THE CONSOLIDATED MUTUAL WATER COMPANY
12700 WEST 27TH AVENUE, LAKEWOOD, COLORADO 80215
(303) 238-0451

SPECIFICATIONS for 3-INCH WATER SERVICE

ARRANGE FOR INSPECTION FORTY-EIGHT HOURS IN ADVANCE
(Ring, cover and meter must be picked up before scheduling an inspection.)

1. METER PIT:

The meter pit shall be a 84" (7') wide, 96" (8') long and 72" (6') high (minimum inside dimensions) pre-cast "water-tight" concrete vault manufactured with a **H-20 load rating** in accordance with AASHTO Specifications. The roof shall be flat having a 36-inch eccentric opening (the 36-inch eccentric opening shall be located so that the meter can be seen from ground level). The meter pit shall have a 6-inch thick floor (min.) with a 12-inch diameter sump hole recessed 3-inches into the floor. The meter pit shall have steps installed under the 36-inch opening in the roof. The steps shall be set 12-inches apart with the top step set 12 to 18-inches below final grade, and the bottom step set 12-inches above the floor of the vault. The meter pit shall be bedded on 8-inches of 1-1/2-inch crushed rock bedding material.

The manhole cover shall be a 36" X 24" heavy-duty iron split ring and cover. The 24-inch lid marked "WATER" with remote reader adapter, shall be purchased from The Consolidated Mutual Water Company.

NO ALUMINUM METER PIT COVERS WILL BE ALLOWED.

The meter pit vault extension rings, roof and cover, shall be jointed with a mastic sealant. The holes for piping shall be sealed both inside and outside the meter vault with a non-shrinking foam sealant Dow Chemical #157906 ("Great Stuff" big gap filler).

2. LOCATION OF METER PIT:

The standard location for the meter pit is such that the outside edge of the pit shall be set 1-foot inside the Public Right-of-Way, or inside a Company Easement. The location of the vault shall be approved by the Company prior to installation and property corners must be in place to assure proper placement. The meter pit ring and cover shall be set flush with or 1-inch above final grade for retrofit projects and 2-inches above final grade for new construction or as specified by CMWCo inspector/representative.

Meter Pits shall be located such that a CMWCo representative can access the meter at all times. If the meter pit is located in a parking lot entrance/exit or isle it must be located such that traffic control is not required or traffic is impeded while the meter pit is being accessed. In no circumstance shall a meter pit be located in a parking space or parking area. If a meter pit is located such that vehicles are prone to park near or on the meter and obstruct access, CMWCo will require the property owner at their expense to protect the meter with multiple 6-inch ductile iron bollards filled with concrete.

The 36-inch x 24-inch split ring manhole shall not be placed in any sidewalk.

The service line from the water main to the structure, including the curb stop and meter pit, shall be installed in-line and perpendicular to the water main. A minimum horizontal distance of 10 feet shall separate the water service and any sanitary sewer line. A minimum vertical clearance of 18-inches shall be provided for all perpendicular utility crossings.

THE METER PIT ASSEMBLY SHALL BE SET FLUSH WITH OR 1-INCH ABOVE FINAL GRADE AND ANY ADJUSTMENT OF THE METER PIT TO MEET FINAL GRADE WILL BE DONE BY RASING OR LOWERING THE METER PIT FOR NEW INSTALLATIONS, OR ADJUSTING WITH A SOLID CONCRETE RISER RING FOR EXISTING INSTALLATIONS

3. VALVES AND VALVE BOXES:

All valves in the meter pit shall be open left OS&Y resilient seat gate valves, flanged and have a hand wheel.

4. SERVICE LINE PIPING:

The service line from the main to the structure shall be 3-inch, class 52, cement lined ductile iron pipe. The service line from the water main to the structure shall be installed at least 4½ feet below final grade. 3-inch ductile iron pipe shall be bedded in sand or squeegee 6-inches above and below the pipe. The service piping through the meter vault shall be installed so that piping is between 18 and 36-inches above the floor while maintaining the proper burial depth. The entire service line from the main to the structure shall be bedded above and below the pipe in 6-inches of sand or squeegee. All ductile iron pipe, valves, and fittings shall be wrapped in a polyethylene encasement material. All tees and bends shall have thrust blocks according to CMWCo engineering specifications, and as directed by CMWCo inspector/representative.

The portion of the service line service between the water main and the vault shall be installed in a continuous straight line perpendicular to the tap on the water main with all joints and fittings restrained with mega lugs. Horizontal and/or vertical bends are not allowed between the main and the meter vault.

5. TAPS:

The 3-inch tap shall be connected to Company mains as determined by the Company. Company personnel upon excavation by as determined by the company will conduct all connections.

*Note: The water meter, tapping valve, tapping sleeve and a valve box shall be provided by the Company. **(Material to be paid for by Owner or Contractor)**

6. BACKFLOW PREVENTION:

Colorado State Law C.R.S. 1973 Title 25-1-114, 25-1-114.1, the Colorado Primary Drinking Water Regulations, Article 14 and Company Policy require that a Backflow Prevention Device (BPD) be installed in accordance to the State of Colorado Cross Connection Control Manual, Third Edition, without exception.

The backflow prevention device (BPD) is designed to eliminate reverse flow from the user's system back into the purveyor's supply system, thereby preventing any potential source of contamination in the public water supply.

The BPD for all residential and non-residential installations, including residential and non-residential irrigation, shall be a Reduced Pressure Backflow Prevention Device (RP) that must have University of Southern California Foundation for Cross Connection Control and Hydraulic Research (USC) approval. The RP device must be installed immediately prior to or immediately after the point of entry of the service line to the structure. **UNDER NO CIRCUMSTANCES will any connection be allowed on the service line prior to the RP device, excluding irrigation taps (See Paragraph7).** Proof of current USC certification must be provided prior to the installation of any BPD device.

The BPD must be installed no less than 12-inches from the bottom of the device to the ground and no more than 48-inches to the top of the device as measured from the ground. The Device must have 12-inches of clearance from all obstructions.

Prior to installation of the water service, the owner may be required to submit mechanical drawings to Consolidated, with sufficient detail to assure the installation of the BPD meets Company and State requirements. The drawings shall be prepared by a Professional Engineer registered in the State of Colorado, and carry the certification that the proposed installation meets all applicable Company, local and State requirements.

After flushing of the service line and installation of the BPD, the BPD(s) shall be successfully tested by a Colorado State Health Department certified BPD tester. A Consolidated Mutual Water Company Inspector must be present to witness the initial testing of the backflow prevention device. After the initial test, the State Health Department requires the owner to have the BPD tested at least once a year by a State Certified Cross Connection Control Technician, and that a copy of the successful test shall be forwarded to Consolidated Mutual Water Company on a CMWCo standard form which can be found on the CMWCo website (CMWC.net). The test results shall be forwarded to CMWCo Failure to comply may result in the discontinuance of water service.

CAUTION NOTICE TO RESIDENTIAL OWNER/PLUMBER

IN ACCORDANCE WITH APPLICABLE LAWS AND REGULATIONS, THE WATER SERVICE TO THIS STRUCTURE IS EQUIPPED WITH AN APPLICABLE BPD TO PREVENT BACKPRESSURE OR SIPHONING INTO THE COMPANY'S POTABLE WATER SYSTEM. THE OWNER/PLUMBER IS ADVISED TO INSTALL A PRESSURE RELIEF VALVE AND/OR EXPANSION TANK ON THE HOUSE SIDE OF ANY BACKFLOW PREVENTION DEVICE AND TO CHECK AND OPERATE THE HOT WATER HEATER PRESSURE RELIEF VALVE AT <u>LEAST</u> EVERY THREE (3) MONTHS TO INSURE ITS PROPER OPERATION.

7. **IRRIGATION SYSTEMS:**

IRRIGATION SYSTEM CONNECTIONS SHALL NOT BE CONNECTED WITHIN THE METER VAULT.

Irrigation connections shall be installed a minimum of 5-feet outside of the meter vault wall on the downstream side of the meter vault. The irrigation system shall have a BPD that conforms to the Backflow Prevention requirements stated in paragraph 6above.

8. **METER SETTING:**

The Consolidated Mutual Water Company standard meter setting shall be constructed with ductile iron pipe and ductile iron flanged fittings. (See attached drawing for specifications).

The meter pit piping shall be supported by four adjustable pipe stands as shown in the attached detail drawing. The meter shall be installed so that the by-pass is on the opposite side of the 36-inch opening in the roof, and set at the same elevation as the metered.

Only flanged joints are allowed inside the meter vault. NO MECHANICAL JOINTS OR FIELD FLANGES (UNI-FLANGES) WILL BE ALLOWED IN THE VAULT.

9. **INSPECTIONS:**

ALL INSPECTIONS SHALL BE ARRANGED 48 HOURS IN ADVANCE.

All water service installations from the water main to the structure shall be inspected and approved by an **AUTHORIZED COMPANY REPRESENTATIVE BEFORE BACK-FILLING.**

The service line shall be hydrostatically tested after the installation is complete by the installing contractor or owner's representative. The service line shall be hydrostatically tested at a test pressure of 150 PSIG for a period of two hours. Tests shall be witnessed by a representative of the Company. The test shall be performed and all equipment provided by the installing contractor/owner. Test equipment shall include a pump, calibrated **WATER METER** (the meter shall register in U.S. gallons and have a "leak indicator" hand), approved water source, calibrated pressure gauge, fittings and hoses. Allowable leakage* shall be 0.28 gallons per hour per 1,000 feet of 3-inch pipe, or 0.37 gallons per hour per 1,000 feet of 4-inch pipe (*Source: Ductile Iron Pipe Research Association).

SOIL AMENDMENT: Soil amendment requirements may be obtained at our website (www cmwc.net).

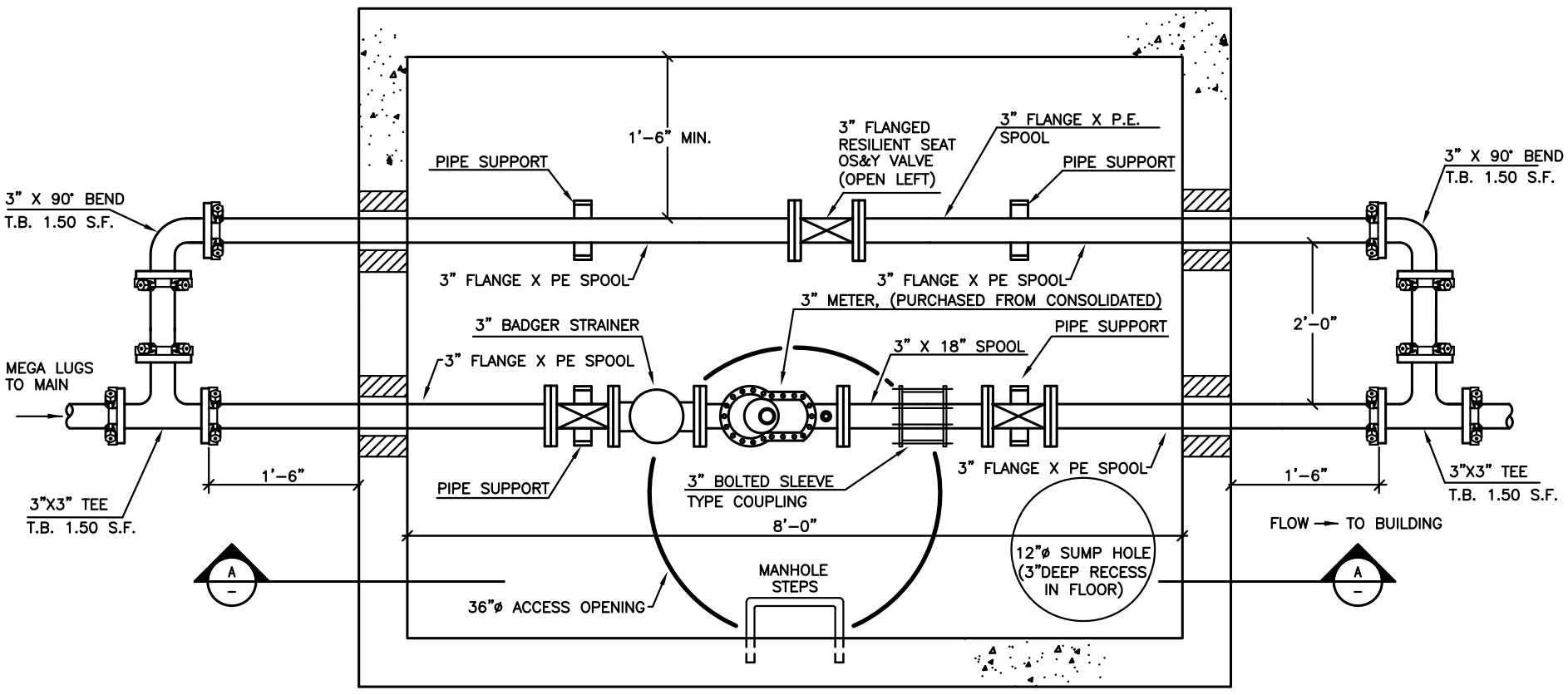
Safety fence and T-posts must be installed per specs (attached) before the meter will be *unlocked*.

Water service will not be considered complete for Certificate of Occupancy until the entire installation from the water main to the structure has passed final inspection.

The Company reserves the right to modify these specifications without notice. Any deviation from these specifications must be approved by Consolidated, in writing, prior to installation.

Note: A copy of the current specifications can be found on the company website at www.cmwc.net

3" METER VAULT PLAN



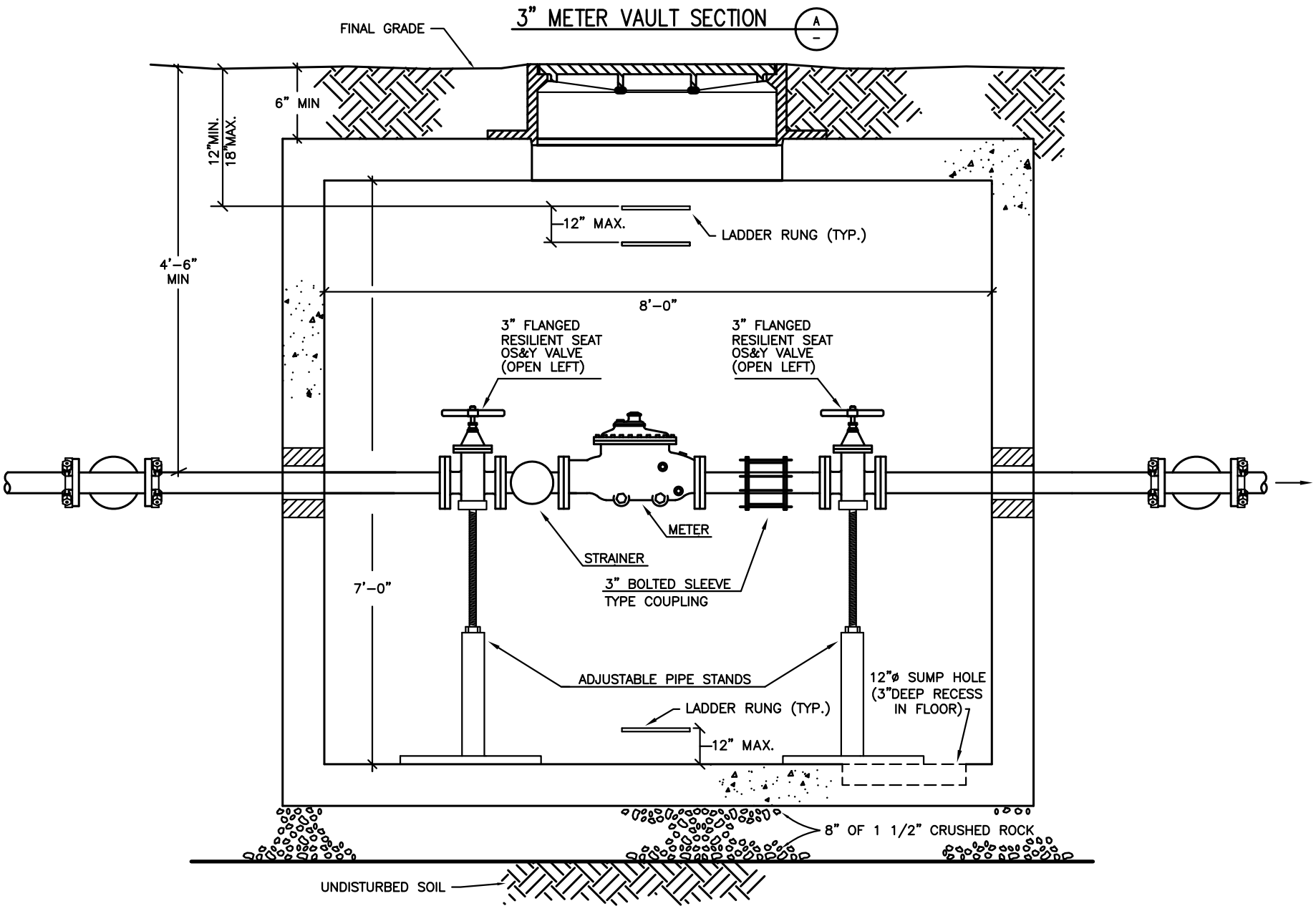
NOTE: ALL FITTINGS TO BE 200LB CLASS AND PIPE INSIDE VAULT SHALL BE CLASS 52, DI

ALL VALVES INSIDE VAULT SHALL BE FLANGED OS&Y OPEN LEFT RESILIENT SEAT.

ALL PIPE PENETRATIONS SHALL BE SEALED WITH NON-SHRIINKING FOAM SEALANT DOW CHEMICAL #157906 (GREAT STUFF BIG GAP FILLER)

NOTE: VAULT SHALL BE H20 LOAD RATED

3" METER VAULT SECTION (A)



THE CONSOLIDATED MUTUAL WATER COMPANY		
3" METER AND VAULT SPECIFICATIONS		
DRAWN BY: M.Q.	DATE: 10-27-94	SCALE: NTS
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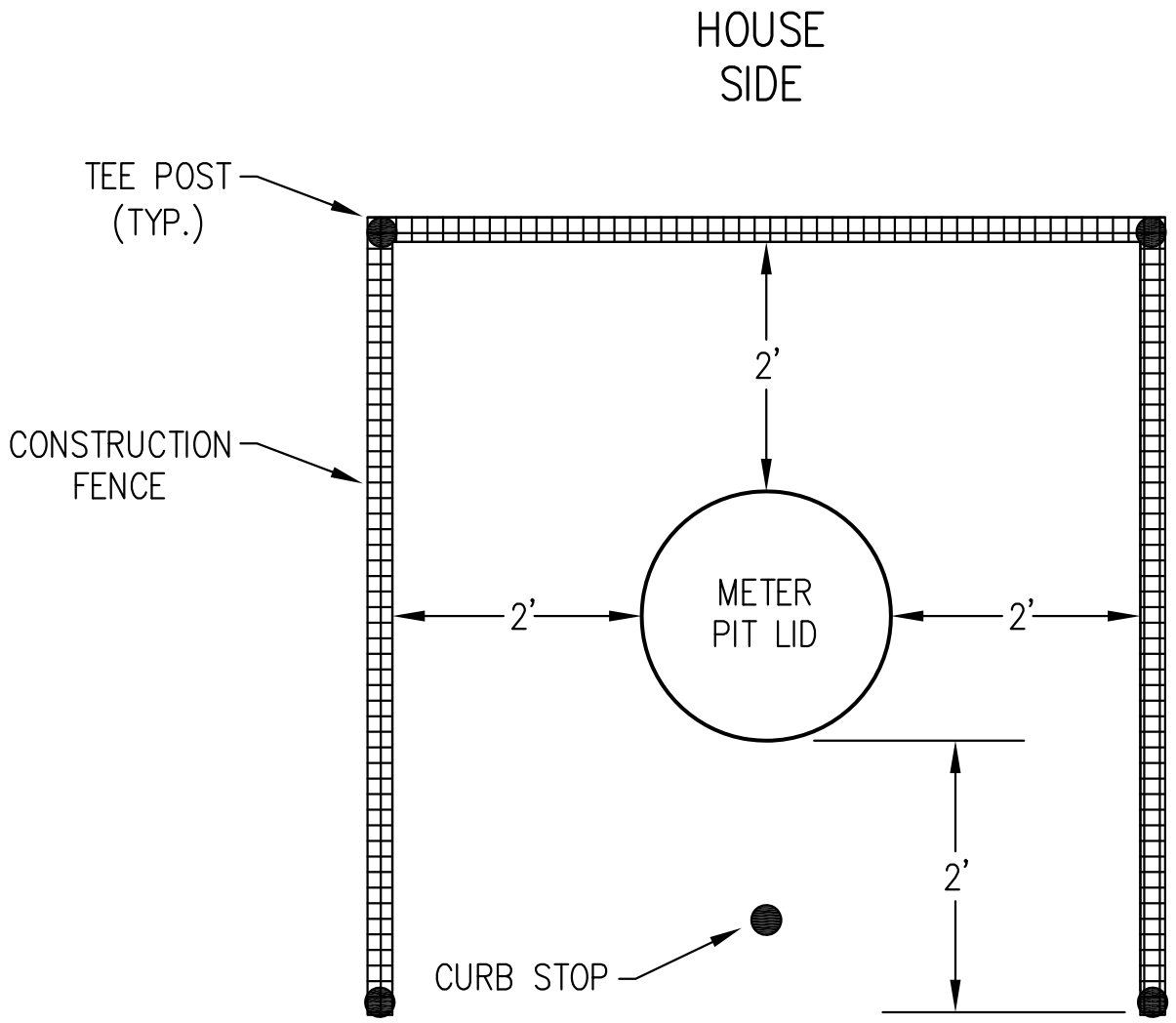

NOTES:
THE CONTRACTOR SHALL MAINTAIN PROTECTION AROUND THE NEWLY INSTALLED METER PIT.
EXAMPLE: 4-TEE POSTS W/ORANGE CONTRUCTION FENCING.

STREET SIDE MUST BE LEFT OPEN TO PROVIDE 24 HOUR ACCESS TO CMWCO.

NO DUMPSTERS, CONSTRUCTION MATERIAL,
VEHICLES OR EQUIPMENT WITHIN 5 FEET.

STREET
SIDE

T-POSTS AND SAFETY FENCE MUST BE INSTALLED PER SPECS BEFORE THE METER WILL BE UNLOCKED.

THE CONSOLIDATED MUTUAL WATER COMPANY

METER PIT INSTALLATION SPEC

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