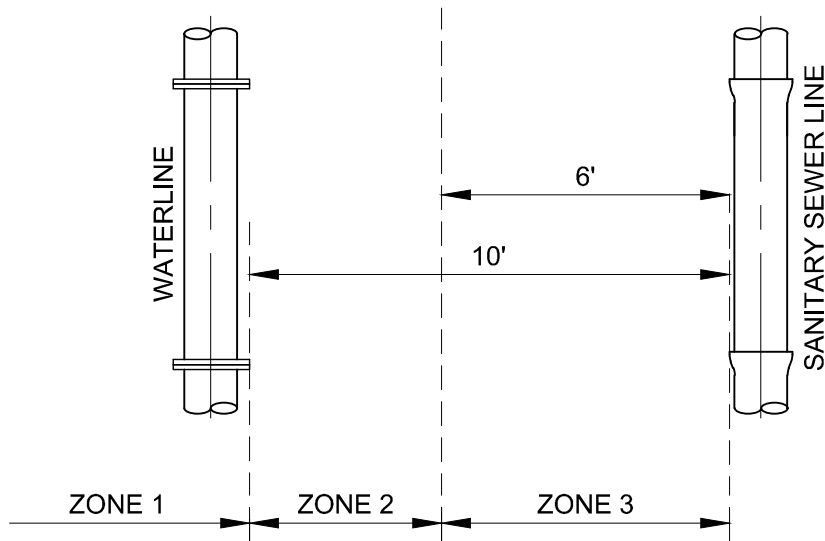
ONE LINE IN TRENCH

TWO LINES IN TRENCH

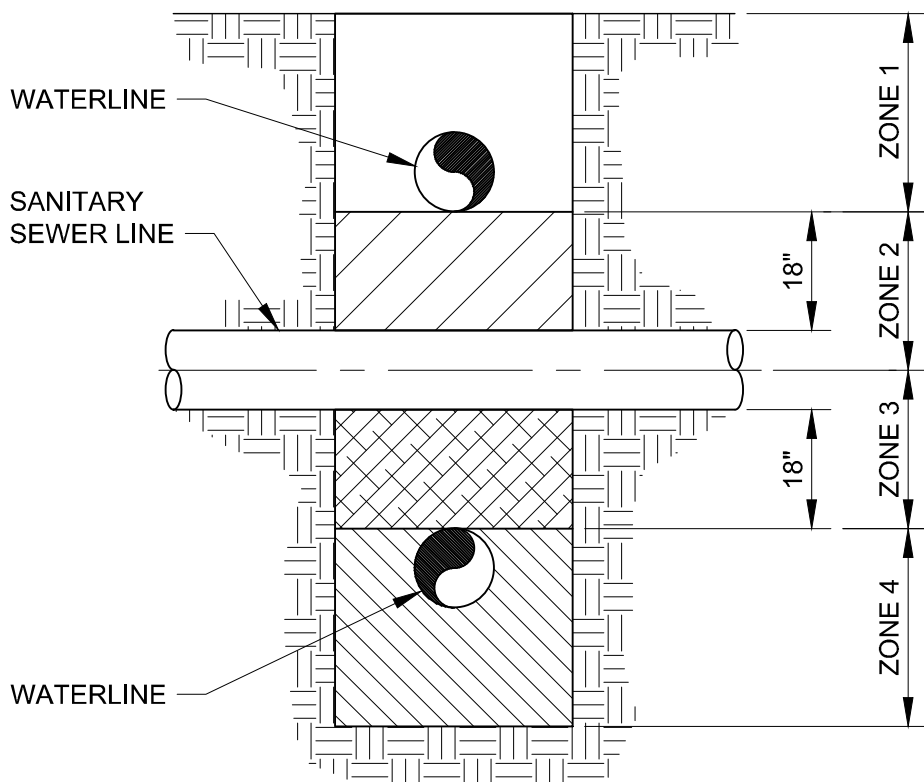
NOTES:

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)

 PARK CITY MUNICIPAL CORPORATION WATER	DATE	PIPE INSULATION AT STORM DRAIN CROSSINGS	STD. PLAN
	3/2014		546
	REV.		
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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.

 PARK CITY MUNICIPAL CORPORATION WATER	DATE	WATER - SANITARY SEWER SEPARATION	STD. PLAN
	6/2019		547-A
	REV.		
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HORIZONTAL SEPARATION

NOTES:

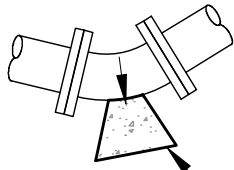
1. ZONE 1: WATER LINE AND SEWER LINE SEPARATED 10 FEET OR GREATER - NO SPECIAL REQUIREMENTS
ZONE 2: A) WATER LINE SEPARATED BY AT LEAST 6 FEET AT OUTSIDE PIPE WALLS AND
B) BOTTOM OF WATER LINE IS AT LEAST 18 INCHES ABOVE TOP OF SEWER LINE AND
C) WATER LINE CONSTRUCTED WITH MECHANICAL, RESTRAINED JOINT 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

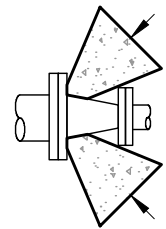
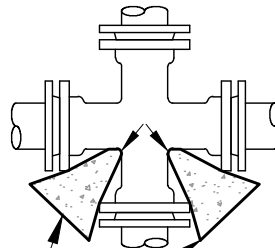
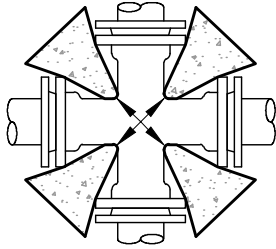
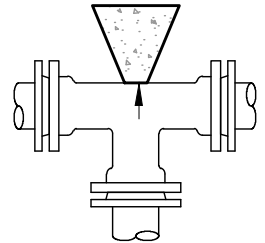
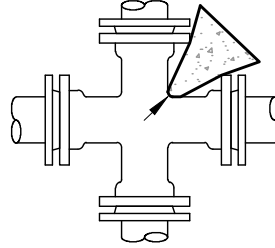
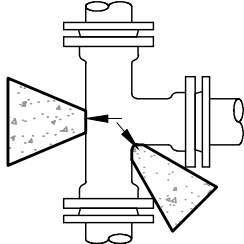
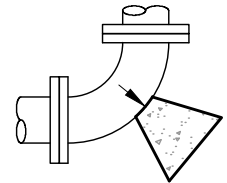
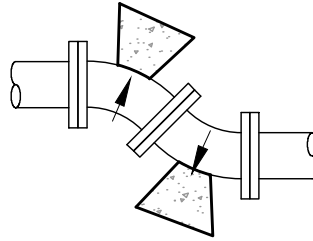
NOTES:

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 UN-CUT LENGTH OF WATER PIPE OVER THE CROSSING AND PROVIDE MECHANICAL RESTRAINED 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.

 PARK CITY MUNICIPAL CORPORATION WATER	DATE	WATER - SANITARY SEWER SEPARATION	STD. PLAN
	6/2019		547-B
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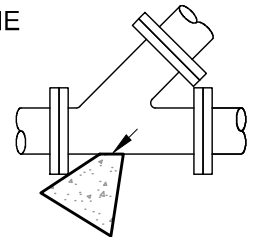
BEARING AREA
UNDISTURBED SOIL (TYP)



**MINIMUM BEARING AREA
IN SQ. FT.**

SIZE OF PIPE	TEES, VALVES, DEAD ENDS	90° BENDS	45° BENDS	22 1/2° BENDS	11 1/4° BENDS
4"	3.5	5	3	1.5	1
6"	7	10	5.5	3	1.5
8"	12.5	17	9.5	5	2.5
10"	18.5	26	14	7.5	3.8
12"	26	37	20	10	5
14"	35	49	26.5	13.5	7
16"	45	63	34	17.5	9

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



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.



PARK CITY MUNICIPAL CORPORATION
WATER

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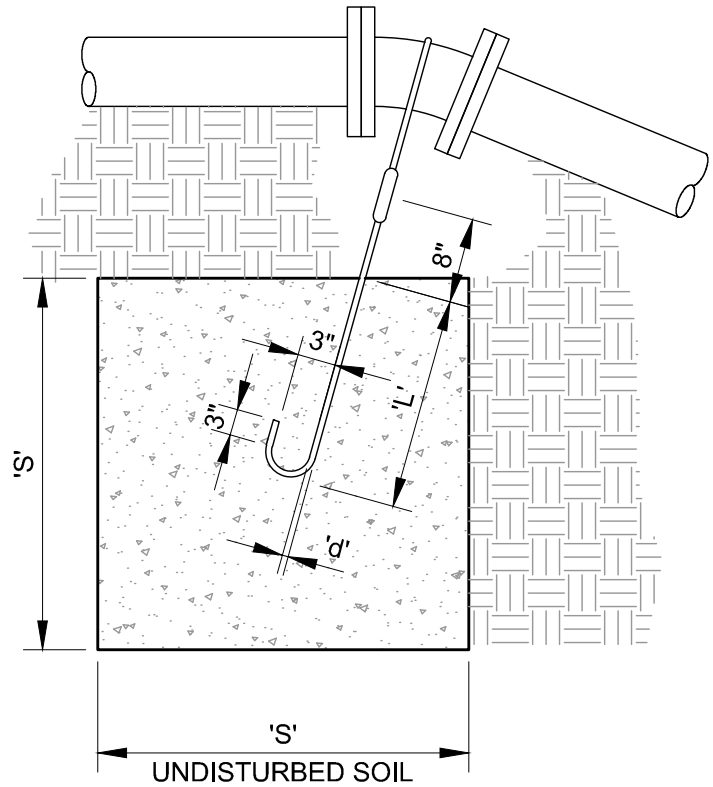
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**DIRECT BEARING
THRUST BLOCK**

STD. PLAN

561

TABLE OF DIMENSIONS					
SIZE OF PIPE (NOMINAL DIAMETER)	VERTICAL BEND IN DEGREES	CONCRETE BLOCKING IN CUBIC FEET	'S'	'd'	'L'
			SIDE OF CUBE - FEET	DIAMETER OF SHANK OR REBAR RODS - INCH	DEPTH OF ROD IN CONCRETE - FEET
4"	11 1/4	9.5	2.2	5/8"	1.5
	22 1/2	19.0	2.7	5/8"	2.0
6"	11 1/4	20	2.7	5/8"	2.0
	22 1/2	40	3.4	5/8"	2.0
8"	11 1/4	34	3.3	5/8"	2.0
	22 1/2	68	4.1	5/8"	2.0
10"	11 1/4	51	3.8	5/8"	2.0
	22 1/2	102	4.7	3/4"	3.0
12"	11 1/4	72	4.2	5/8"	2.0
	22 1/2	143	5.3	3/4"	3.0
14"	11 1/4	97	4.6	7/8"	3.0
	22 1/2	193	5.8	7/8"	3.0
16"	11 1/4	125	5.0	7/8"	3.0
	22 1/2	249	6.3	7/8"	4.0



TYPE A RESTRAINT

FOR 11 1/4° - 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.



PARK CITY MUNICIPAL CORPORATION
WATER

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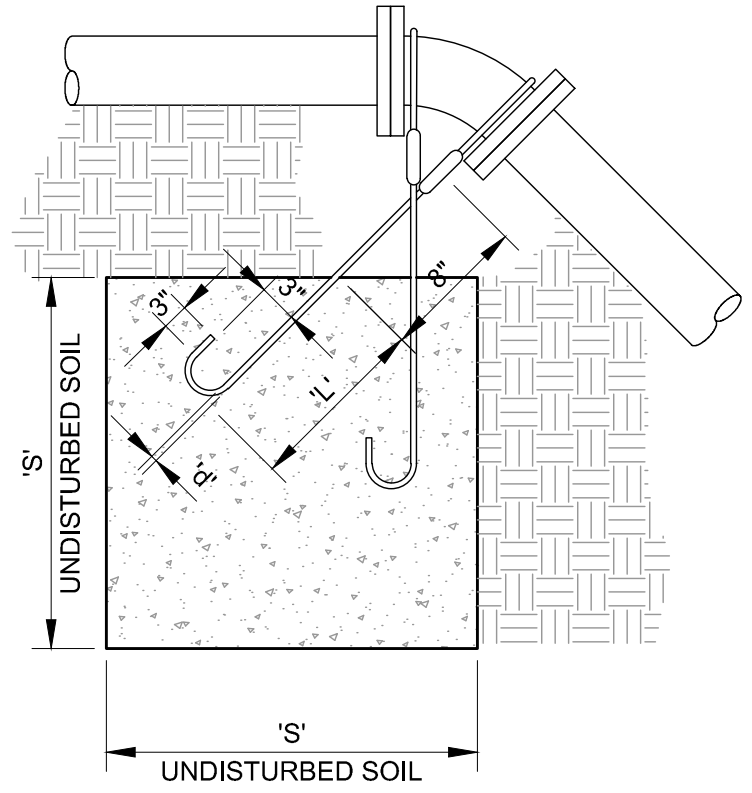
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TIE-DOWN THRUST RESTRAINTS

STD. PLAN

562-A



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., 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

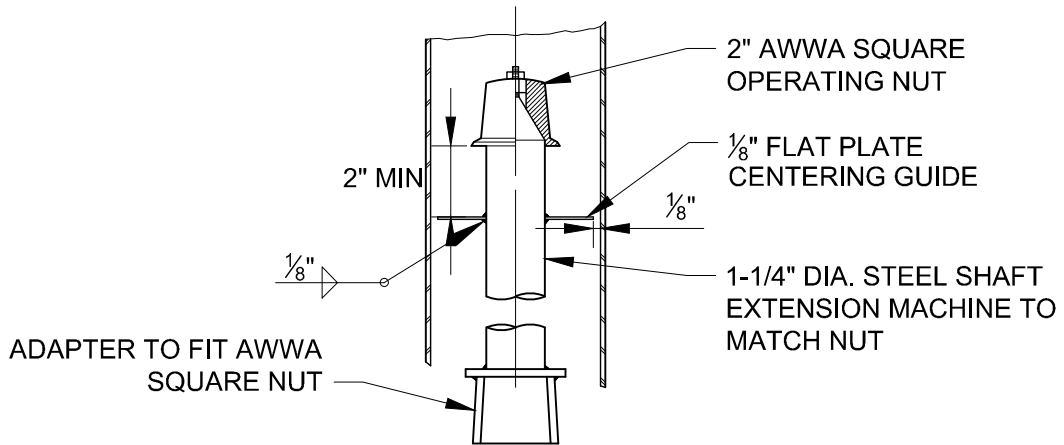
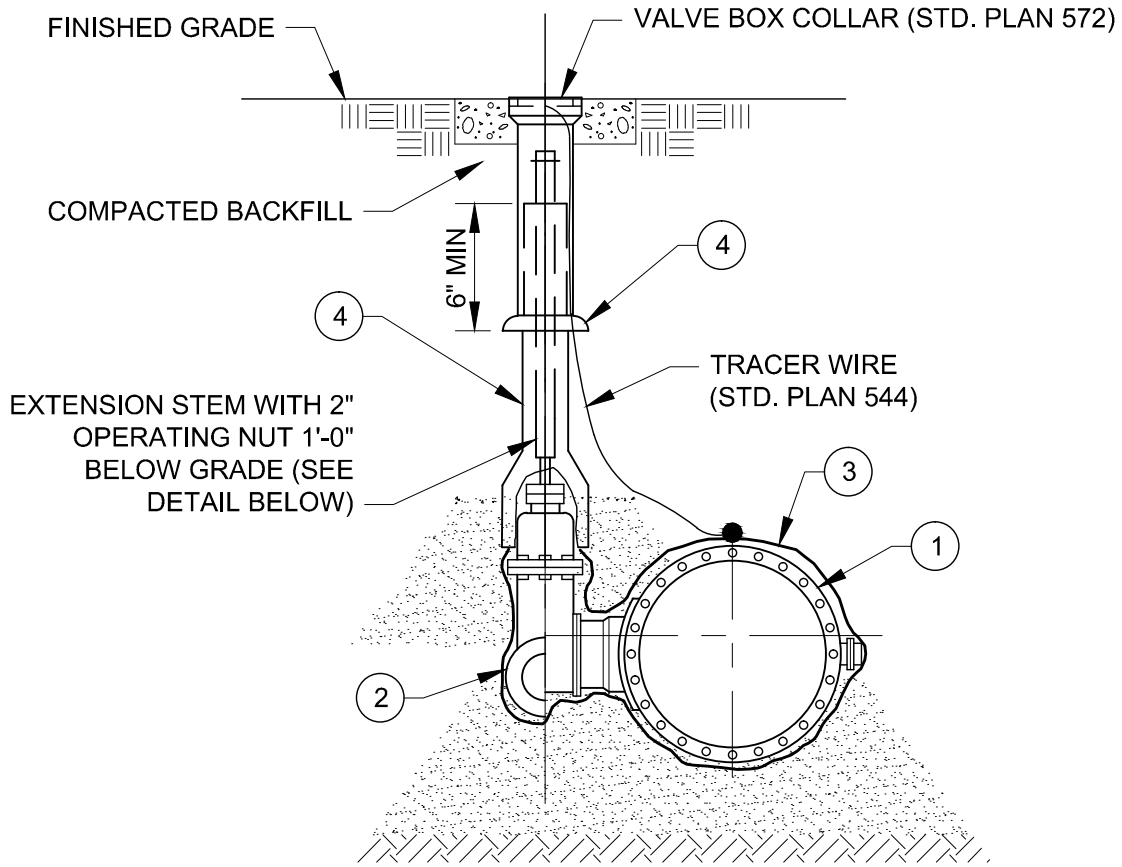
SIZE OF PIPE (NOMINAL DIAMETER)	VERTICAL BEND IN DEGREES	CONCRETE BLOCKING IN CUBIC YARDS	'S'	'd'	'L'
			SIDE OF CUBE - FEET	DIAMETER OF SHANK OR REBAR RODS - INCH	DEPTH OF ROD IN CONCRETE - FEET
4"	45	1.4	3.4	5/8"	2.0
				5/8"	
6"	45	2.8	4.3	5/8"	2.5
				5/8"	
8"	45	4.9	5.1	5/8"	3.0
				5/8"	
10"	45	7.3	5.9	5/8"	4.0
				5/8"	
12"	45	10.4	6.8	3/4"	4.0
				3/4"	
14"	45	14.0	7.3	3/4"	4.0
				3/4"	
16"	45	18.1	7.9	3/4"	4.0
				3/4"	



DATE
3/2014
REV.
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**TIE-DOWN
THRUST RESTRAINTS**

STD. PLAN
562-B



EXTENSION STEM

NOTES:

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

 PARK CITY MUNICIPAL CORPORATION WATER	DATE	BURIED VALVE AND VALVE BOX	STD. PLAN
	3/2014		570
	REV.		
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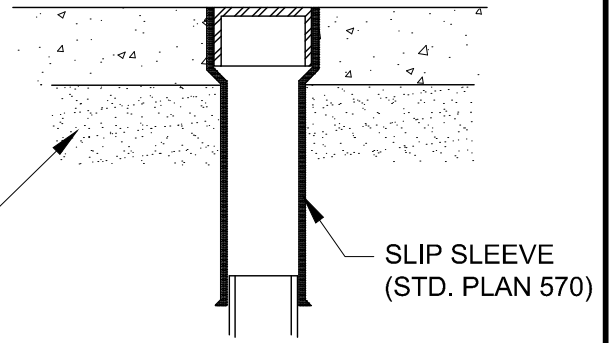
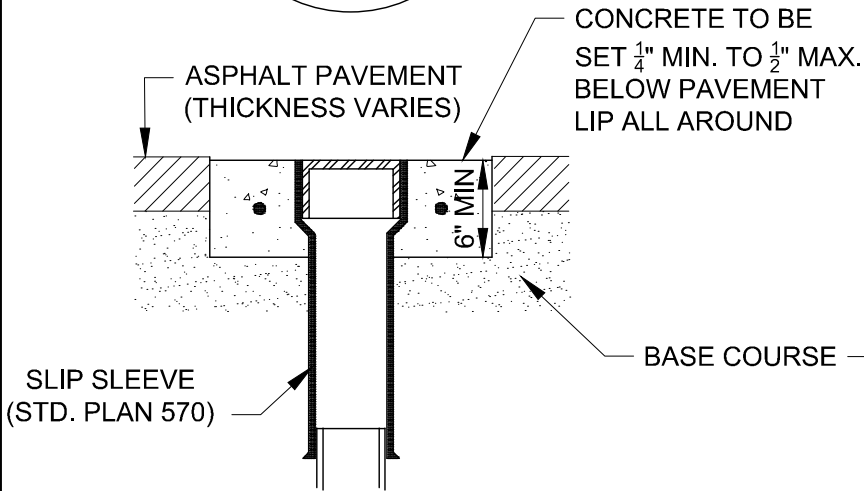
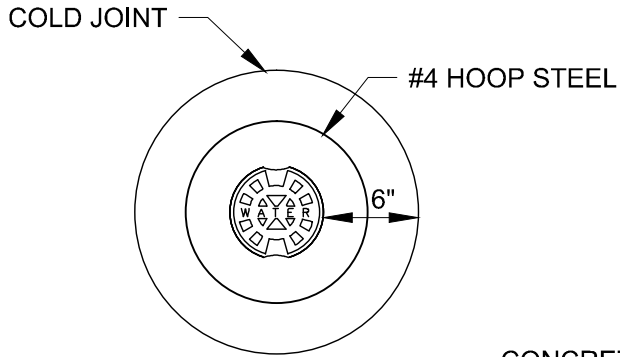
LEGEND AND APPROVED PARTS LIST

ITEM	DESCRIPTION	ACCEPTABLE MANUFACTURER	MODELS
①	BUTTERFLY VALVE, NRS, AWWA C504 CLASS 250B, 250 PSI, SST BONNET BOLTS, FLANGED END CONNECTIONS	MUELLER	LINESEAL XP11, 5227 SERIES
		CLOW	MODEL 4500
②	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	MUELLER	SERIES 2360
		CLOW	MODEL 2639
③	POLYETHYLENE ENCASUREMENT, HIGH DENSITY CROSS LAMINATED (HDCL) POLYETHYLENE FILM, AWWA C105 & AWWA C703E METHOD C	CHRISTY'S OR APPROVED EQUAL	AWWA C703E METHOD C (4 MIL)
④	VALVE BOX, CAST IRON, TWO PIECE, SLIP TYPE WITH CAST IRON DROP-IN COVER MARKED AS FOLLOWS: ISOLATION VALVE: "WATER" BUTTERFLY VALVE: "BFV" ZONE VALVE: "ZONE" FIRE LINE VALVE: "FIRE" VALVE BOX RISER: LIMIT ONE PER VALVE BOX	D&L SUPPLY OR APPV'D EQUAL	BOX AND LID: M-8042 RISER: M-8049 THRU M-8055 EXTENSION: M-8070

DETAIL NOTES

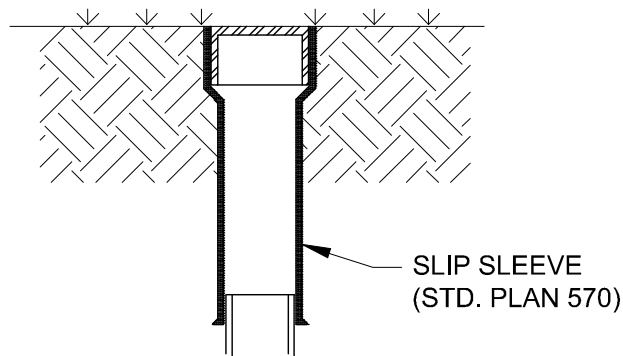
1. VALVES TO BE RATED FOR WORKING AND TEST PRESSURE OF WATER MAIN
2. PROVIDE FUSION BONDED EPOXY COATING ON GATE VALVE AND BUTTERFLY VALVE INTERIOR AND EXTERIOR
3. PROVIDE 316 SST BOLTS AND NUTS WITH ANTI-SEIZE LUBRICANT ON FLANGED CONNECTIONS
4. DO NOT LOCATE VALVE AND VALVE BOX WITHIN CURB OR GUTTER
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)

 PARK CITY MUNICIPAL CORPORATION WATER	DATE	<h2 style="margin: 0;">BURIED VALVE AND VALVE BOX</h2>	STD. PLAN
	4/2014		570 S
	REV.		



ASPHALT PAVEMENT

CONCRETE PAVEMENT



LANDSCAPED AREA



PARK CITY MUNICIPAL CORPORATION
WATER

DATE

3/2014

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**VALVE BOX
COLLAR**

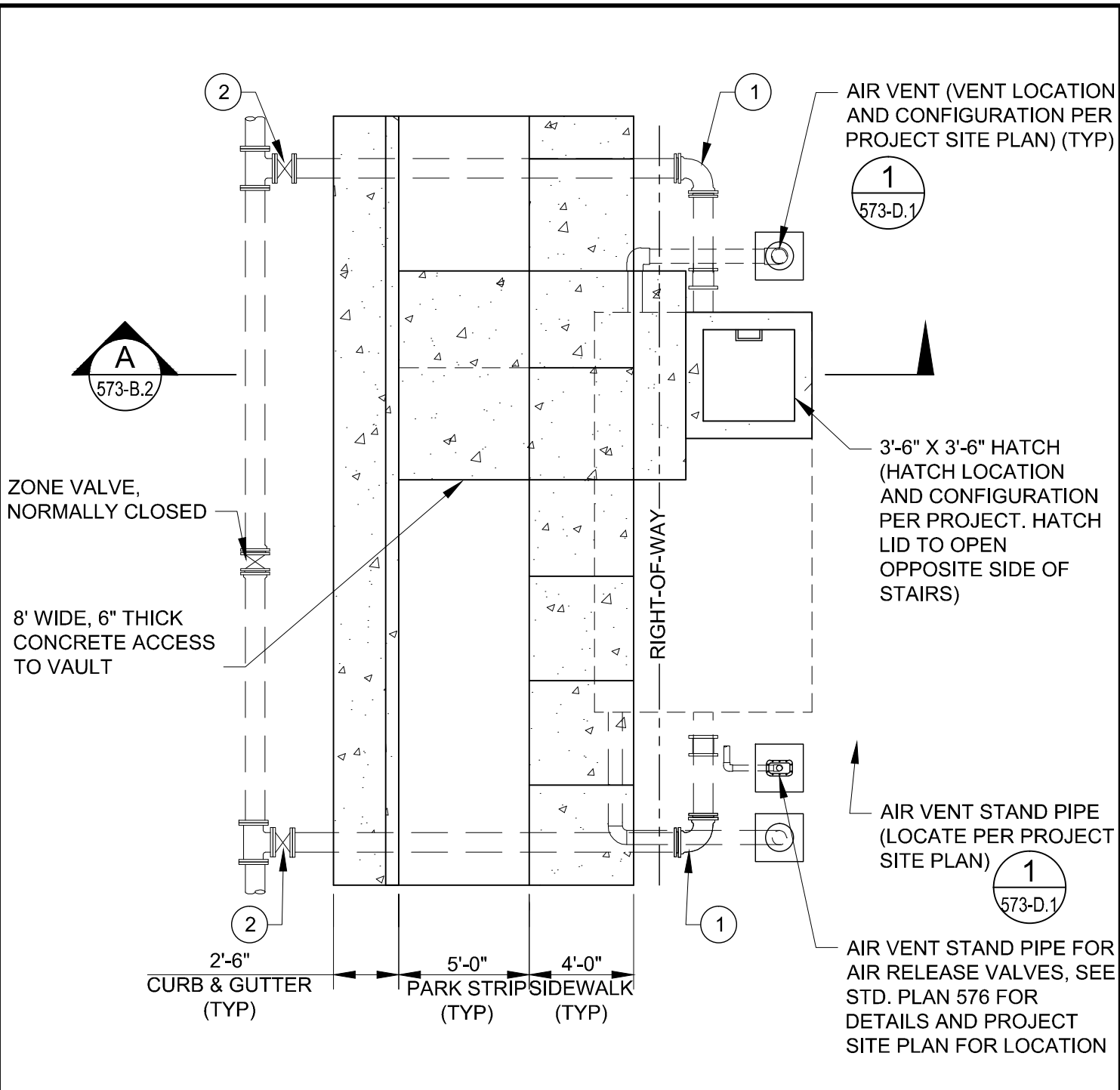
STD. PLAN

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.
5. FLANGED JOINTS: 125 LB FLANGES, ANSI/AWWA C115/A21.15. "FULL FACE FLANGE-TYTE" GASKET OR "RING FLANGE-TYTE" GASKET (OR PRE-APPROVED EQUAL). GASKETS TO BE HIGH-PERFORMANCE TYPE, 1/8" THICK, AND HAVE AT LEAST (3) BULB TYPE RINGS MOLDED INTO BOTH GASKET FACES, ANSI/AWWA C110/A21.11.
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, TNE MEC 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.

 PARK CITY MUNICIPAL CORPORATION WATER	DATE	PRESSURE REDUCING VALVE VAULT	STD. PLAN
	4/2014		573-A
	REV.		
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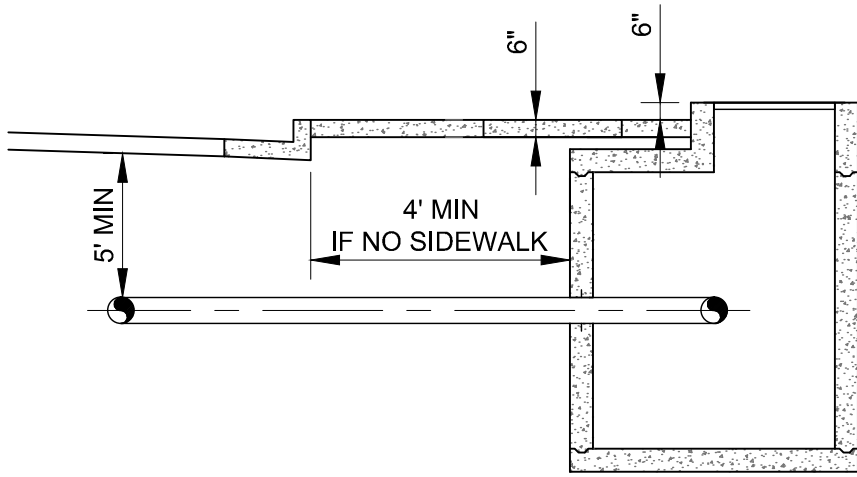
VAULT LOCATION PLAN

NTS

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.

 PARK CITY MUNICIPAL CORPORATION WATER	DATE	PRESSURE REDUCING VALVE VAULT	STD. PLAN
	4/2014		573-B.1
	REV.		
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VAULT SECTION A
 NTS 573-B.1



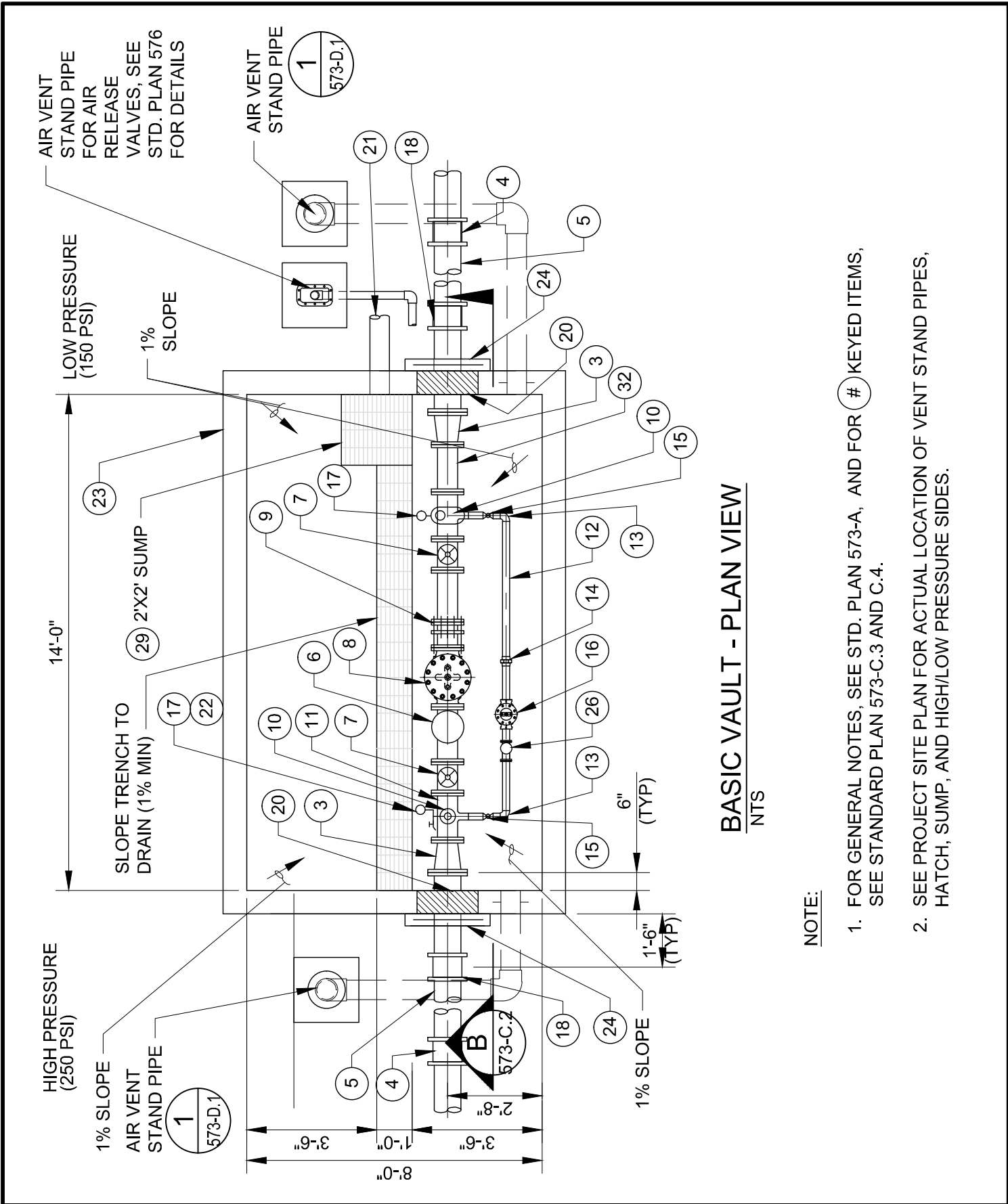
PARK CITY MUNICIPAL CORPORATION
WATER

DATE
4/2014
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**PRESSURE REDUCING
 VALVE VAULT**

STD. PLAN

573-B.2



BASIC VAULT - PLAN VIEW

NTS

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.



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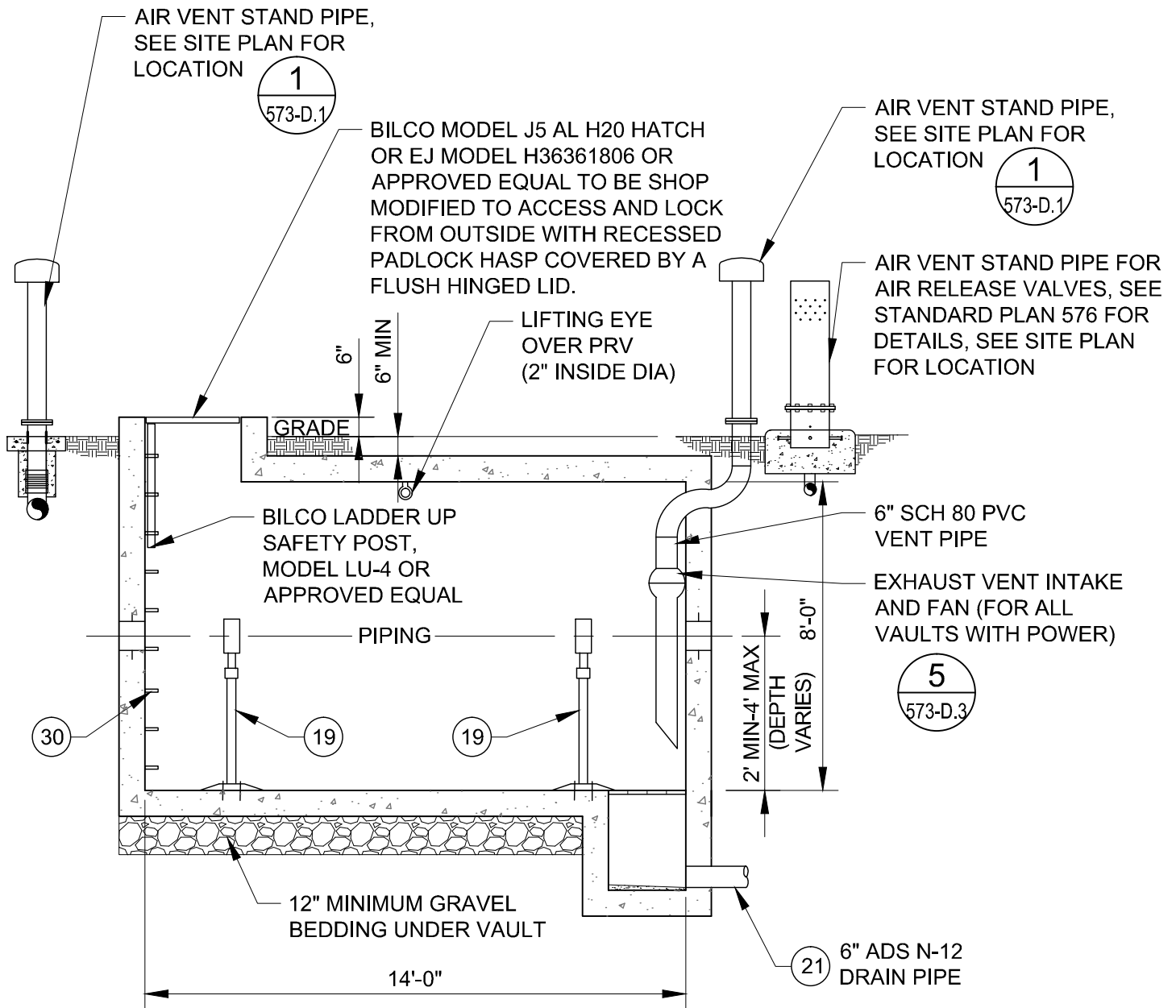
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**PRESSURE REDUCING
VALVE VAULT**

STD. PLAN

573-C.1



VAULT SECTION

B

NTS

573-C.1

NOTES:

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



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**PRESSURE REDUCING
VALVE VAULT**

STD. PLAN

573-C.2

MATERIAL LIST

ITEM	PRESSURE REDUCING VALVE VAULT
①	INSTALL 8" WATER MAIN WITH 90° DI BENDS WITH RETAINER GLANDS AND THRUST BLOCKS
②	INSTALL 8" RESILIENT SEAT VALVE, FL X MJ, W/ TEE AND RETAINER GLANDS AND TRUST BLOCKS ON EXISTING WATER MAIN
③	8"X6" DI REDUCER FL X FL
④	8" DI WATER MAIN, USE FLEXIBLE OR DUCTILE IRON MJ SLEEVES (POWERSEAL MODEL 3506 POWERMAX OR EQUAL) AS NECESSARY TO LEVEL EXISTING LINES
⑤	8" DI PIPE
⑥	6" CLA-VAL X 43 H (H STYLE STRAINER), FLANGED ENDS, 10 MESH SCREEN, CAGE SUPPORT, AND O-RING
⑦	6" RESILIENT SEAT VALVE, FL X FL W/HAND WHEEL AND POSITION INDICATOR
⑧	6" 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)
⑨	6" DISMANTLING JOINT, ROMAC DJ 400, OR EQUAL.
⑩	1" 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).
⑪	6" X 6" X 2" 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)
⑫	2" BRASS OR RIGID COPPER PIPE, SCHEDULE 40, THREADED, TYPICAL
⑬	2" BRONZE 90° ELBOW, THREADED
⑭	2" BRONZE UNION COUPLING, THREADED
⑮	2" THREADED BRONZE BALL VALVE WITH HANDLE, 300 PSI, MUELLER 300
⑯	2" 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)
⑰	2" LIQUID FILLED PRESSURE GAUGE, GRADE B, UPSTREAM (0-300 PSI) DOWNSTREAM (0-200 PSI), THREADED, WITH STEM VALVE - SEE STD. PLAN 573-D.1
⑱	8" MJ SOLID SLEEVE, MEGA-LUG RESTRAINTS WITH COR-TEN TEE BOLTS



PARK CITY MUNICIPAL CORPORATION
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PRESSURE REDUCING VALVE VAULT

STD. PLAN

573-C.3

MATERIAL LIST (CON'T)

ITEM	PRESSURE REDUCING VALVE VAULT
(19)	2" STEEL PIPE SUPPORT STAND, ADJUSTABLE (2 REQUIRED ON 6" PIPE SYSTEM, 2 REQUIRED ON 2" PIPE SYSTEM), SEE STD. PLAN 578
(20)	CORE DRILL OPENING WITH LINK-SEAL PIPE-TO-WALL SEAL. TYPICAL ON ALL OPENING. FILL OUTSIDE OPENINGS WITH NON-SHRINK GROUT AND CAULK
(21)	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
(22)	3/4" HOSE BIBBS, I.P. THREAD - SEE STD. PLAN 573-D.1
(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, ROSEMOUNT MODEL 3051TG 800 PSI ASSEMBLED TO INTEGRAL, 2-VALVE, ROSEMOUNT 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.



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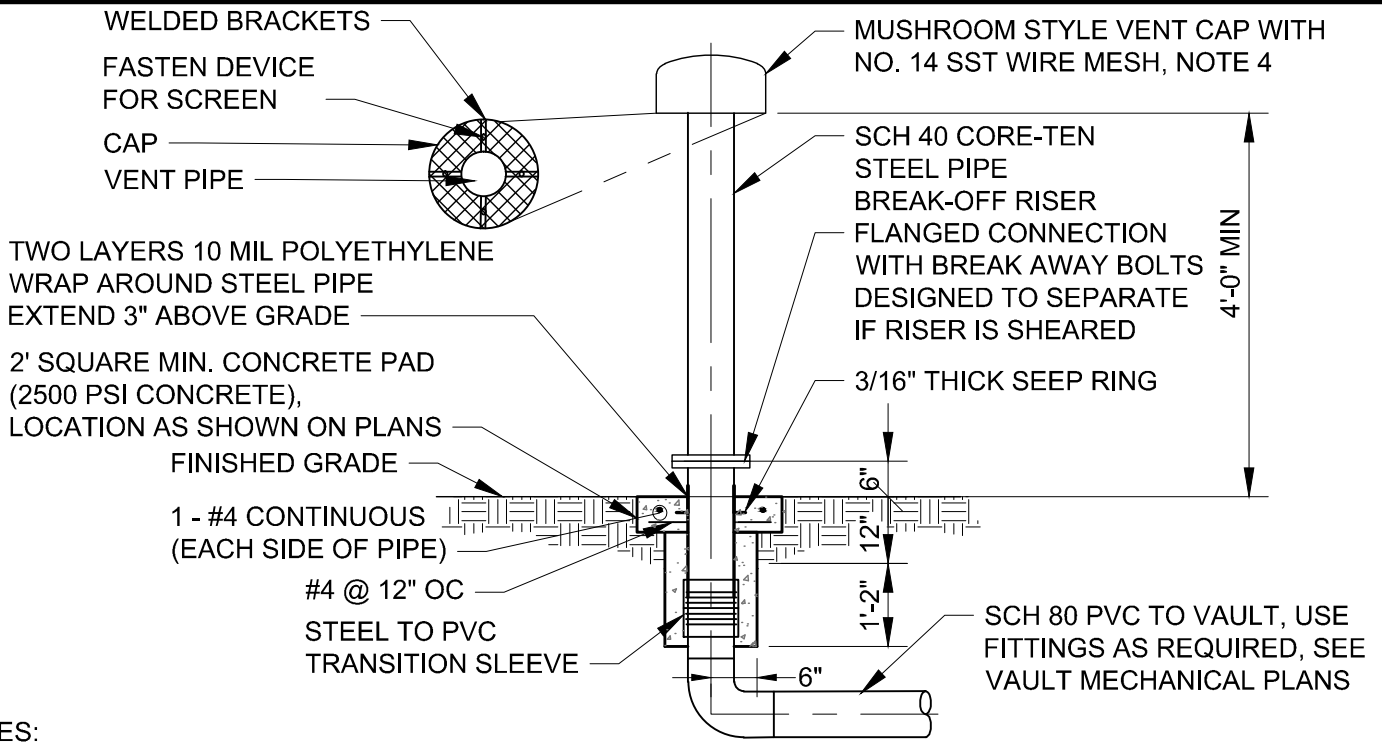
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**PRESSURE REDUCING
VALVE VAULT**

STD. PLAN

573-C.4

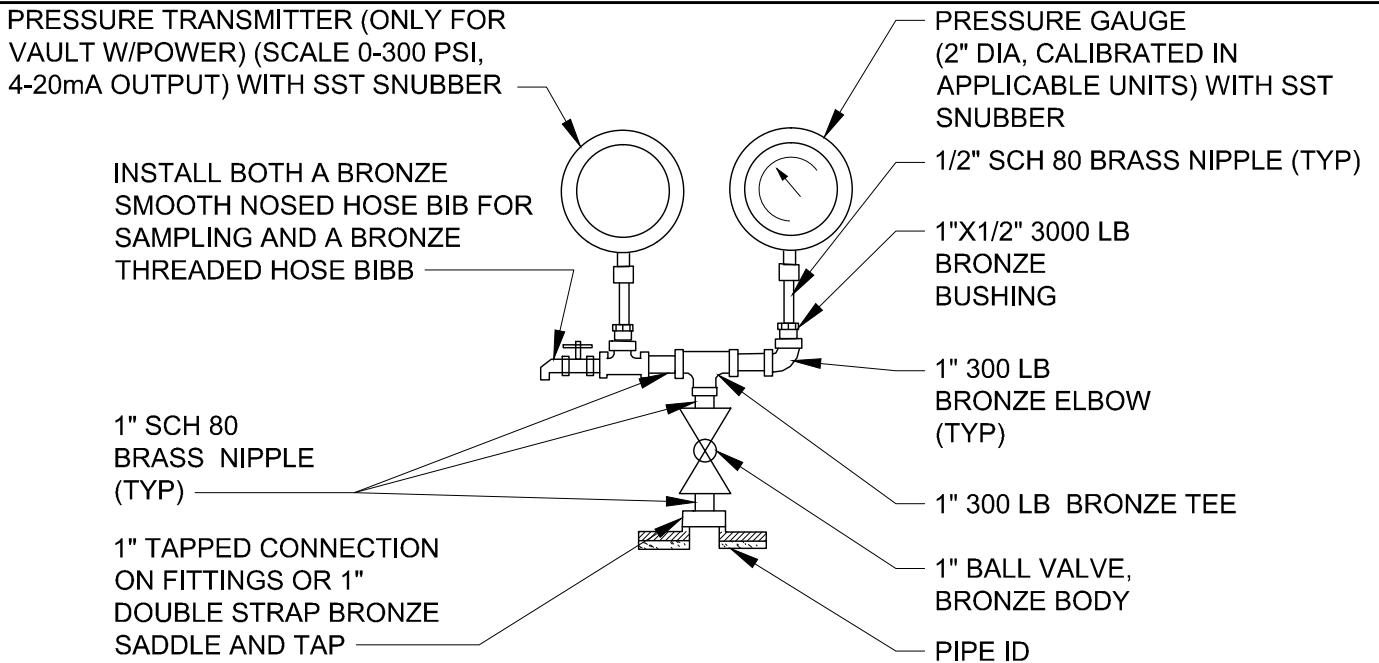


NOTES:

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
NTS

1
573-B, 573-C



**PRESSURE GAUGE AND
TRANSMITTER DETAIL**

NTS

2
573-C



PARK CITY MUNICIPAL CORPORATION
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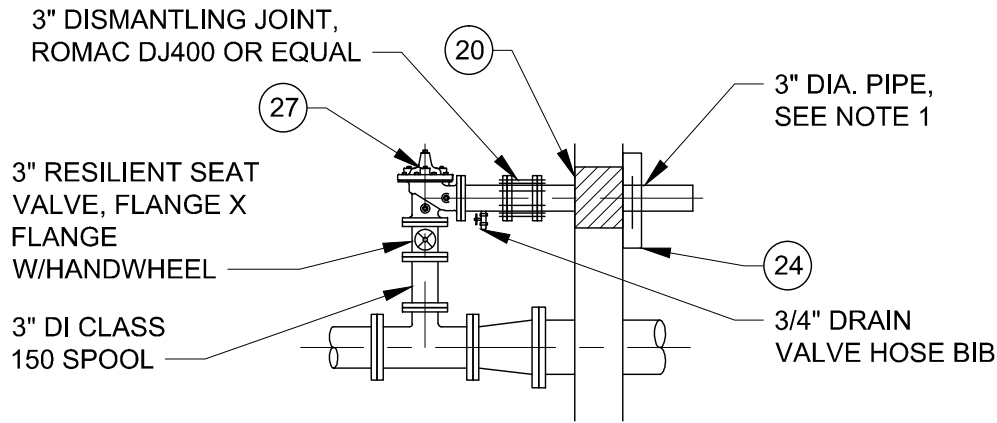
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**PRESSURE REDUCING
VALVE VAULT**

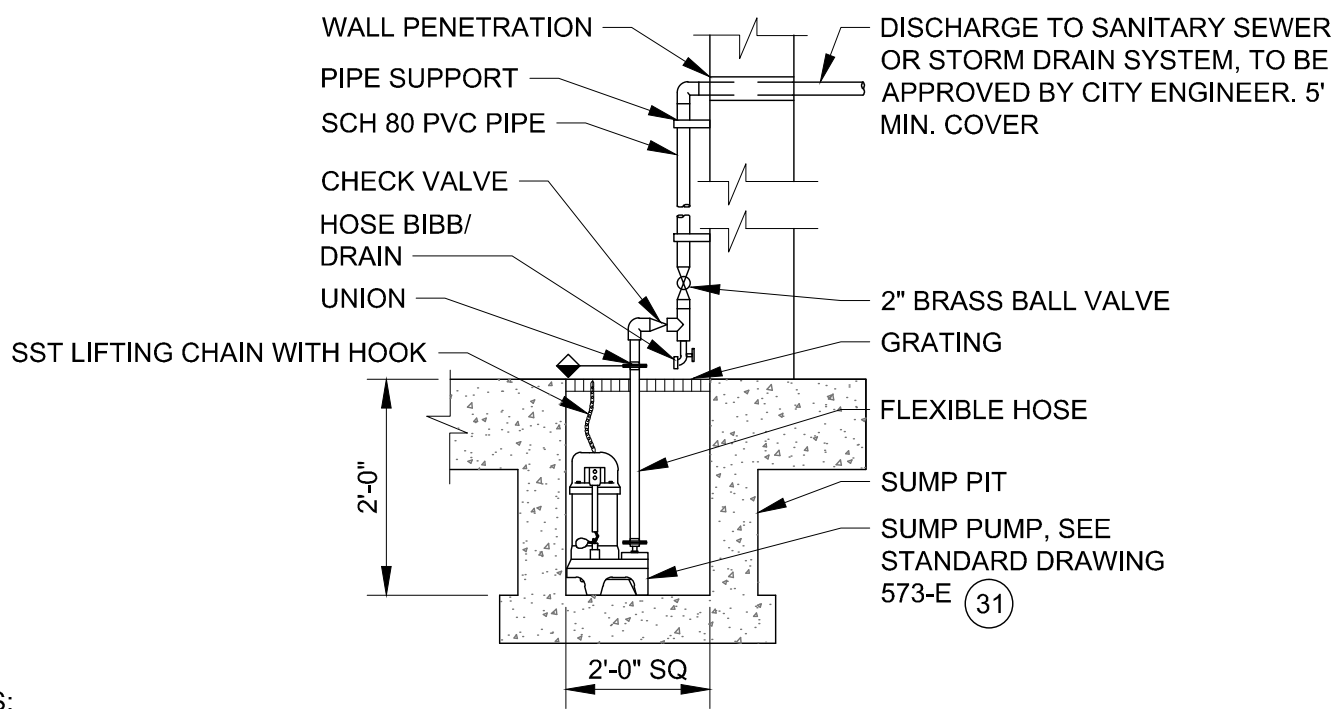
STD. PLAN

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

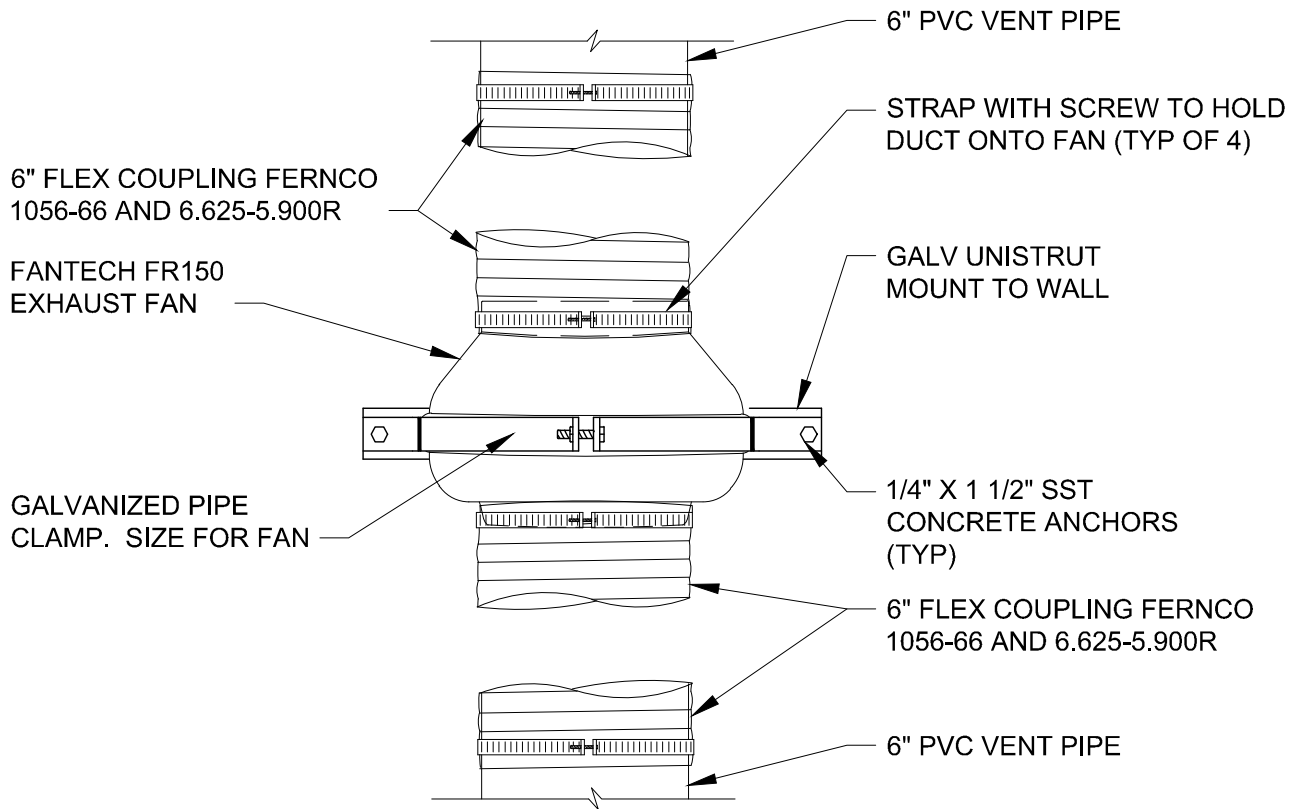
3" PRESSURE RELIEF VALVE DETAIL (3)
 NTS 573-C



- 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 (4)
 NTS 573-C

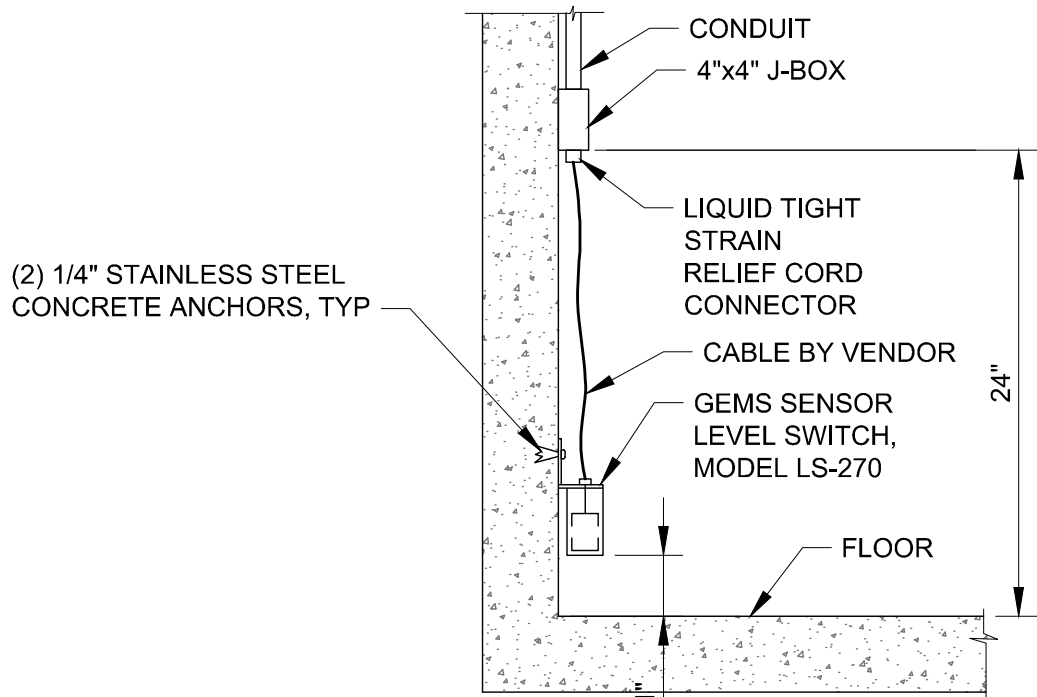
	DATE	PRESSURE REDUCING VALVE VAULT	STD. PLAN
	4/2014		573-D.2
	REV.		
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IN-LINE EXHAUST FAN DETAIL

5
573-C, 573-E

NTS



FLOOD SWITCH INSTALLATION DETAIL

6
573-E

NTS

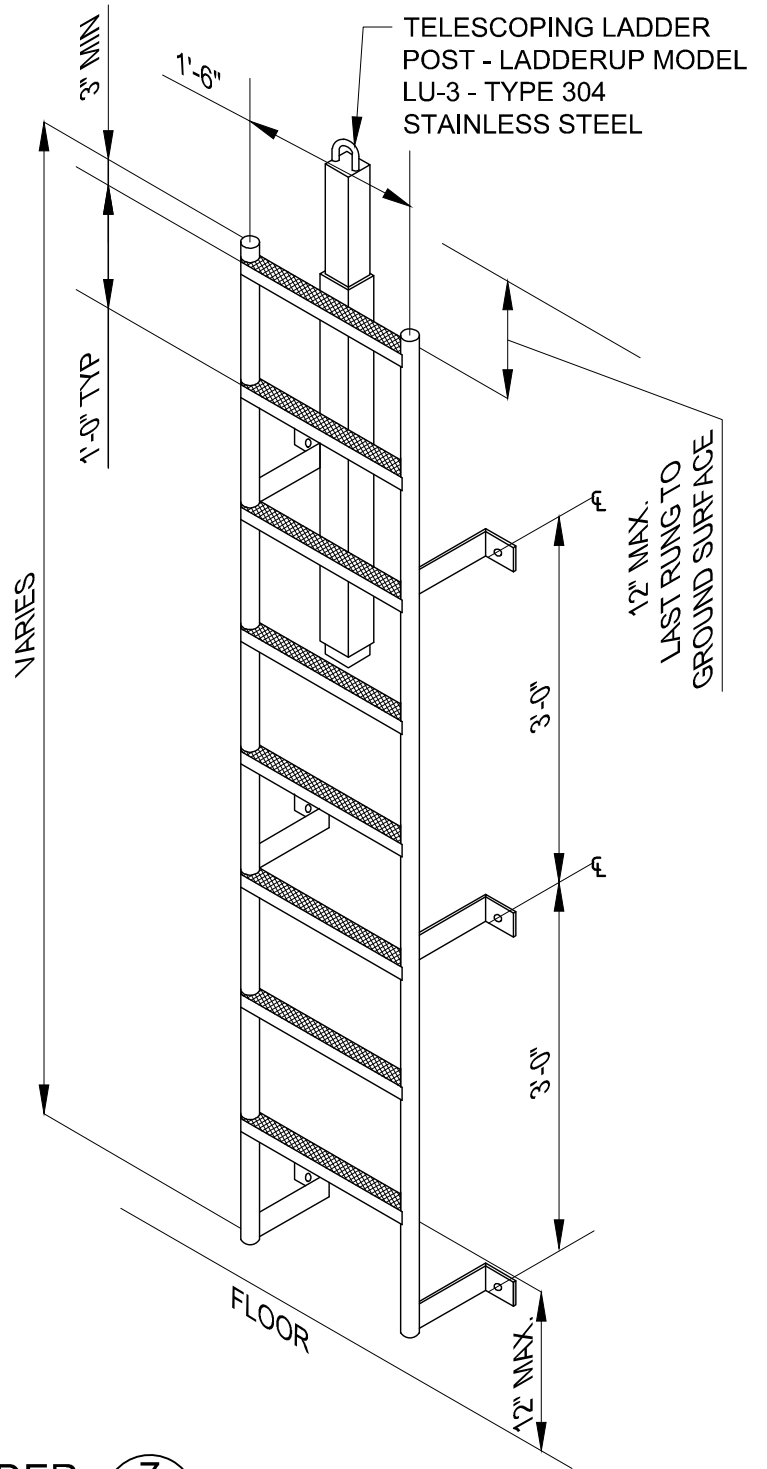
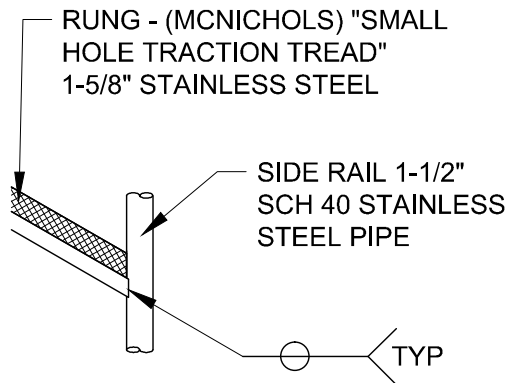
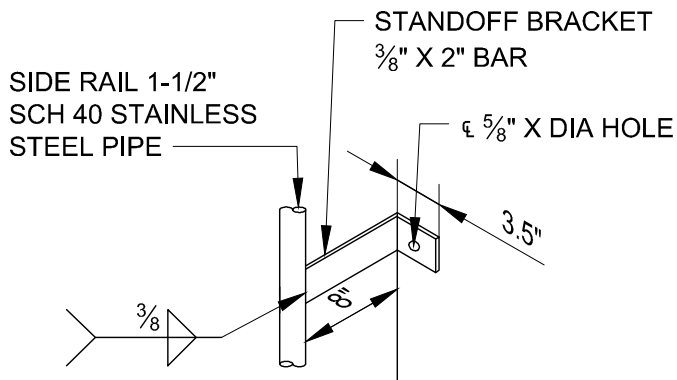


DATE	4/2014
REV.	0

PRESSURE REDUCING VALVE VAULT

STD. PLAN

573-D.3



VAULT LADDER
NTS

7
573-C

NOTE:

- LADDER, ANCHORS, AND BOLTS TO BE STAINLESS STEEL



PARK CITY MUNICIPAL CORPORATION
WATER

DATE

4/2014

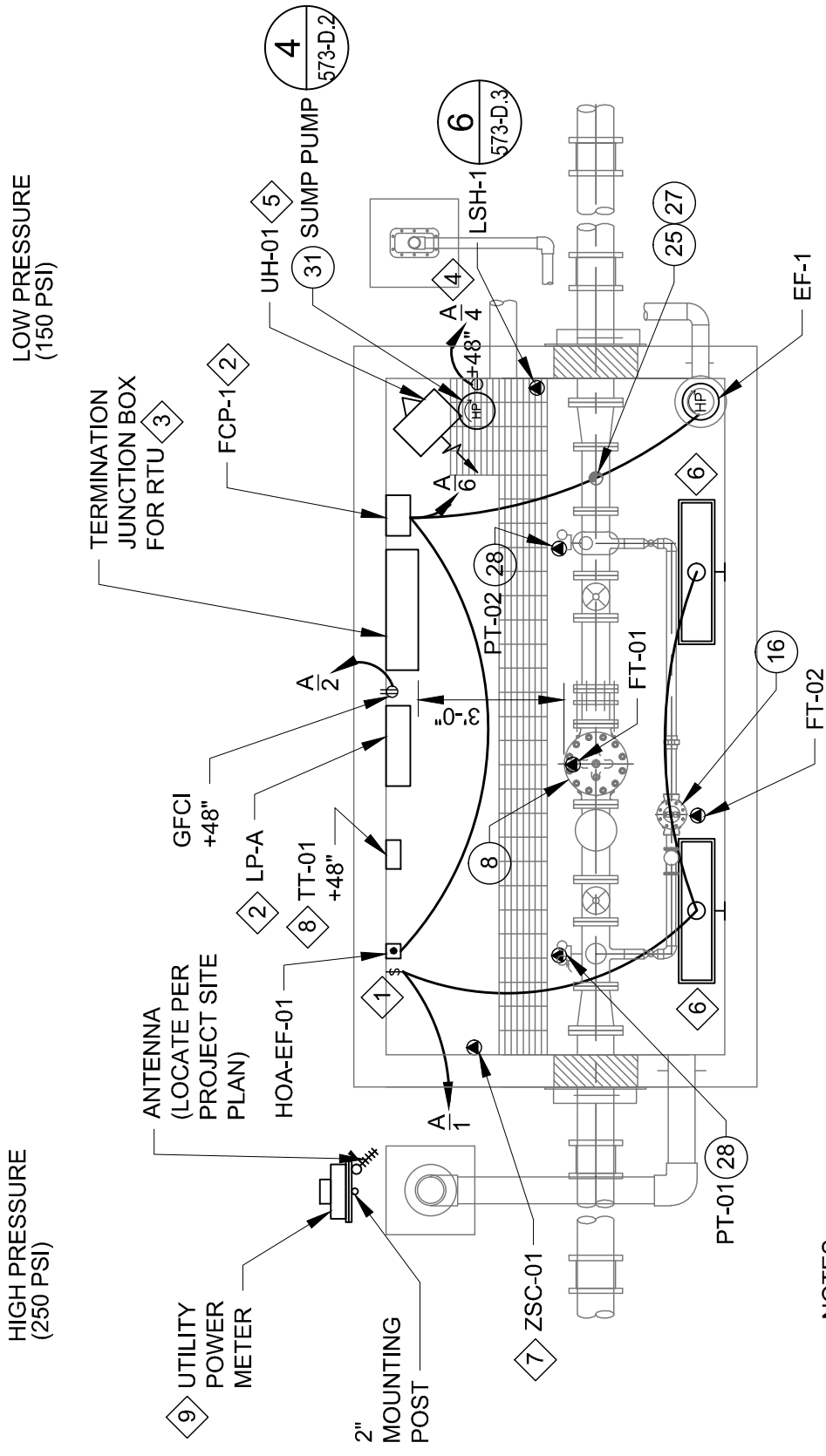
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**PRESSURE REDUCING
VALVE VAULT**


STD. PLAN

573-D.4



- NOTES:**
1. SEE STD. PLAN 573-E.3 FOR # KEYED ITEMS.
 2. FOR GENERAL NOTES, SEE STD. PLAN 573-A, AND FOR # KEYED ITEMS, SEE STD. PLAN 573-C.3 AND C.4
 3. SEE STD. PLAN 573-E.2 FOR PANEL SCHEDULE.
 4. SEE STD. PLANS 573-E.4 AND 573-E.5 FOR ONE LINE DIAGRAMS.

TYPICAL VAULT WITH POWER - PLAN VIEW
NTS

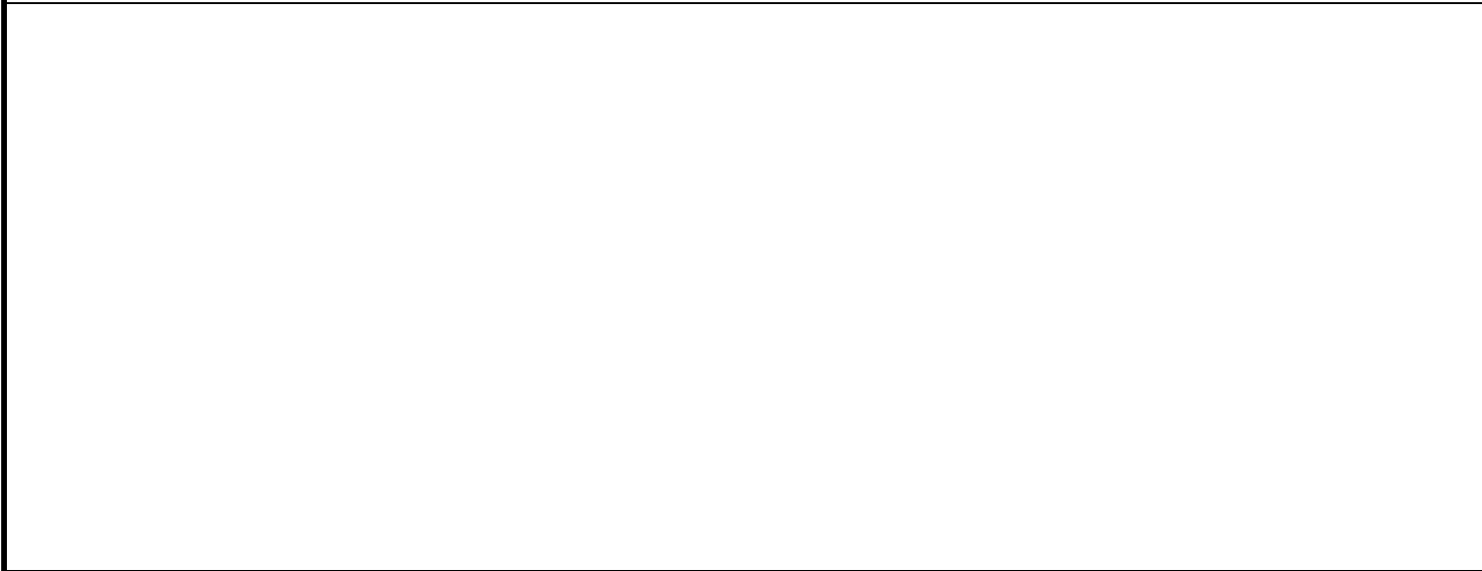
 PARK CITY MUNICIPAL CORPORATION WATER	DATE	<h2 style="margin: 0;">PRESSURE REDUCING VALVE VAULT</h2>	STD. PLAN
	4/2014		<h1 style="margin: 0;">573-E.1</h1>
	REV. 0		

PANEL SCHEDULE LP-A

LOCATION: IN VAULT	MFGR: CULTER HAMMER 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										
BRKR		DESCRIPTION	CONT. WATT S	N-CONT. WATTS	NO	A		B		NO	N-CONT. WATTS	CONT. WATTS	DESCRIPTION	BRKR	
A	P					CONT.	N-CONT.	CONT.	N-CONT.					A	P
20	1	LIGHTS		148	1	0	328			2	180		OUTLETS	15	1
20	1	RTU		500	3			0	1246	4	746		SUMP PUMP OUTLET	20	1
20	2	UNIT HEATER (UH-1)	1300		5	1300	560			6	560		FAN CONTROL PANEL	20	1
20	-	-	1300		7			1300	0	8			SPARE	20	1
20	1	SPARE			9	0	0			10			SPARE	20	1
20	1	SPARE			11			0	0	12			SPACE		
		SPACE			13	0	0			14			SPACE		
		SPACE			15			0	0	16			SPACE		
		SPACE			17					18			SPACE		

TOTAL WATTS:	2600	648	1,300	888	1,300	1246	1,486	0
CONTINUOUS LOAD:	2600							
CONTINUOUS LOAD *125%:	3,250							
NON-CONTINUOUS LOAD:	2,134							
DESIGN WATTS:	5,384							
MIN. RATING (AMPS):	15							

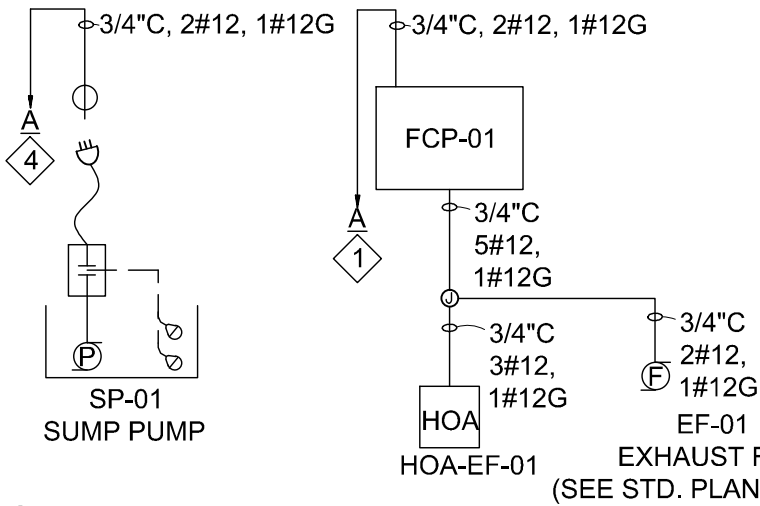


 PARK CITY MUNICIPAL CORPORATION WATER	DATE	<h3 style="margin: 0;">PRESSURE REDUCING VALVE VAULT</h3>	STD. PLAN
	4/2014		<h2 style="margin: 0;">573-E.2</h2>
	REV.		
	0		

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.

 PARK CITY MUNICIPAL CORPORATION WATER	DATE	PRESSURE REDUCING VALVE VAULT	STD. PLAN
	4/2014		573-E.3
	REV.		
	0		

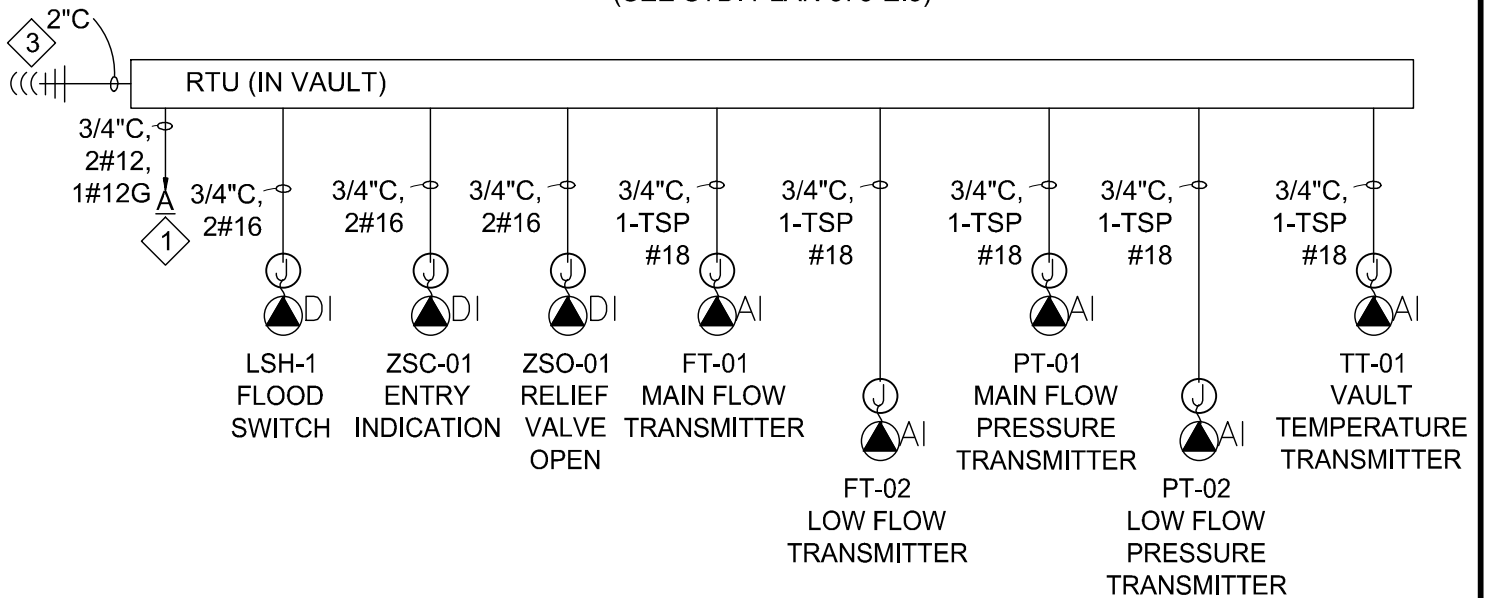


GENERAL NOTES:

1. REFER TO STD. PLAN 573-E.1 FOR EQUIPMENT LOCATIONS, 573-E.2 FOR PANEL SCHEDULE, AND 573-E.3 FOR # KEYED ITEMS.

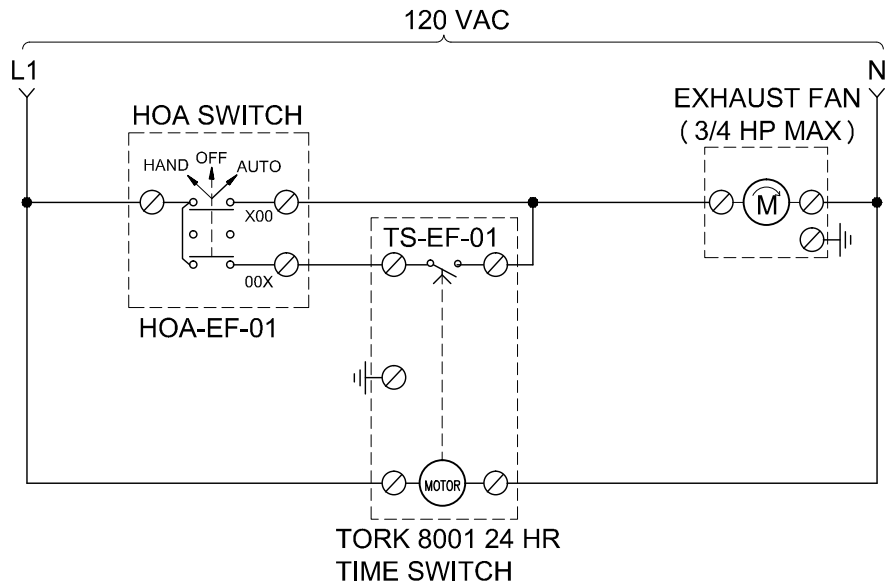
LEGEND

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



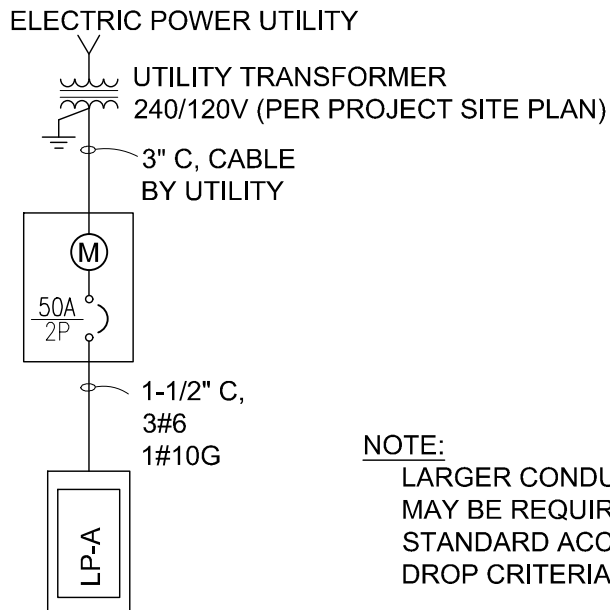
CONTROL ONE-LINE DIAGRAM

<p>PARK CITY 1884 PARK CITY MUNICIPAL CORPORATION WATER</p>	DATE	PRESSURE REDUCING VALVE VAULT	STD. PLAN
	4/2014		573-E.4
	REV.		
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TYPICAL VAULT EXHAUST FAN CONTROL SCHEMATIC

NTS



POWER ONE-LINE

NTS



PARK CITY MUNICIPAL CORPORATION
WATER

DATE

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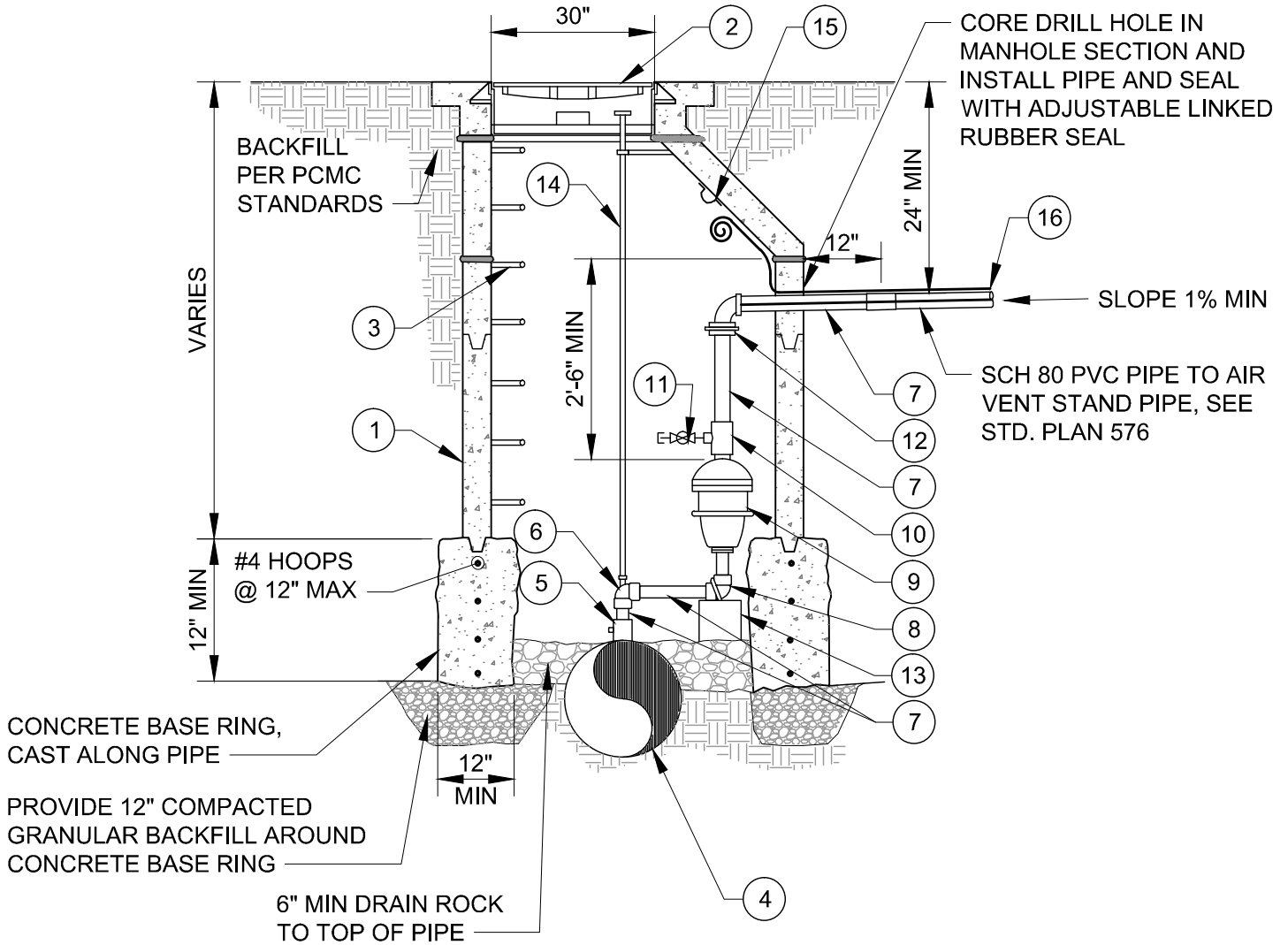
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PRESSURE REDUCING VALVE VAULT

STD. PLAN

573-E.5



PARK CITY MUNICIPAL CORPORATION
WATER

DATE

3/2014

REV.

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AIR RELEASE / CAV VALVE MANHOLE

STD. PLAN

574

LEGEND AND APPROVED PARTS LIST

ITEM	DESCRIPTION	ACCEPTABLE MANUFACTURER	MODELS
①	5' DIA. MANHOLE, PRECAST CONCRETE ECCENTRIC CONE AND WALL SECTIONS		ASTM C 478
②	MANHOLE FRAME AND COVER (STD. PLAN 529)		
③	POLYPROPYLENE ENCASED GRADE 60 STEEL STEPS AT 13" C-C, 13-1/2" TREAD WIDTH	M.A. INDUSTRIES OR APP'D EQUAL	PS2-PFDF
④	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	MUELLER	DI PIPE SADDLE: BR2B SERIES, I.P. THDS; PVC PIPE SADDLE: H-13000 SERIES, I.P. THDS
		FORD	DI PIPE SADDLE: STYLE 202B I.P. THDS; PVC PIPE SADDLE: STYLE S902, I.P. THDS
⑤	BRASS CORPORATION STOP, INLET I.P. THREAD, OUTLET F.I.P. THREAD (VALVE INLET SIZE)	MUELLER	B-20046N
		FORD	FB1100-(SERVICE SIZE)-G-NL
⑥	BRONZE ANGLE VALVE, 300 PSI (VALVE INLET DIAMETER)		
⑦	BRASS NIPPLES X LENGTH AS REQUIRED, M.I.P., (VALVE INLET DIAMETER)		
⑧	BRASS 90° ELBOW, F.I.P. (VALVE INLET/OUTLET DIAMETER)		
⑨	COMBINATION AIR VACUUM / RELEASE VALVE, NPT, SIZE PER ENGINEER DESIGN AND APPROVED PLANS		
⑩	BRONZE TEE, F.I.P., THREADED, (VALVE OUTLET DIAMETER X 3/4" DIA.)		
⑪	DRAIN ASSEMBLY: 3/4" DIA. BRASS CLOSE NIPPLE, M.I.P.; 3/4" BRONZE BALL VALVE; 3/4" BRONZE PLUG	MUELLER	SERIES 300 VALVE; H-10035
⑫	BRONZE UNION, (VALVE OUTLET DIAMETER)		
⑬	CAV ASSEMBLY SUPPORT, (1) 16"X8"X8" CMU BLOCK		
⑭	5/8" DIAMETER GALVANIZED STEEL ROD WITH 3" DIAMETER HAND WHEEL TO FORM EXTENSION, TOGETHER WITH A GALVANIZED EYELET STANDOFF		
⑮	LIFTING EYE ABOVE AIR VALVE, GALVANIZED		
⑯	TRACER WIRE: 12 GA. SOLID, BLUE PVC INSULATION; WIRE-WIRE CONNECTORS SILICONE-FILLED WIRE NUTS	IDEAL INDUSTRIES	TWISTER DB PLUS OR APP'D EQUAL

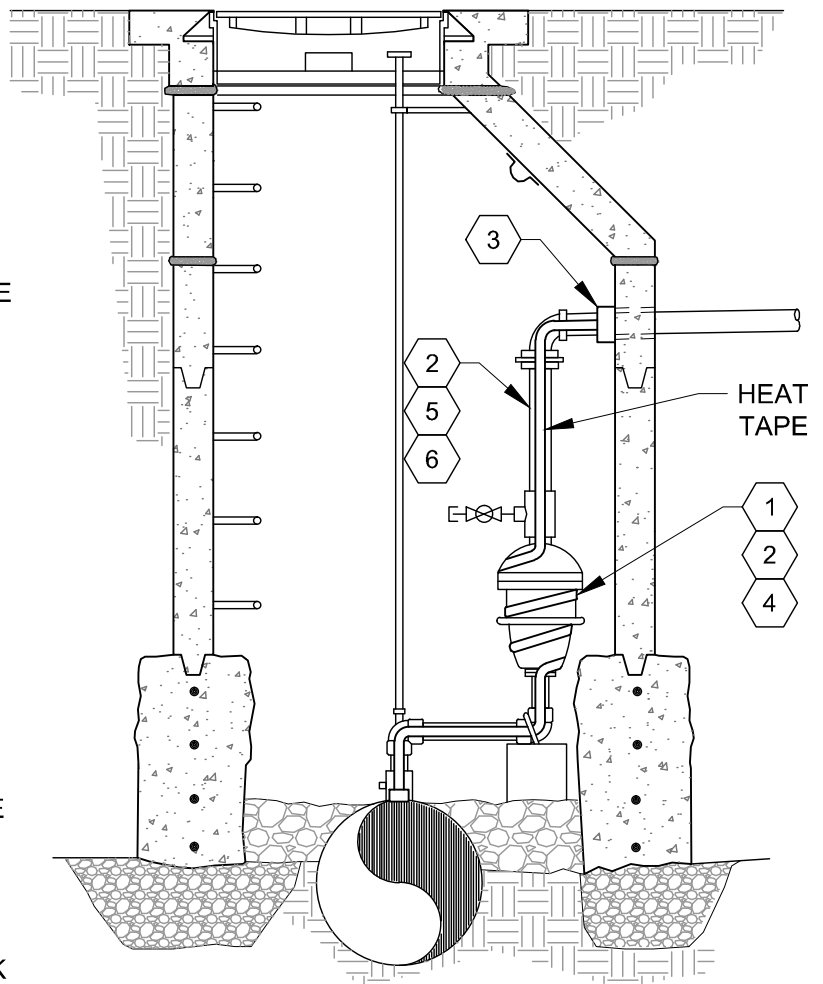
DETAIL NOTES

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

 PARK CITY MUNICIPAL CORPORATION WATER	DATE	AIR RELEASE / CAV MANHOLE	STD. PLAN
	4/2014		574 S
	REV.		

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



PARK CITY MUNICIPAL CORPORATION
WATER

DATE

3/2014

REV.

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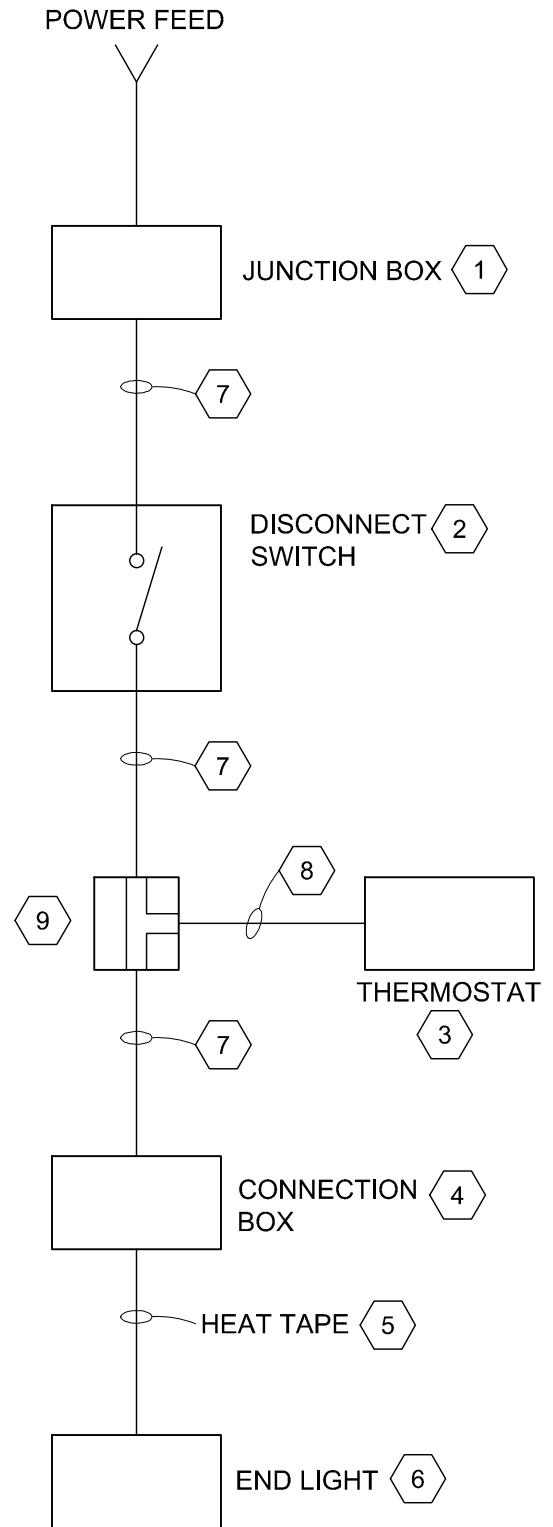
HEAT TAPE INSTALLATION FOR AIR RELEASE / CAV VALVE

STD. PLAN

575-A

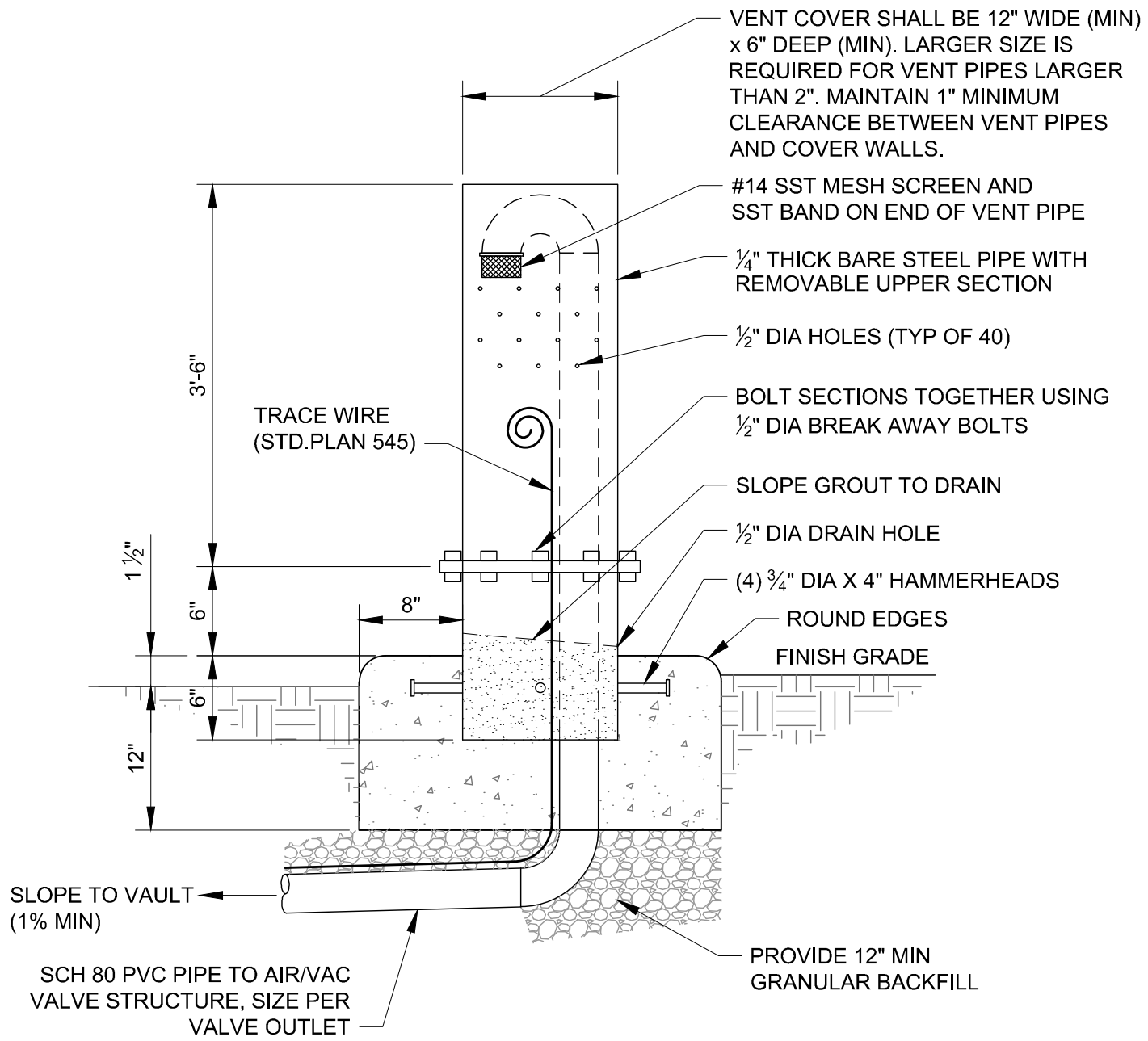
KEY NOTES:

- 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

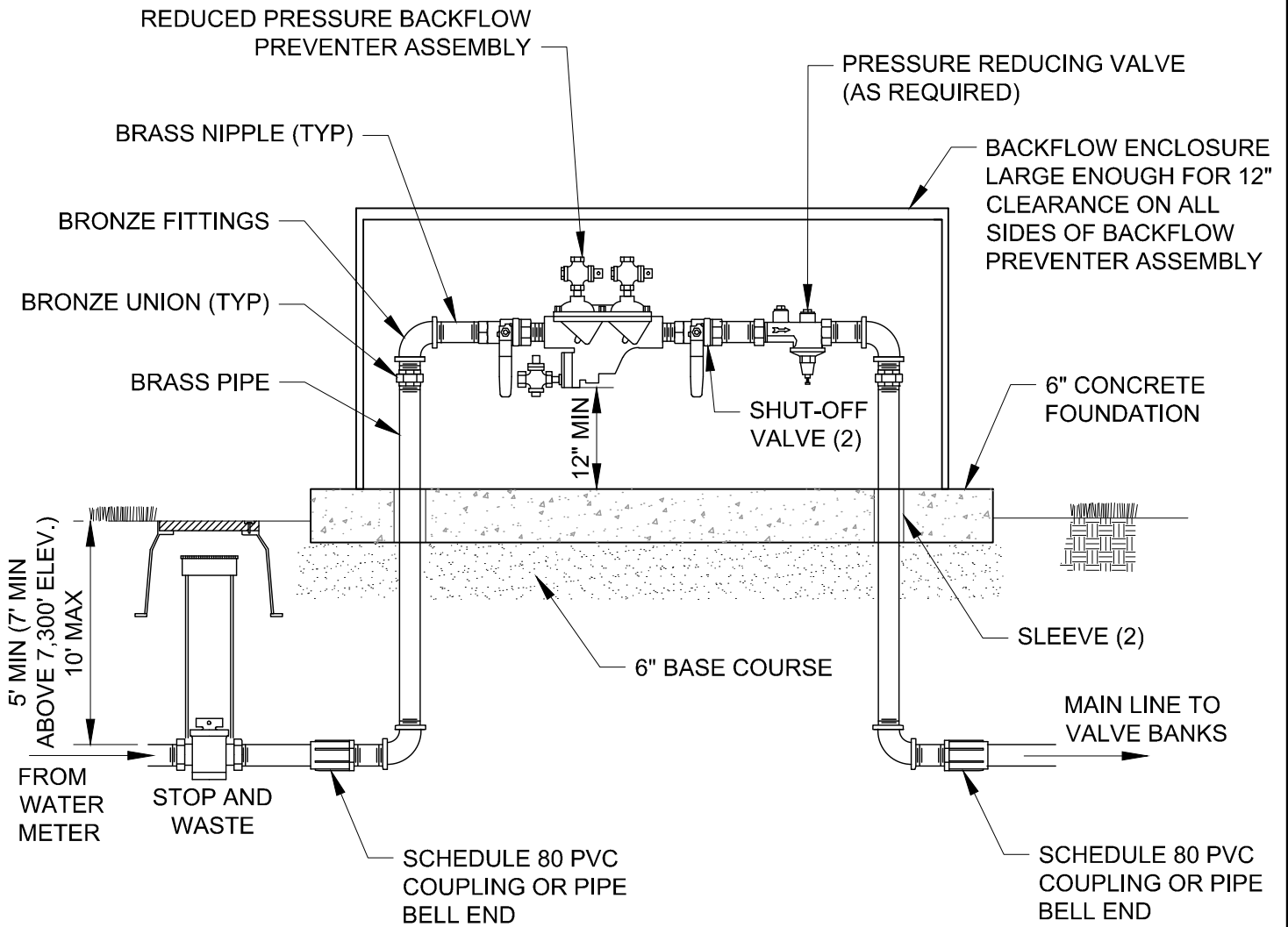
 PARK CITY MUNICIPAL CORPORATION WATER	DATE	HEAT TAPE INSTALLATION FOR AIR RELEASE / CAV VALVE	STD. PLAN
	3/2014		575-B
	REV.		
	0		



NOTES:

1. LOCATE VENT AS SHOWN ON APPROVED PLANS, 1'-6" MINIMUM BEHIND TOP BACK OF CURB / GUTTER OR SIDEWALK.

 PARK CITY MUNICIPAL CORPORATION WATER	DATE	AIR VENT STAND PIPE	STD. PLAN
	3/2014		576
	REV.		
	0		



LESS THAN 3" DIAMETER



PARK CITY MUNICIPAL CORPORATION
WATER

DATE

4/2014

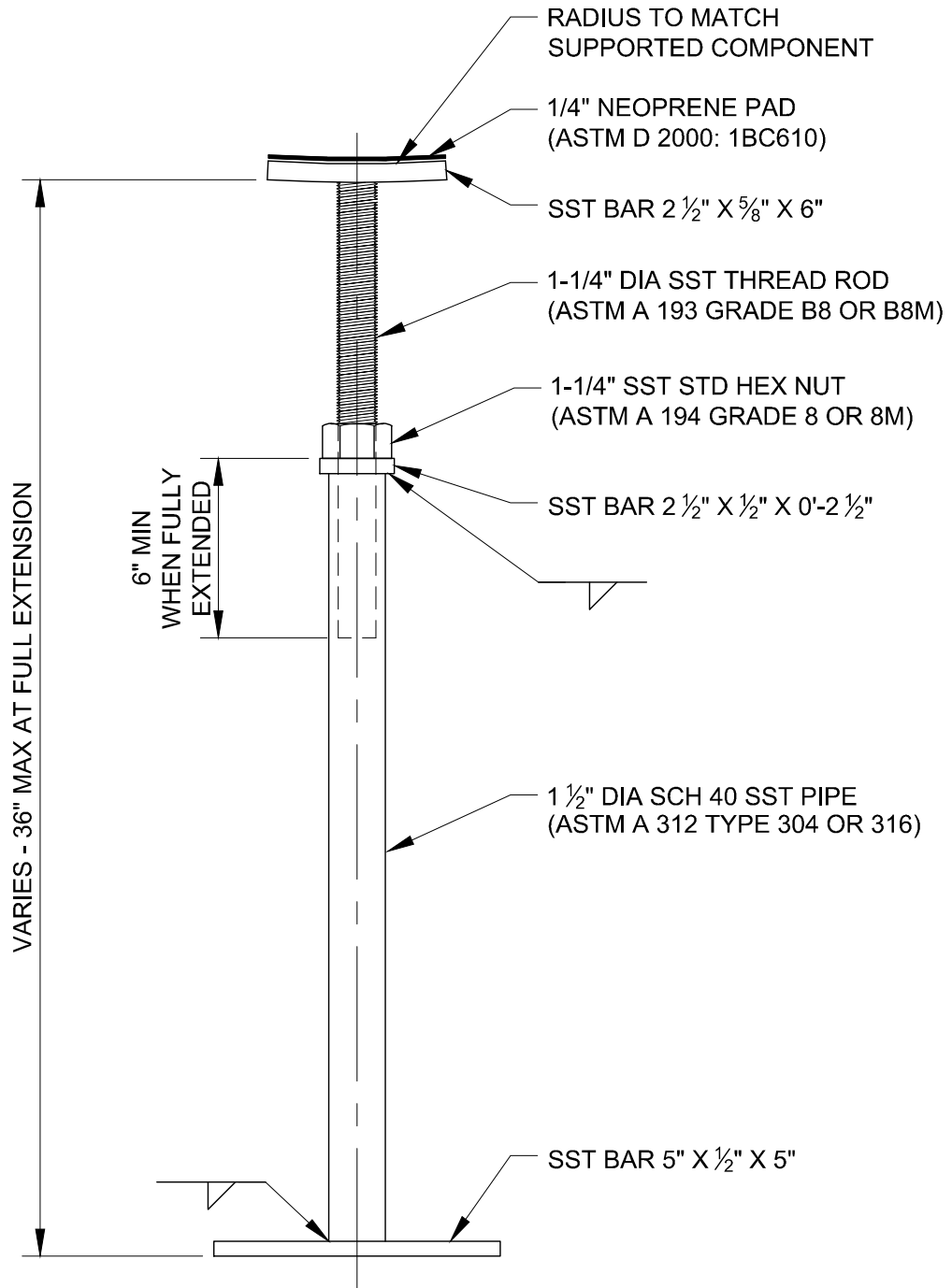
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**IRRIGATION BACKFLOW
PREVENTER - OUTSIDE SETTING**


STD. PLAN

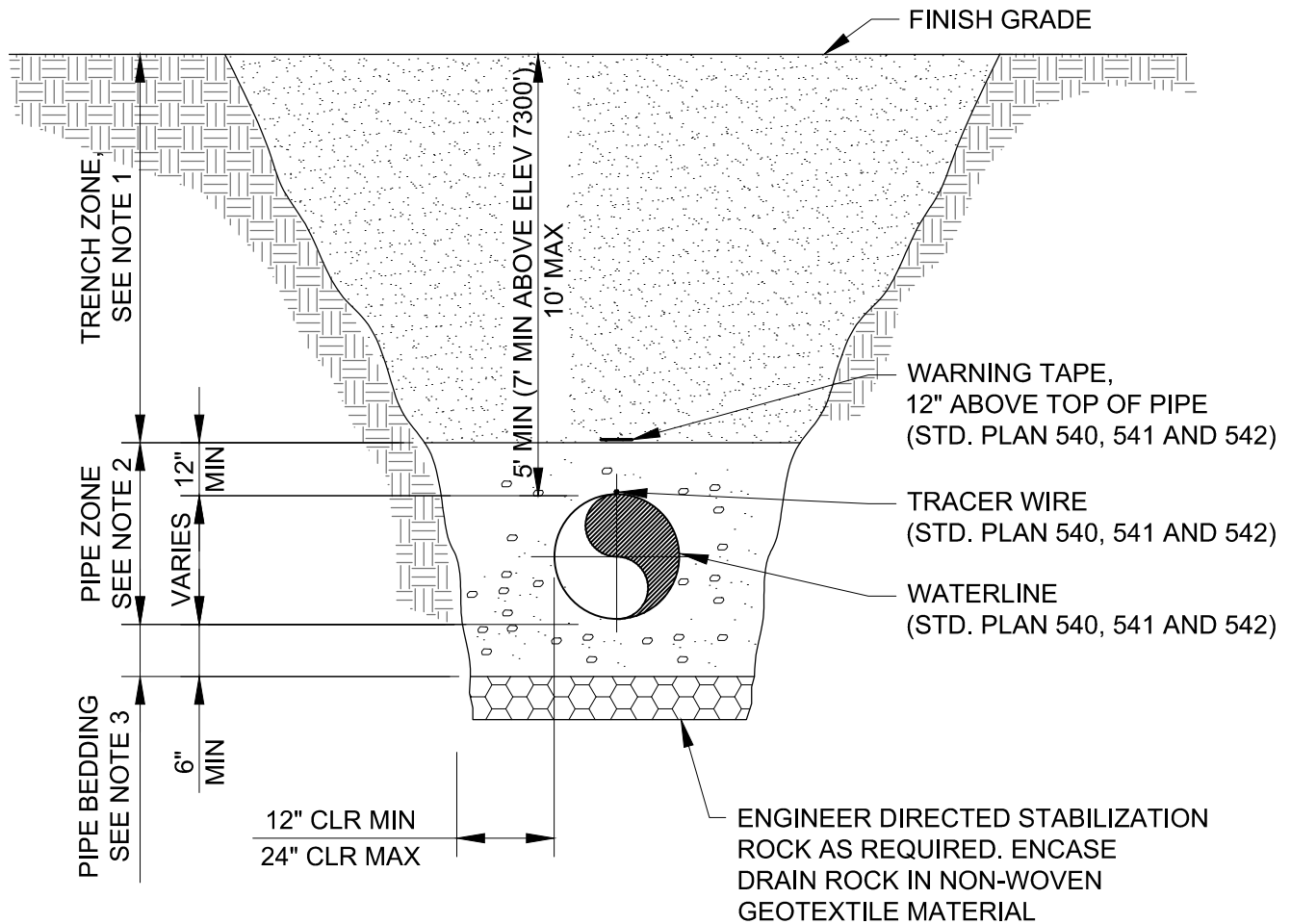
577



NOTES:

1. BAR MATERIAL TO BE ASTM A 240 TYPE 304 OR 316 (Fy= 30 KSI MIN.)

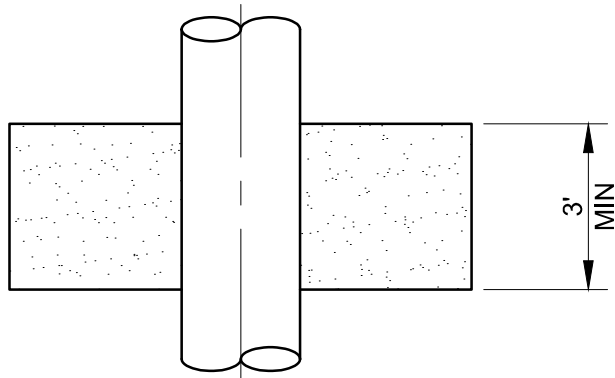
 PARK CITY MUNICIPAL CORPORATION WATER	DATE	<h2>PIPE SUPPORT</h2>	STD. PLAN
	3/2014		<h1>578</h1>
	REV.		
	0		



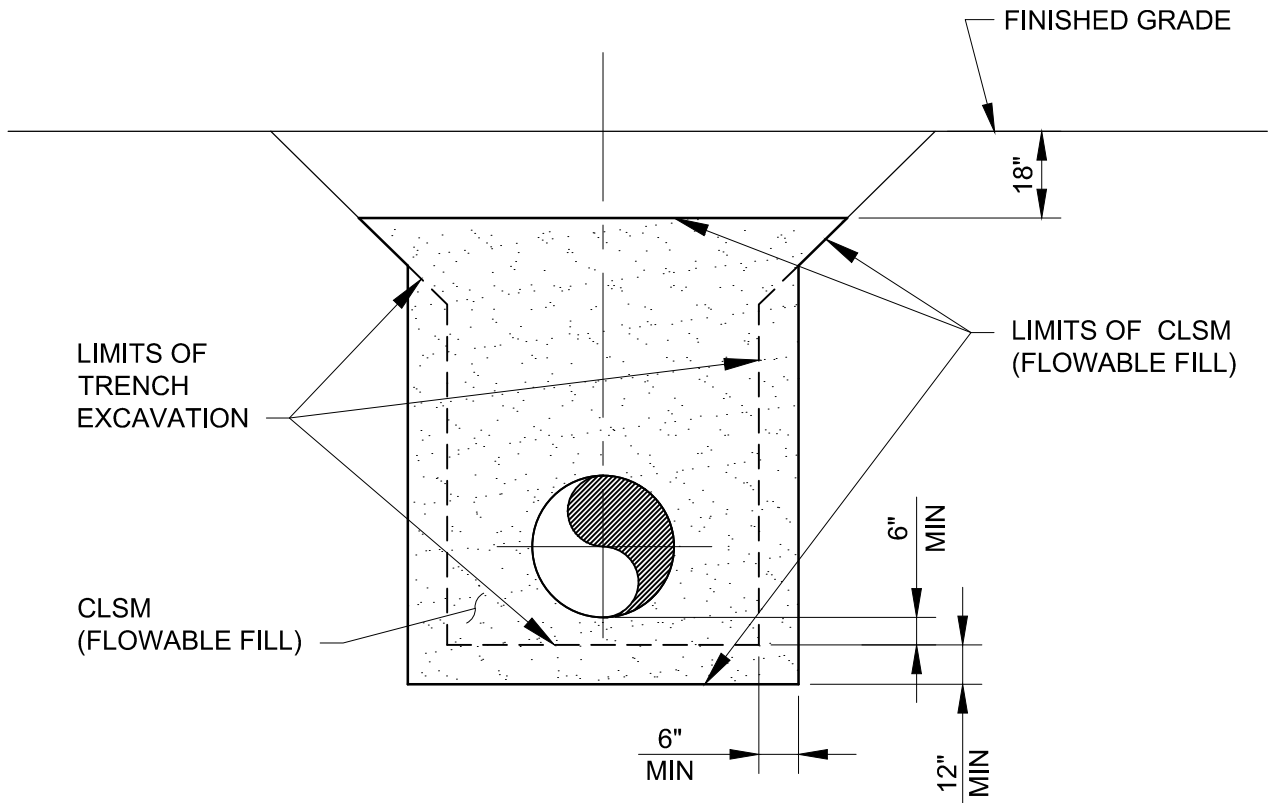
NOTES:

1. **TRENCH ZONE**
 WATER MAIN, FIRE LINE, AND APPURTENANCES:
 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 APPURTENANCES:
 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 APPURTENANCES:
 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

 PARK CITY MUNICIPAL CORPORATION WATER	DATE	WATER TRENCH BEDDING AND BACKFILL	STD. PLAN
	6/2019		580
	REV.		
	1		



PLAN
NTS



SECTION
NTS

NOTES:

1. CLSM - CONTROLLED LOW STRENGTH MATERIAL, DESIGN MIX 100-150 PSI



PARK CITY MUNICIPAL CORPORATION
WATER

DATE

3/2014

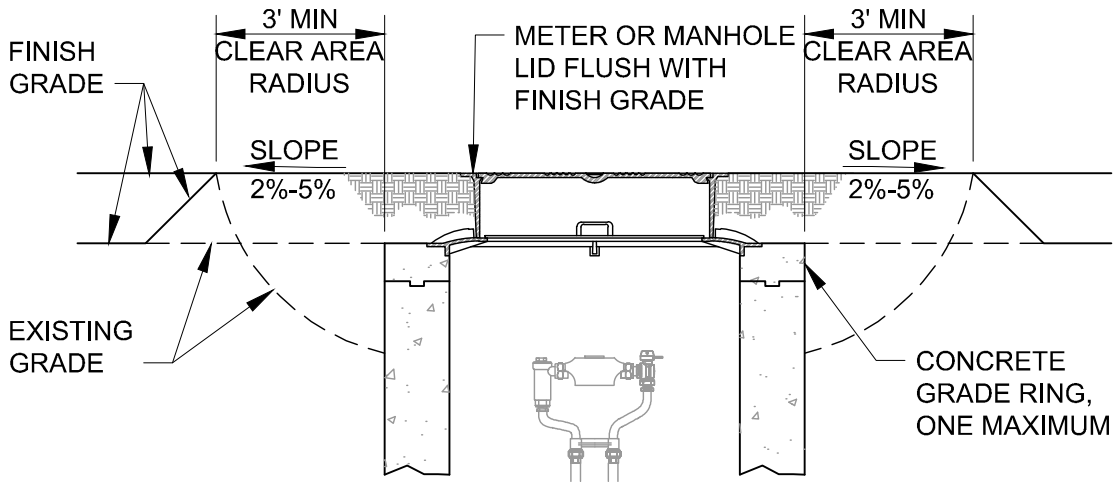
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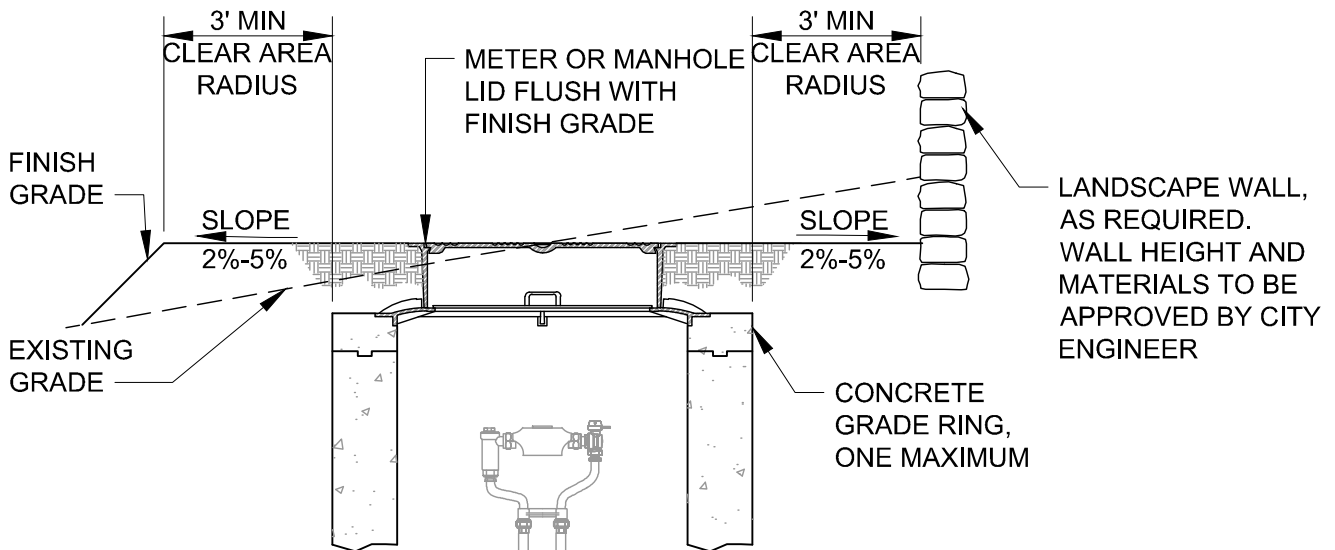
**WATER TRENCH
CUT-OFF WALL**

STD. PLAN

581



LOW/HIGH GRADE ADJUSTMENT

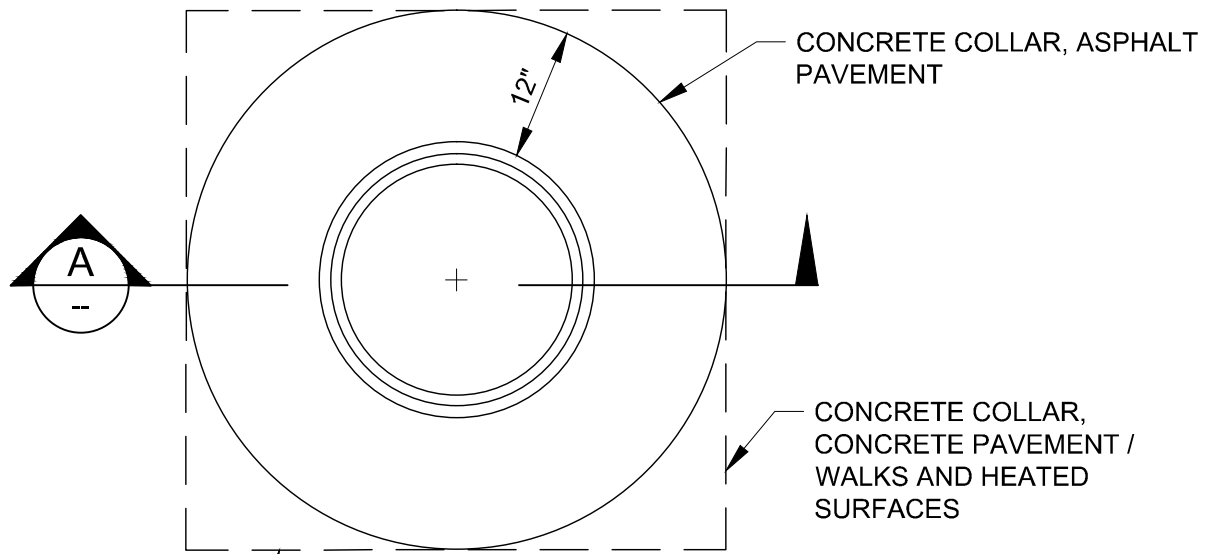


SLOPE GRADE ADJUSTMENT

NOTES:

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.

 PARK CITY MUNICIPAL CORPORATION WATER	DATE	METER VAULT AND WATER MANHOLE GRADING LANDSCAPE AREAS	STD. PLAN
	3/2014		592
	REV.		
	0		

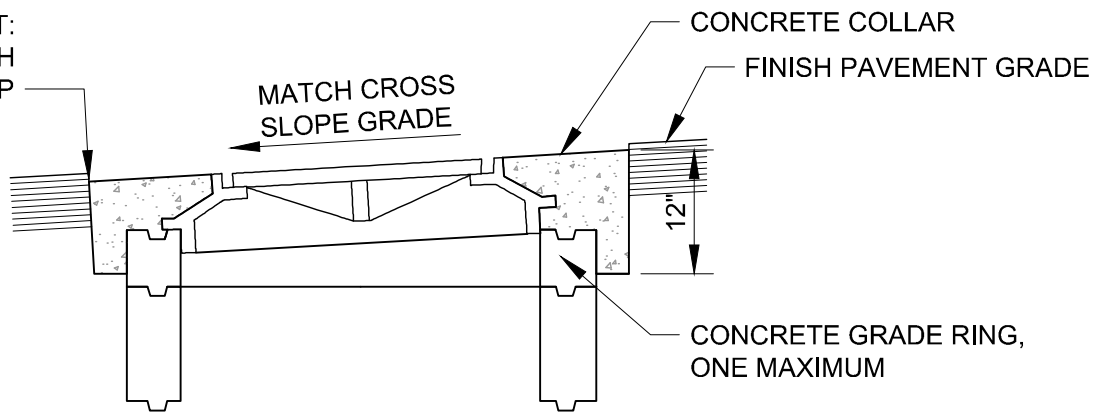


PLAN

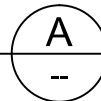
PROVIDE HEATING SYSTEM DISCONNECT AT COLLAR LIMITS. 24" COLLAR REQUIRED FOR 4' AND 5' MANHOLES AND VAULTS

ASPHALT PAVEMENT:
COLLAR SET ¼" MIN. TO ½" MAX. BELOW PAVEMENT LIP ALL AROUND.

CONCRETE PAVEMENT:
SET COLLAR FLUSH WITH PAVEMENT LIP



SECTION
NTS



PARK CITY MUNICIPAL CORPORATION
WATER

DATE

3/2014

REV.

0

**METER VAULT AND
WATER MANHOLE COLLAR
PAVEMENT AREAS**

STD. PLAN

593

1 WATER SERVICE LINE FLOW CHART

SYSTEM PRESSURE (PSI)	2 MIN. SYSTEM RESIDUAL FIRE FLOW PRESSURE (PSI)	AVAILABLE PRESSURE DROP (PSI)	SERVICE SIZE (INCH)							
			0.75		1		1.5		2	
			AVAILABLE FLOW WITHOUT METER (GPM)	* RATED FLOW THROUGH METER (GPM)	AVAILABLE FLOW WITHOUT METER (GPM)	* RATED FLOW THROUGH METER (GPM)	AVAILABLE FLOW WITHOUT METER (GPM)	* RATED FLOW THROUGH METER (GPM)	AVAILABLE FLOW WITHOUT METER (GPM)	* RATED FLOW THROUGH METER (GPM)
150	20	130	53	30	113	50	328	100	700	160
145	20	125	52	30	111	50	322	100	686	160
140	20	120	51	30	108	50	315	100	671	160
135	20	115	50	30	106	50	307	100	655	160
130	20	110	48	30	103	50	300	100	640	160
125	20	105	47	30	101	50	293	100	624	160
120	20	100	46	30	98	50	285	100	608	160
115	20	95	45	30	95	50	277	100	591	160
110	20	90	43	30	93	50	269	100	574	160
105	20	85	42	30	90	50	261	100	557	160
100	20	80	41	30	87	50	253	100	539	160
95	20	75	39	30	84	50	244	100	520	160
90	20	70	38	30	81	50	235	100	501	160
85	20	65	36	30	78	50	226	100	482	160
80	20	60	35	30	74	50	216	100	461	160
75	20	55	33	30	71	50	206	100	440	160
70	20	50	32	28	67	50	196	100	418	160
65	20	45	30	26	64	50	185	100	395	160
60	20	40	28	24	60	50	174	100	370	160
55	20	35	26	23	56	48	162	100	345	160
50	20	30	24	21	51	44	149	100	317	160
45	20	25	22	19	46	40	135	100	287	160
40	20	20	19	17	41	36	119	88	255	158
35	20	15	16	14	35	30	102	76	218	135
30	20	10	13	12	28	24	82	62	175	110
25	20	5	9	8	19	17	56	43	120	77
20	20	0	0	0	0	0	0	0	0	0

NOTES:

- REFER TO STD. PLAN 594.2 FOR NOTES AND REFERENCES.

 PARK CITY MUNICIPAL CORPORATION WATER	DATE	<h2 style="margin: 0;">WATER SERVICE LINE FLOW CHART</h2>	STD. PLAN
	4/2014		<h1 style="margin: 0;">594.1</h1>
	REV.		
	0		

* 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:

$$P_d = \frac{4.52 * L * Q^{1.85}}{C^{1.85} * d^{4.87}}$$

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)

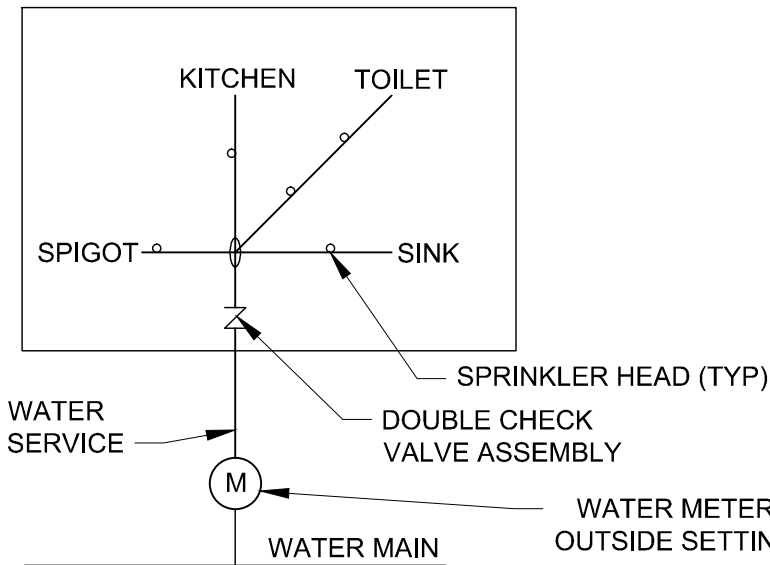
C = HAZEN WILLIAMS COEFFICIENT OF FRICTION

NOTES:

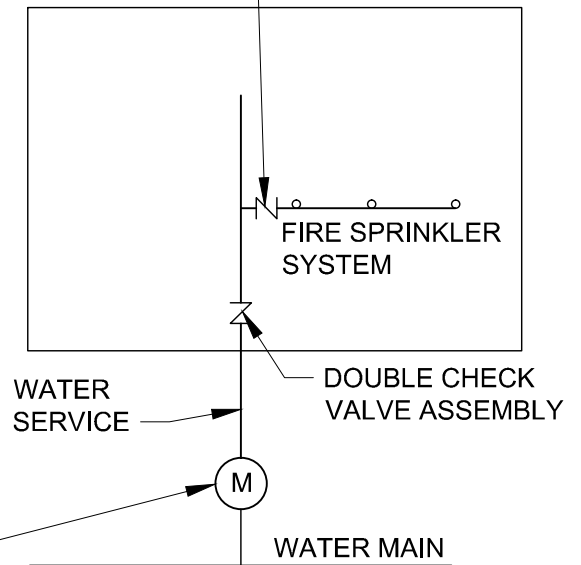
1. THIS TABLE IS FOR REFERENCE PURPOSES ONLY AND REPRESENTS MAXIMUM ANTICIPATED FLOW TO THE POINT OF CONNECTION (40 FOOT MAXIMUM LENGTH) WITHOUT ADDITIONAL VALVES AND PIPING. HOMEOWNERS, ARCHITECTS, ENGINEERS, FIRE SPRINKLER DESIGNERS, ETC., ARE RESPONSIBLE TO VERIFY EXISTING WATER SYSTEM PRESSURES PRIOR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

 PARK CITY MUNICIPAL CORPORATION WATER	DATE	WATER SERVICE LINE FLOW CHART	STD. PLAN
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DOUBLE CHECK VALVE OR REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER (SEE NOTES 2 AND 3)



OPTION 1
MULTI-PURPOSE PIPING SYSTEM



OPTION 2
BRANCHED

NOTES:

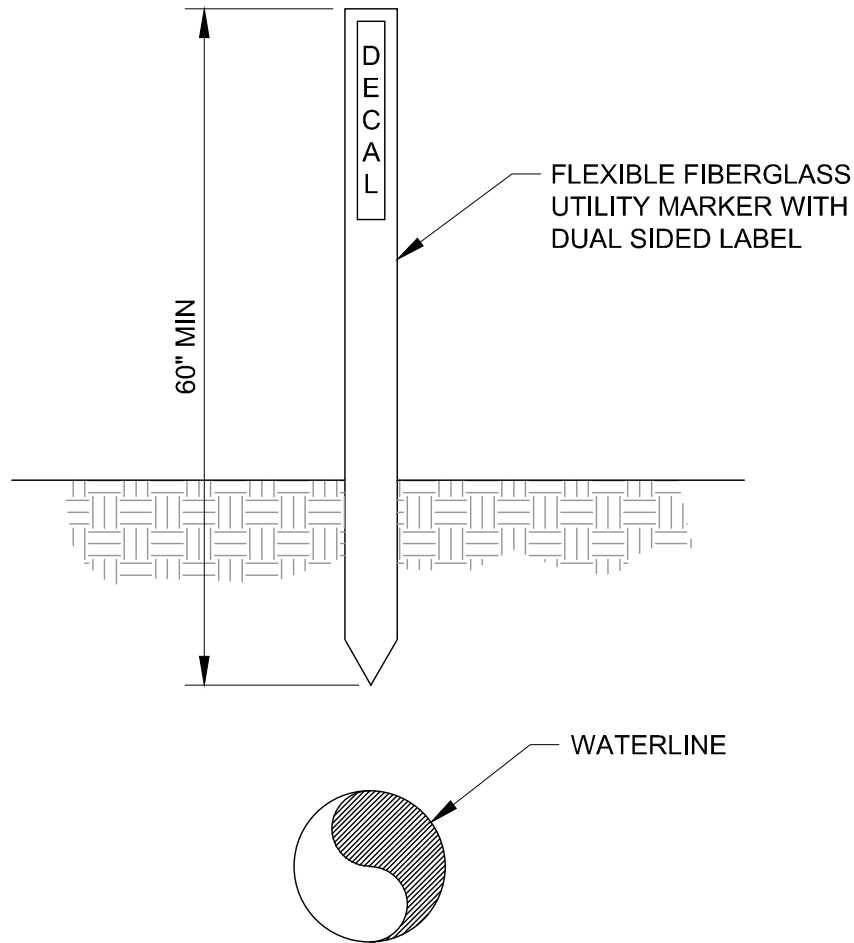
1. MULTI-PURPOSE RESIDENTIAL FIRE SPRINKLER PROTECTION PLUMBING SYSTEM SHALL MEET NFPA 13D REQUIREMENTS AND PARK CITY BUILDING DEPARTMENT AND FIRE MARSHAL APPROVAL. OPTION SHALL BE APPROVED BY THE PARK CITY BUILDING DEPARTMENT, CITY ENGINEER, AND FIRE MARSHAL PRIOR TO SYSTEM DESIGN.
2. DESIGN AND CONSTRUCTION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

 PARK CITY MUNICIPAL CORPORATION WATER	DATE	NFPA 13D RESIDENTIAL SPRINKLER SERVICES	STD. PLAN
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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](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_CMMMER_AVAIL.PDF](http://www.drinkingwater.utah.gov/documents/compliance/backflow_technicians_cmmmer_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.

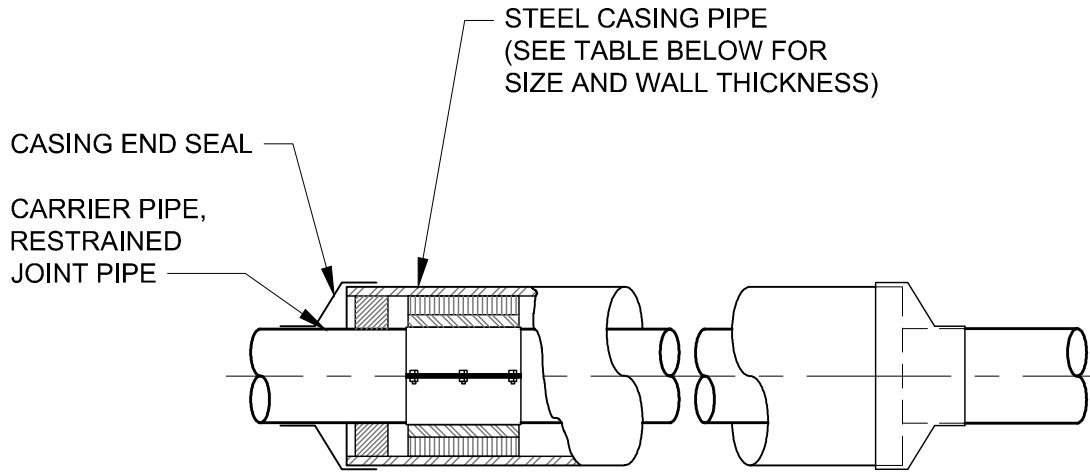
 PARK CITY MUNICIPAL CORPORATION WATER	DATE	NFPA 13D RESIDENTIAL FIRE SPRINKLER LINES	STD. PLAN
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	REV.		
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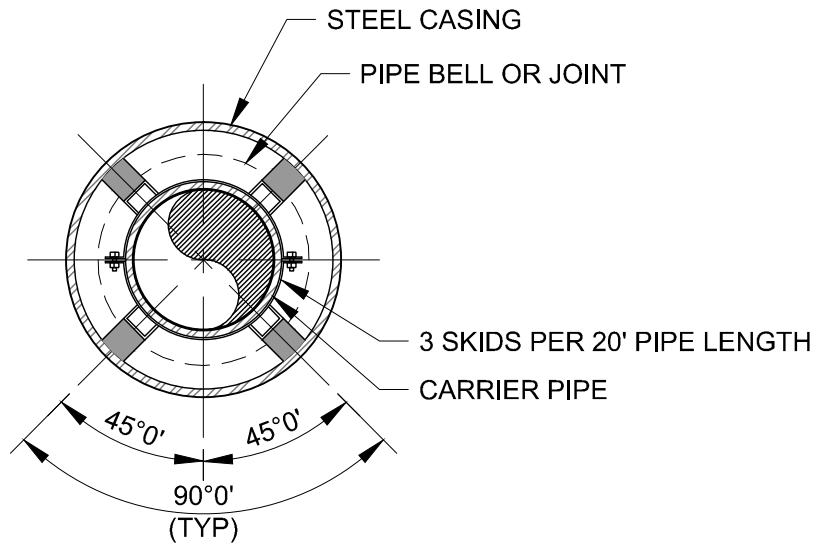
NOTES:

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"

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SLED



PIPE CASING

CARRIER PIPE NOMINAL DIAMETER	CASING PIPE	
	MIN OD	MIN WALL THICKNESS
4"	12"	0.25"
6"	16"	0.3125"
8"	18"	0.3125"
12"	22"	0.375"
16"	28"	0.50"
20"	32"	0.50"



PARK CITY MUNICIPAL CORPORATION
WATER

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WATERLINE CASING

STD. PLAN

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LEGEND AND APPROVED PARTS LIST

ITEM	DESCRIPTION	ACCEPTABLE MANUFACTURER	MODELS
①	CASING END SEAL	PIPELINE SEAL AND INSULATOR, INC	MODEL "S"
②	CASING SPACER	PIPELINE SEAL AND INSULATOR, INC.	C12G-2 OR APPROVED EQUAL
③	CARRIER PIPE: DUCTILE IRON RESTRAINED JOINT (STD. PLAN 540)		

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.

 PARK CITY MUNICIPAL CORPORATION WATER	DATE	WATERLINE CASING	STD. PLAN
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PUBLIC WATER SYSTEM FIELD OBSERVATION GUIDELINES

***FOR PROJECTS WITHIN THE
PARK CITY WATER SERVICE DISTRICT***



YEAR 2014

FORWARD

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.
- 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:
$$V = (\pi d^2 / 4) (L) (7.481); \quad \text{where: } V = \text{volume (gallons)}$$
$$\pi / 4 = \text{area}$$
$$d = \text{pipe diameter (feet)}$$
$$\pi = 3.141$$
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.

HYDROSTATIC TESTING

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 _____ PROJECT # _____

CONTRACTOR _____

WATER SYSTEM SECTION _____

DISINFECTION: 703.2.12C & J

TYPE OF CHLORINE: GRANULAR INJECTION, WHERE: _____

SAMPLE LOCATION: _____

DATE TIME CHLORINE, PPM

START: _____

END: _____

RESULT: PASS FAIL INITIALS _____

DISPOSAL OF CHLORINATED WATER: _____

FLUSHING: 703.2.12A

MAIN:

LENGTH OF SECTION: _____ feet PIPE MAT'L: _____ PIPE DIAMETER: _____ inches

CITY WATER USED OTHER

FLUSH ORIFICE SIZE: _____ inches STATION: _____

ESTIMATED TO BE FLUSHED: _____ 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)



WATER SYSTEM TESTING SUMMARY REPORT (continued)

HYDROSTATIC TEST: 703.2.11

MAIN: INITIAL TEST DATE: RETEST DATE: TEST PRESSURE @ START: 30 min: 60 min: 90 min: FINISH: [] PASS [] FAIL INITIALS

COMMENTS

SERVICES:

LOTS SERVICED:

INITIAL TEST DATE: RETEST DATE: TEST PRESSURE @ START: 30 min: FINISH: [] PASS [] FAIL INITIALS

COMMENTS

HYDRANTS:

STREET & STATION: TEST DATE: @ START: 30 min.: FINISH: [] PASS [] FAIL 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: [] PASS [] FAIL INITIALS