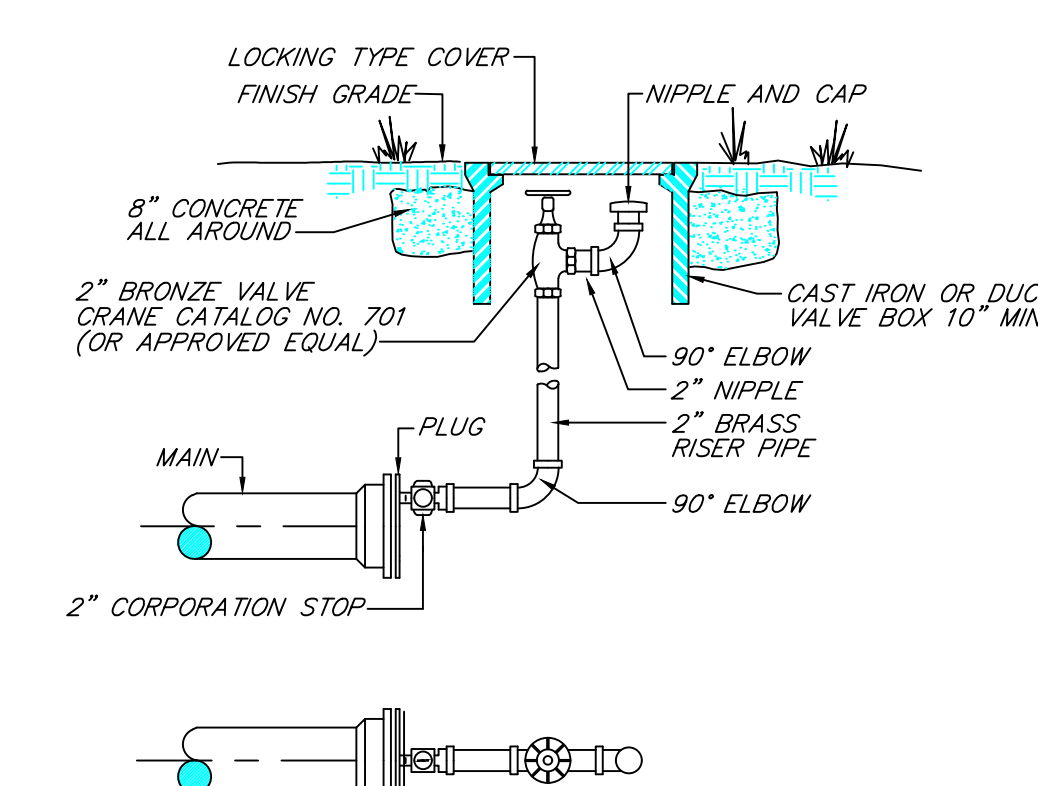


NOTES:

1. VALVES SHALL BE LOCATED SO THAT ONLY 3 VALVES ARE REQUIRED TO ISOLATE ANY 2 RESIDENTIAL OR 1 COMMERCIAL BLOCK.
2. VALVE SPACING ON WATER MAINS SHALL NOT EXCEED 1000 FEET MAX.
3. FIRE HYDRANT LOCATIONS SHALL BE IN ACCORDANCE WITH CITY FIRE DEPARTMENT REQUIREMENTS.
4. WHEN NEW ROADWAY OR FACILITY IMPROVEMENTS ARE CONSTRUCTED OVER EXISTING ASBESTOS CEMENT PIPE (ACP), THE ENGINEER OF RECORD FOR THE NEW IMPROVEMENT SHALL BE RESPONSIBLE FOR THE PROTECTION OF THE ACP AND SHALL, UNDER SEAL, CERTIFY TO THE ADEQUACY OF THE DESIGN AND TO THE CONTINUOUS USE OF THE EXISTING ACP AT SUCH ROADWAY OR FACILITY INSTALLATION.

VALVE AND FIRE HYDRANT LOCATION

SCALE: NONE

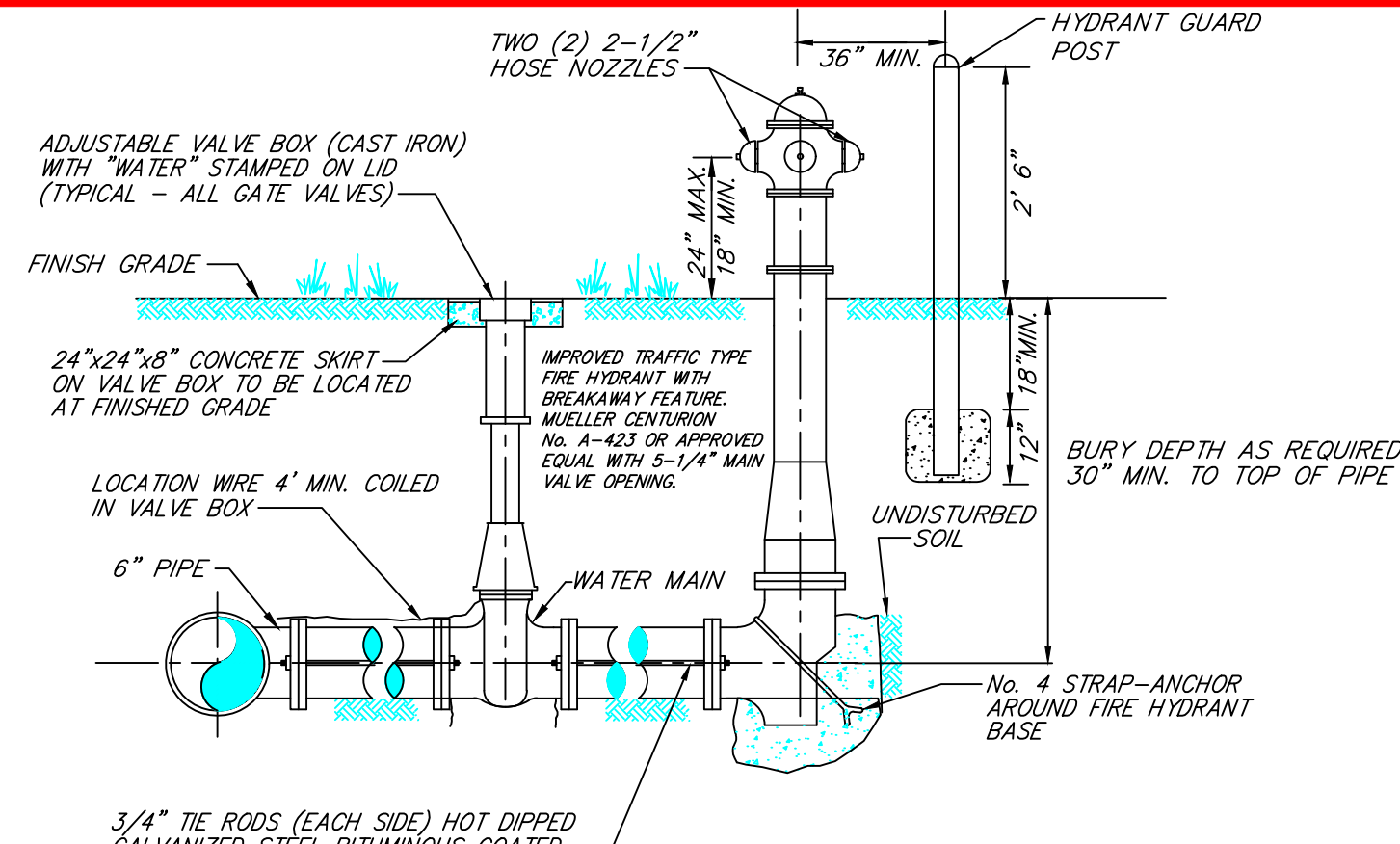


NOTES:

1. PIPE JOINT COMPOUND SHALL BE APPLIED TO MALE THREADS ONLY.
2. COAT ALL EXPOSED THREADS WITH BITUMASTIC BEFORE BACKFILLING.
3. 2" TAP IN BOTTOM OF PLUG.
4. PLYWOOD AND CONCRETE TO HAVE A HEIGHT EQUAL TO THE DIAMETER OF THE PIPE.
5. ALL FITTINGS SHALL BE BRASS.

2" TERMINAL BLOW OFF

SCALE: NONE

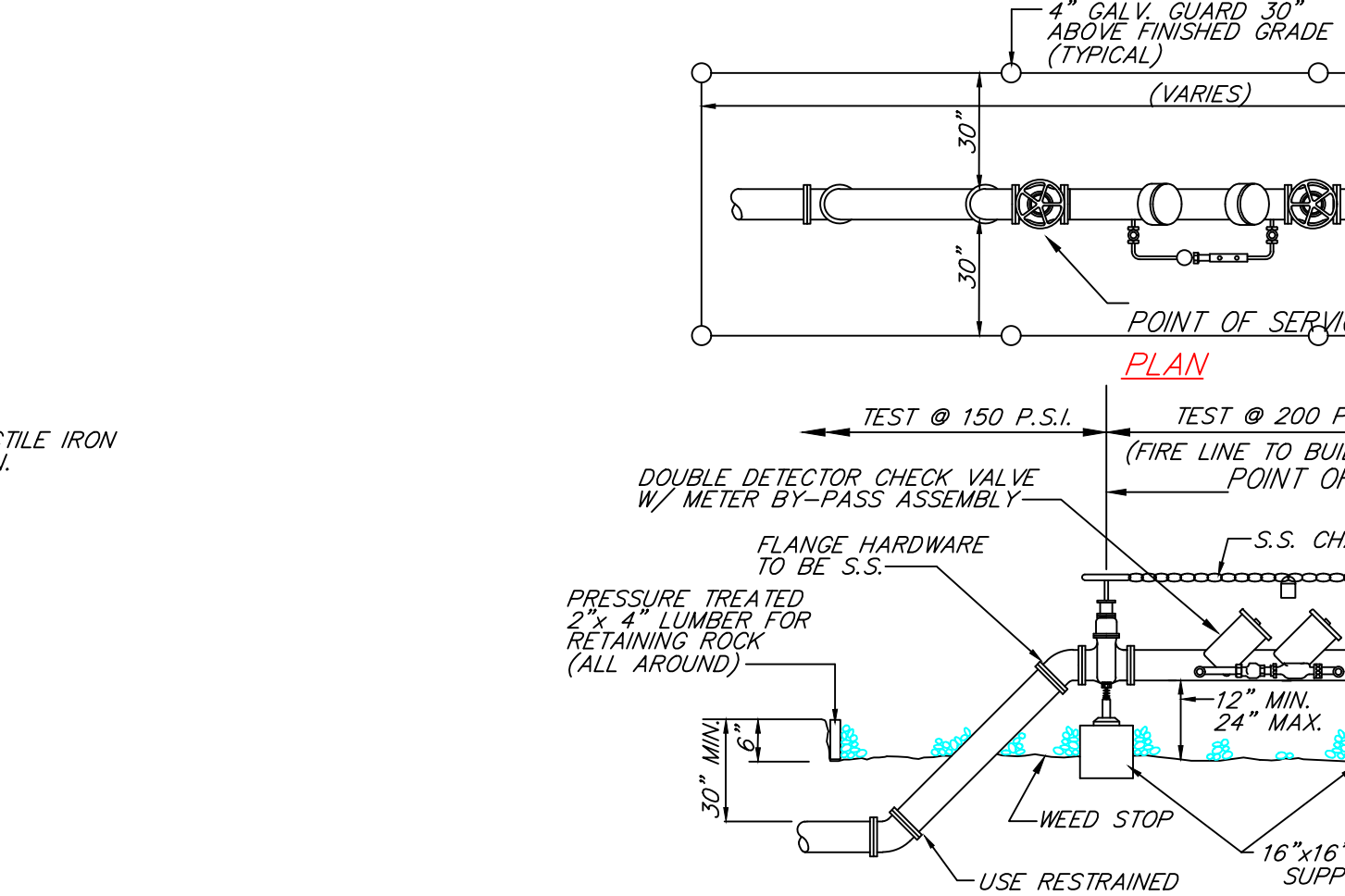


NOTE:

ALL EXTERIOR SURFACES OF THE FIRE HYDRANT MUST BE COATED WITH RUST-O-LEUM PRIMER NO. 769 DAMP-PROOF RED, THEN PAINTED RUST-O-LEUM YELLOW GUARDPOSTS TO BE INSTALLED AS REQUIRED FOR SAFETY OR AS APPROVED BY THE CITY OF SUNRISE. WHEN REQUIRED, THERE SHALL BE 4 GUARDPOSTS MAX. AND SHALL BE 4" GALV. STEEL PIPE FILLED WITH CONCRETE. THEY ARE TO HAVE A MIN. 12" X 12" CONCRETE BASE USING 3000 PSI CONCRETE.

FIRE HYDRANT INSTALLATION

SCALE: NONE

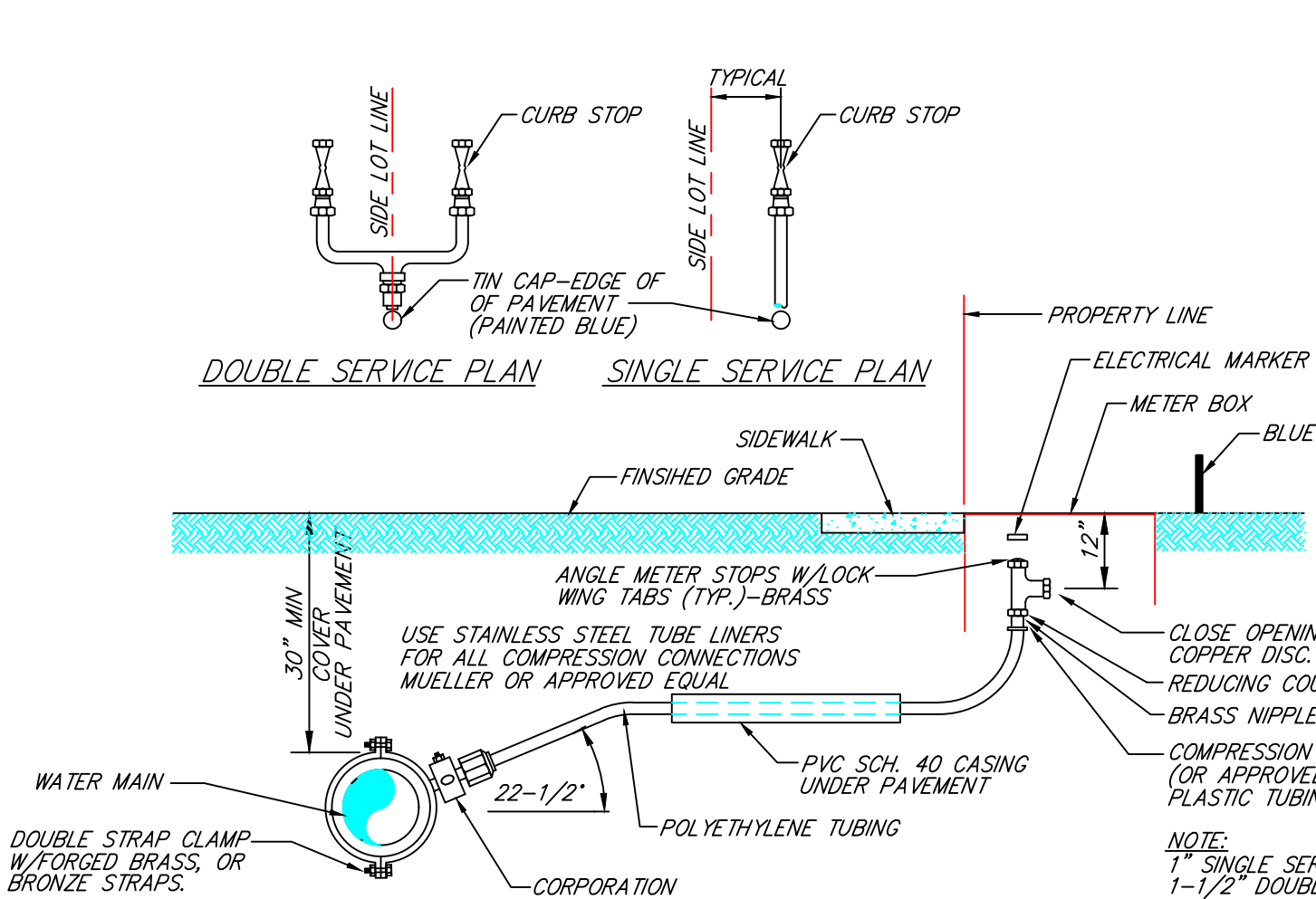


NOTES:

1. ALL PIPING SHALL BE D.I.P. CL 50/52 AS APPLICABLE TO MINIMUM STANDARDS.
2. ALL LOW FLOW METER PIPING SHALL BE BRASS OR COPPER.
3. PROTECTIVE 4" GALV. GUARD POSTS SHALL BE SPACED EVENLY APART AS SHOWN ABOVE OR IN ACCORDANCE WITH INSPECTOR'S DIRECTIONS. CHAIN SHALL BE LOOPEO THROUGH EYELETS CAST IN CONCRETE TOP.
5. PIPING AND ASSEMBLY SHALL BE PAINTED WITH LINEAR POLYURETHANE SYSTEM.
6. USE 45° BENDS WHEN WORKING AREA IS NOT LIMITED.

NON-TRAFFIC BACKFLOW PREVENTION DOUBLE CHECK VALVE

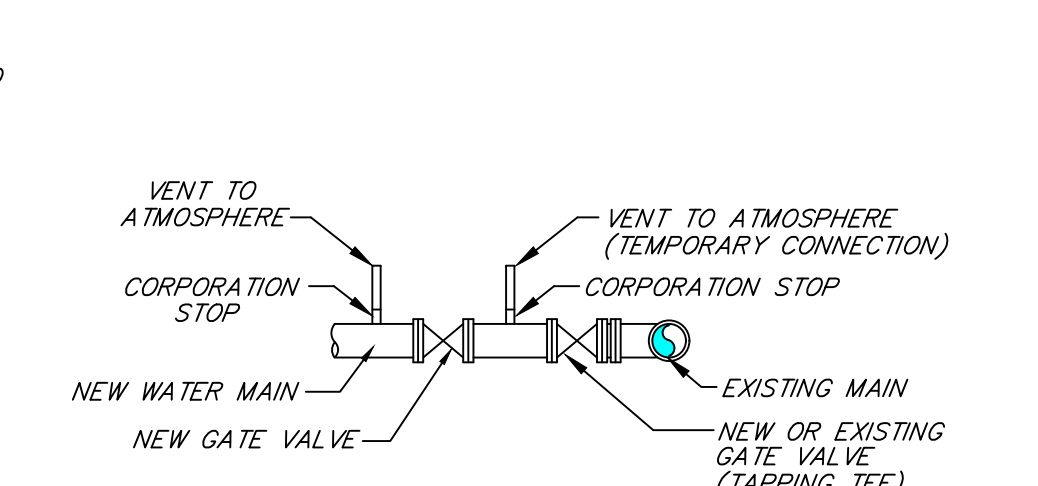
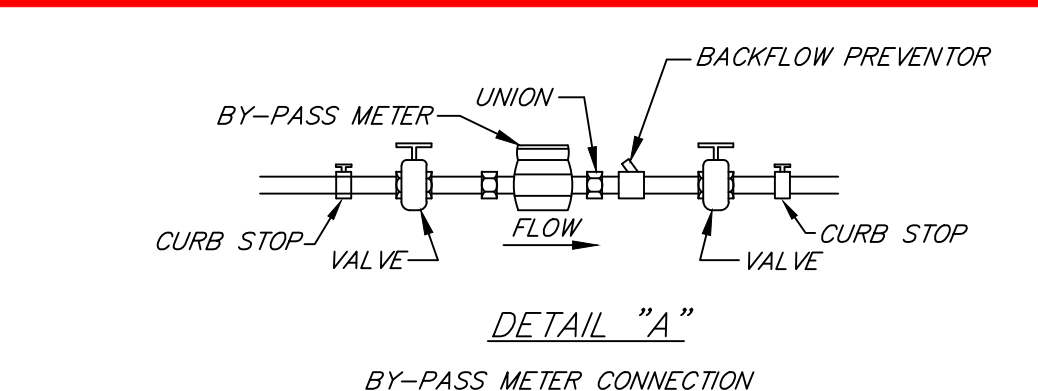
SCALE: NONE



NOTE:

FOR 1-1/2" SERVICE OR LARGER, PROVIDE FLANGED END FOR METER CONNECTION

TYPICAL WATER SERVICE

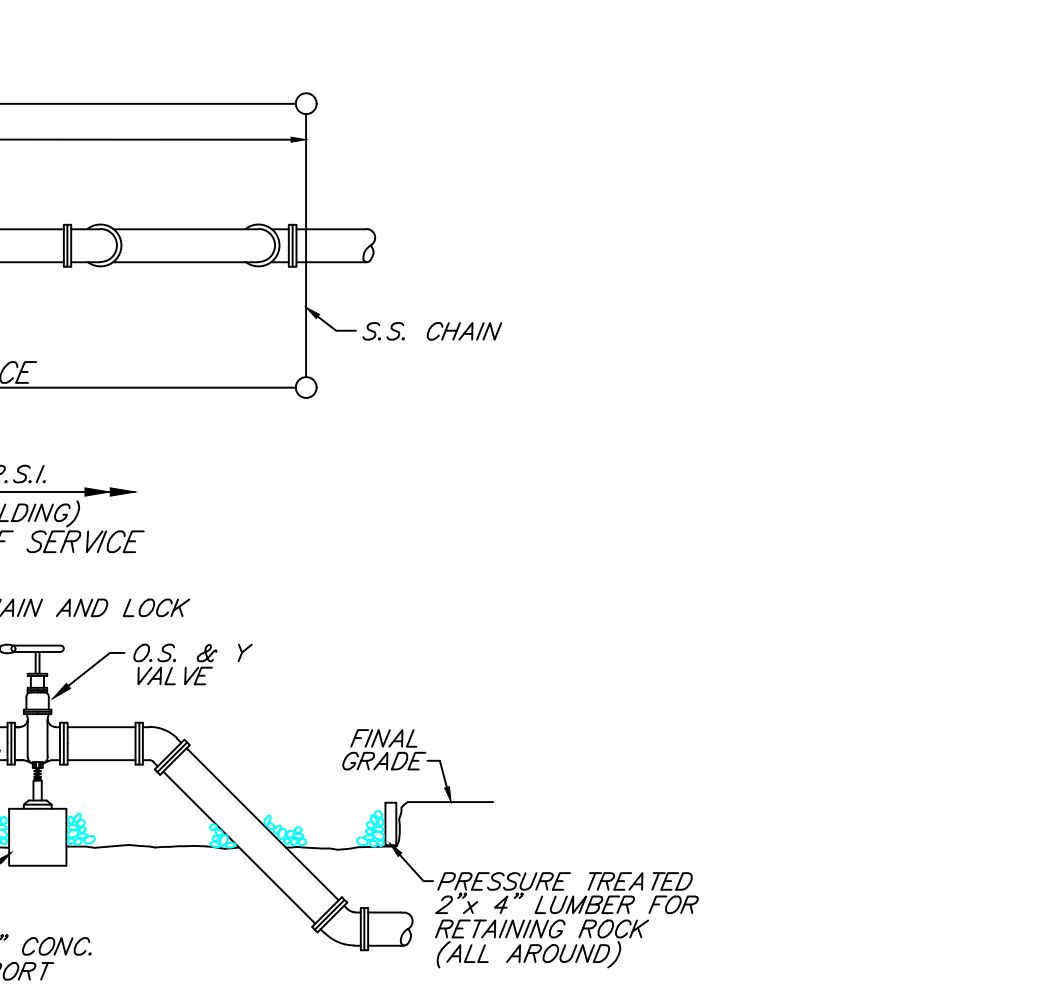


NOTES:

1. WATER MAIN TO BE PRESSURE TESTED AND STERILIZED ACCORDING TO CITY OF SUNRISE SPECIFICATIONS.
2. BACTERIOLOGICAL TESTS ARE TO BE PERFORMED BY THE CITY OF SUNRISE.
3. DO NOT REMOVE TEMPORARY CONNECTION UNTIL ALL TESTING HAS BEEN COMPLETED.
4. ALL CORPORATION STOPS SHALL BE PLUGGED AFTER BACTERIOLOGICAL TESTS ARE APPROVED

FILLING AND FLUSHING CONNECTION

SCALE: NONE

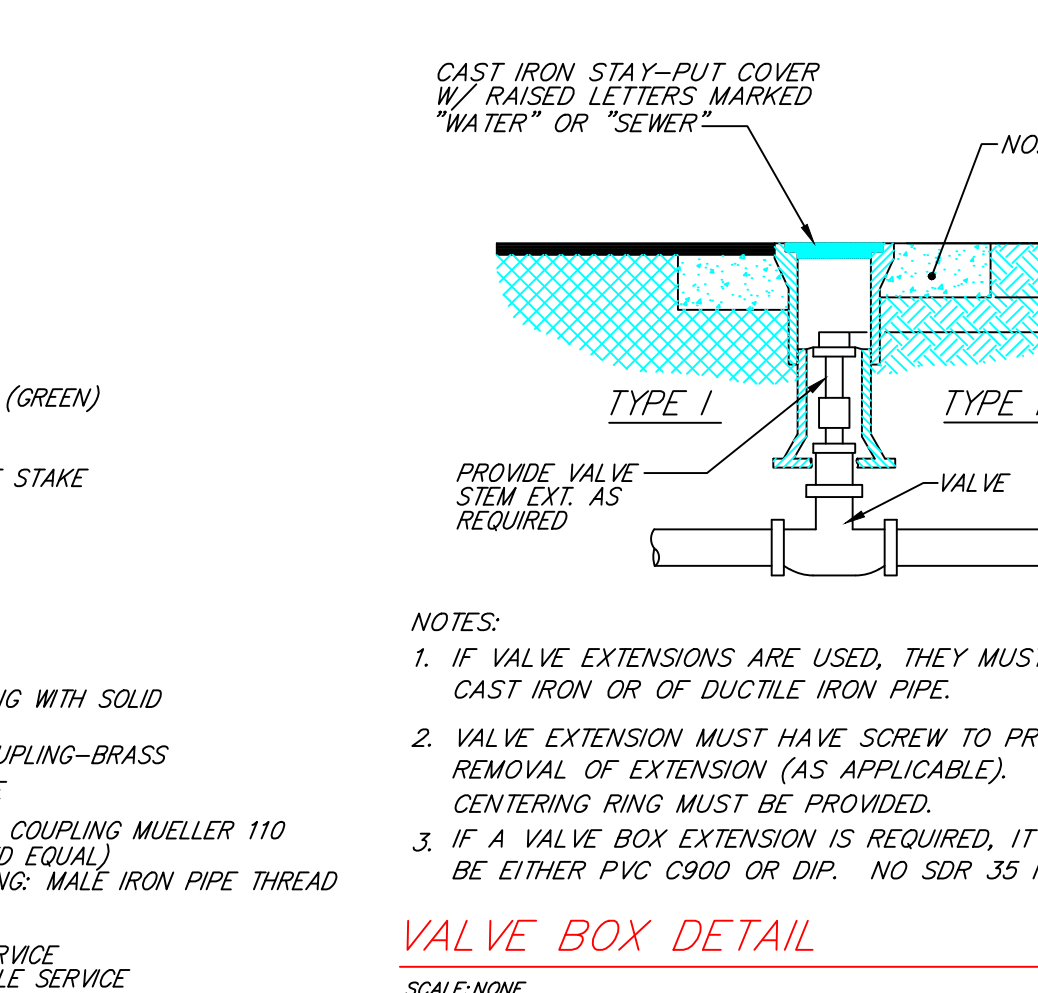


NOTES:

1. ALL PIPING SHALL BE D.I.P. CL 50/52 AS APPLICABLE TO MINIMUM STANDARDS.
2. ALL LOW FLOW METER PIPING SHALL BE BRASS OR COPPER.
3. PROTECTIVE 4" GALV. GUARD POSTS SHALL BE SPACED EVENLY APART AS SHOWN ABOVE OR IN ACCORDANCE WITH INSPECTOR'S DIRECTIONS. CHAIN SHALL BE LOOPEO THROUGH EYELETS CAST IN CONCRETE TOP.
5. PIPING AND ASSEMBLY SHALL BE PAINTED WITH LINEAR POLYURETHANE SYSTEM.
6. USE 45° BENDS WHEN WORKING AREA IS NOT LIMITED.

NON-TRAFFIC BACKFLOW PREVENTION DOUBLE CHECK VALVE

SCALE: NONE

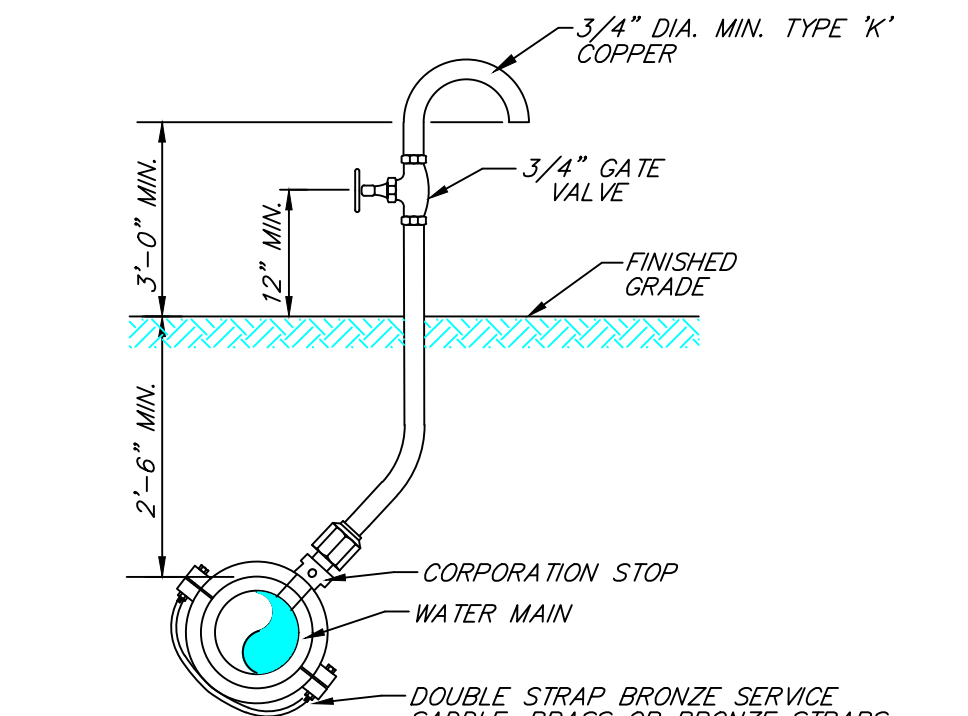


NOTE:

FOR 1-1/2" SERVICE OR LARGER, PROVIDE FLANGED END FOR METER CONNECTION

TYPICAL WATER SERVICE

A CORPORATION STOP SHALL BE INSTALLED WITH A LENGTH OF COPPER TUBING EXTENDING ABOVE THE GROUND. THE TUBING SHALL BE INSTALLED WITH A 180° BEND.

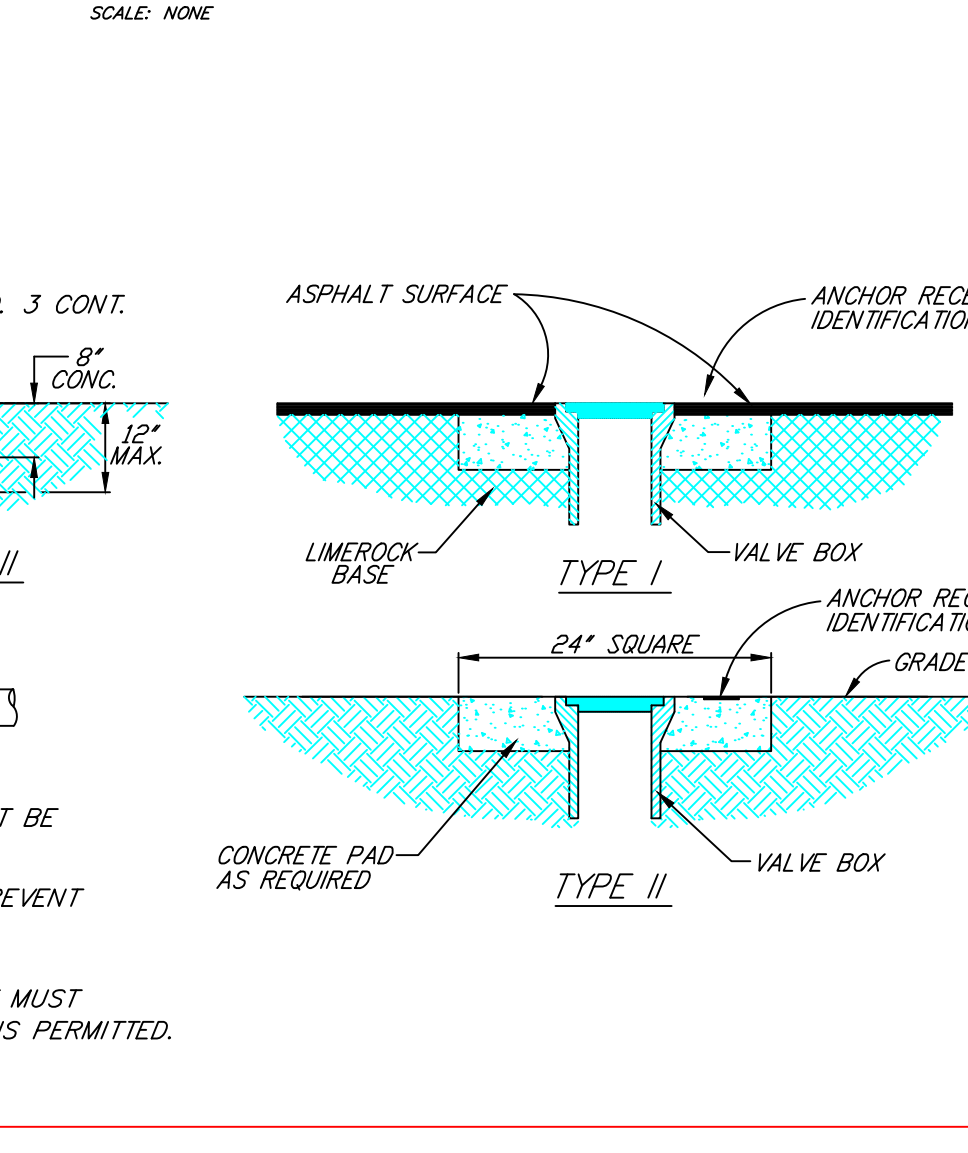


NOTE:

1. SAMPLING POINTS SHALL BE LOCATED AND LATER REMOVED AS REQUIRED BY HEALTH DEPARTMENT. CORPORATION STOP SHALL BE REMOVED AND SADDLE PLUGGED WITH A BRASS FITTING.

TYPICAL BACTERIOLOGICAL SAMPLING POINT AT INTERMEDIATE POINTS

SCALE: NONE



NOTES:

1. IF VALVE EXTENSIONS ARE USED, THEY MUST BE CAST IRON OR OF DUCTILE IRON PIPE.
2. VALVE EXTENSION MUST HAVE SCREW TO PREVENT REMOVAL OF EXTENSION (AS APPLICABLE). CENTERING RING MUST BE PROVIDED.
3. IF A VALVE BOX EXTENSION IS REQUIRED, IT MUST BE EITHER PVC C900 OR DIP. NO SDR 35 IS PERMITTED.

VALVE BOX DETAIL

SCALE: NONE

- ### WATER SYSTEM NOTES:
1. THE UTILITY PROVIDING WATER SERVICE TO THIS PROJECT IS THE CITY OF SUNRISE, FLORIDA.
 2. PVC PIPE - 4" & 6" DIAMETER MUST BE CLASS 305 - DR14. PVC PIPE - 8" TO 12" DIAMETER MUST BE CLASS 235 - DR18. ANSI/AWWA C900-07. ALL PVC PIPE SHALL BE INSTALLED WITH A MINIMUM 36" OF COVER.

DIP PIPE - 4" & 6" DIAMETER MIN. CLASS 52.
DIP PIPE - 8" AND LARGER DIAMETER MIN. CLASS 50.
ALL DIP SHALL CONFORM TO THE REQUIREMENTS OF ANSI/AWWA C151/A21.51-02 AND CEMENT MORTAR LINED AND SEAL COATED PER ANSI/AWWA C104/A21.4-03.
ALL DIP PIPE SHALL BE INSTALLED WITH A MINIMUM 30" OF COVER.
 3. ALL TRENCHING, PIPE-LAYING, BACKFILL, PRESSURE TESTING AND DISINFECTING MUST COMPLY WITH CITY OF SUNRISE SPECIFICATIONS.
 4. MINIMUM CLEARANCE BETWEEN STORM STRUCTURES AND WATER MAINS SHALL BE 2'. AND MAXIMUM DEFLECTION PER EACH JOINT SHALL BE 2" WHERE DEFLECTION IS REQUIRED.
 5. ALL FITTINGS SHALL BE CAST IRON OR DUCTILE IRON MEETING ANSI/AWWA C-110/A21.10-00 SPECIFICATIONS, WITH 250 PSI MINIMUM WORKING PRESSURE. FITTINGS MUST BE CEMENT LINED AND SEAL COATED PER ANSI/AWWA C-104/A21.4-03.
 6. ALL CONSTRUCTION TO BE MEG-A-LUG OR EQUAL RESTRAINED JOINT CONSTRUCTION TO ELIMINATE THRUST BLOCKS.
 7. GATE VALVES 4" AND LARGER SHALL BE RESILIENT SEAT AND SHALL MEET ANSI/AWWA C-509-01 SPECIFICATIONS (LATEST REVISION). VALVES SHALL BE MUELLER OR APPROVED EQUAL.
 8. MIN. VALVE SPACING SHALL BE AS PER SECTION 8.2 OF THE TEN STATES STANDARDS.
 9. FIRE HYDRANTS SHALL BE TRAFFIC BREAKAWAY TYPE MUELLER CO. CENTURION MODEL NO. A-423 OR APPROVED EQUAL AND SHALL BE INSTALLED WITH THE CENTER OF THE HOSE NOZZLE 18" ABOVE FINISHED GRADE.
 10. WHEN PVC PIPE IS USED FOR WATER MAINS, A 14-GAUGE MULTISTRAND COPPER WIRE SHALL BE INSTALLED CONTINUOUSLY ALONG THE LENGTH OF THE PIPE. THE WIRE SHALL BE BROUGHT UP AND A MINIMUM OF FOUR FEET OF EXCESS WIRE SHALL BE COILED AT EACH VALVE. A GREEN LOCATOR (MODEL NO. 1253 AS MANUFACTURED BY AUTOMATION PRODUCTS CO.) SHALL BE INSTALLED AT EVERY WATER SERVICE.
 11. ALL CONNECTIONS TO EXISTING MAINS SHALL BE MADE UNDER THE DIRECTION OF THE CITY OF SUNRISE COMMUNITY DEVELOPMENT DEPT. - ENGINEERING INSPECTOR.
 12. ALL METER SERVICE CONNECTIONS SHALL BE BRONZE FROM PLUG VALVE TO PLUG VALVE. NO GATE VALVES SHALL BE USED (2" OR LESS).
 13. THE COMPLETE WATER SYSTEM SHALL BE HYDROSTATICALLY TESTED UNDER A MINIMUM CONSTANT PRESSURE OF 150 PSI FOR A MINIMUM 2 HOURS TEST AND SHALL NOT EXCEED THE LEAKAGE REQUIREMENTS AS PER ANSI/AWWA SPECIFICATIONS OF C600-05 IN ACCORDANCE WITH THE FOLLOWING LEAKAGE FORMULA:
$$L = \frac{SD \cdot P^{1/2}}{148,000}$$

WHERE L = ALLOWABLE LEAKAGE IN GPH
D = NOMINAL PIPE DIAMETER IN INCHES
S = LENGTH OF PIPE IN FEET
P = AVERAGE TEST PRESSURE IN PSI
 14. DISINFECTION OF WATER MAINS SHALL COMPLY WITH ANSI/AWWA C-651-05 STANDARD BACTERIOLOGICAL SAMPLING POINTS ARE SHOWN ON THE PLANS. THE CITY OF SUNRISE UTILITIES DEPARTMENT WILL TAKE ALL BACTERIOLOGICAL SAMPLES (PHONE 954-888-8082). BACTERIOLOGICAL TESTS TAKEN MORE THAN 15 DAYS PRIOR TO ACCEPTANCE BY THE ENGINEER OF THE AS-BUILT DRAWINGS, SHALL BE RETAKEN AT THE CONTRACTOR'S EXPENSE. SAMPLES SHALL BE GOOD FOR 60 DAYS. BACTERIOLOGICAL REPORTS MUST BE ON FILE AT THE CITY PRIOR TO RELEASE OF THE WATER METER.
 15. THE CONTRACTOR SHALL SUPPLY AND INSTALL APPROVED BLUE REFLECTIVE MARKERS IN THE CENTER OF THE STREET DRIVING LANE ADJACENT TO ALL FIRE HYDRANTS.
 16. WATER SERVICE PIPING SHALL BE POLYETHYLENE (P.E. 3408) WATER SERVICE TUBING CONFORMING TO ASTM D-1248 AND D-2737 WITH SDR-9.
 17. PAVEMENT RESTORATION SHALL BE CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.
 18. ALL WATER MAIN PIPE COLORING SHALL COMPLY WITH THE REQUIREMENTS OF CHAPTER 62-555.320(21)(b)(3), F.A.C.

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