

**THE CONSOLIDATED MUTUAL WATER COMPANY  
12700 WEST 27<sup>TH</sup> AVENUE, LAKEWOOD, COLORADO 80215  
(303) 238-0451  
RESIDENTIAL**

**SPECIFICATIONS for 3/4-INCH WATER SERVICE  
METER PIT SETTING**

**ARRANGE FOR INSPECTION FORTY-EIGHT HOURS IN ADVANCE**

**1. TAPS:**

- A CMWCo approved corporation stop, having a CC (AWWA taper thread) inlet and a compression copper outlet, shall be used to connect the tap to the water main.
- When installing “Stub-in” connections the curb stop location must be marked with a notched “V” on the curb for each service.
- The copper service line must be laid up to the curb stop valve prior to tapping the water main.

**TAPPING SADDLES SHALL BE REQUIRED ON ALL TAPS WITHIN CMWC’S SERVICE AREA**

**2. CURB STOP AND STOP BOX:**

- The curb stop box shall be a “Roadway Box”.
- The roadway box will be capable of extending to at least 60-inches in height, and have a lid marked “WATER”.
- The curb stop shall be set at a minimum distance of 12-inches and a maximum distance of 36-inches from the edge of the meter pit.
- The curb stop shall be a full port, quarter turn ball valve with compression copper connections and inverted key head (Mueller or CMWCo approved equal).

**THE STOP BOX SHALL BE SET 2-INCHES ABOVE FINAL GRADE.**

**3. METER PIT:**

The meter pit shall be a 24-inch inside diameter (I.D.) pre-cast concrete pit, consisting of one section ring 36-inches in height and one section ring 12-inches in height, and a 6-inch tall (20-inch I.D.) concrete extension ring (see attached drawing). All joints must be sealed with RAM-NEK pre-form flexible joint sealant. The total height of the meter pit assembly (including C.I. cover) shall be 54-inches.

**NO ALUMINUM METER PIT COVERS WILL BE ALLOWED.**

**4. LOCATION OF METER PIT:**

- The center of the meter pit shall be set 18-inches inside the Public Right-of-Way or CMWCo easement and a minimum of 5' from side lot lines.

- Meters may be installed on private property within 5' of the property line as a result of site limitations.
- The location of the meter pit must 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 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.
- In no circumstance shall a meter pit be in a paved area, a parking space, a driveway, or inside a fence.
- 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 METER PIT ASSEMBLY SHALL BE SET FLUSH WITH OR 2-INCHES ABOVE FINAL GRADE AND ANY ADJUSTMENT OF THE METER PIT TO MEET FINAL GRADE WILL BE DONE BY RAISING OR LOWERING THE METER PIT FOR NEW INSTALLATIONS OR ADJUSTING WITH A SOLID CONCRETE RISER RING FOR EXISTING INSTALLATIONS.**

#### **5. SERVICE LINE PIPING:**

- The service line from the main to the structure shall be 1-inch TYPE K soft copper pipe.
- 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.
- Pipe will be bedded in sand or squeegee, 6-inches above and below.
- NO couplings shall be allowed between the corporation stop and the curb stop, or between the curb stop and the lock wing stop within the meter pit.
- NO pipe joint compound shall be used on any fittings or meter connection.
- The ¾-inch copper service line shall be upsized to a 1-inch copper service line on the downstream side (house side) of the meter using a ¾" x 1" check valve.
- When the meter setting is in a tree lawn, installation of a 1-1/2-inch schedule 80 PVC sleeve is required under the walk to allow the 1-inch copper service line to be pulled through.
- A minimum cover of 4½-feet below final grade shall be maintained on all service line.

**ONLY CMWCo APPROVED COMPRESSION CONNECTIONS ARE ALLOWED ON THE SERVICE LINE BETWEEN THE WATER MAIN AND THE METER PIT, AND FROM THE METER PIT TO THE STRUCTURE - SOLDERED OR BRAZED JOINTS ARE NOT ALLOWED.**

## **6. METER PIT PIPING:**

- Piping on the street side of the meter pit shall be ¾-inch Type K copper pipe.
- The meter shall be installed 14-inches from the top of the meter to top of the meter pit cover.
- The piping downstream of the meter extending from the check valve to the structure shall be 1-inch Type K copper pipe.

No meter shall be installed until a CMWC representative witnesses the flushing of the service line from the main to the meter pit.

**ONLY MUELLER 110 CONDUCTIVE COMPRESSION FITTINGS OR CMWC APPROVED EQUAL ARE ACCEPTABLE IN THE METER PIT – SOLDERED OR BRAZED JOINTS ARE NOT ALLOWED.**

## **7. BACKFLOW PREVENTION:**

**Title 25 of the Colorado Revised Statutes Articles 1-114 & 1-114.1 does not allow anyone to install, maintain, or permit an uncontrolled cross-connection that is connected to a drinking water system that supplies water to the public. Per Colorado Primary Drinking Water Regulations, 5 CCR 1002-11 (Regulation 11), Section 11.39, a Backflow Prevention Assembly is required to be installed in accordance with the Company's Backflow Prevention Policy.**

Backflow Prevention Assemblies protect the public water supply against potential backflow and the possibility of contamination to the public water supply. All commercial, industrial, agricultural, and multi-family residential service accounts must have approved Backflow Prevention Assemblies properly installed and tested by a certified backflow tester, which is tracked and enforced by the Company's Backflow Prevention Department. Per state regulation, the Company also reserves the right to require approved backflow protection for single-family residential service accounts whenever a known hazardous cross connection exists.

The domestic containment Backflow Prevention Assembly shall be a Reduced Pressure Principle Assembly (RP), which must be lead-free and approved by the University of Southern California Foundation for Cross Connection Control and Hydraulic Research (USC) (approved model lists available upon request) unless otherwise approved by the Company's Backflow Prevention Department. The domestic containment Backflow Prevention Assembly shall be installed before all branches or tees in the water service's plumbing system. Irrigation systems also require a USC approved lead-free RP assembly if the system is connected to the potable water supply upstream from a domestic containment RP. Irrigation systems that are connected to a potable water supply downstream from an approved domestic containment RP are not *required* to have approved backflow protection by the Company, though it is still highly advised since isolation backflow prevention will ensure the occupants of the property will also continue to have access to safe drinking water.

Existing and properly installed USC approved Backflow Prevention Assemblies may receive temporary variances until the existing assembly needs extensive repair or replacement, at which time the Company would require the new backflow protection to be in accordance with the current Backflow Prevention Policy and specifications. The Company's Backflow Prevention Department reserves the right to approve or deny, in its sole discretion, any and all variance requests for the type of Backflow Prevention Assembly required.

Existing Pressure Vacuum Breakers (PVBs) must be installed no less than 12-inches from the critical level (C/L) or bottom of the assembly to the highest outlet (i.e. highest elevated sprinkler head). RPs must be installed no less than 12-inches from the surrounding ground/floor to the C/L or bottom of the assembly. RP assemblies must also have adequate drainage and maintain a proper air gap between the relief valve outlet at the bottom of the assembly and the flood level rim of any drainage.

After the flushing of the service line and installation of the required backflow preventer(s), the backflow preventer(s) must have the initial assembly testing completed by a Certified ABPA (American Backflow Prevention Association) or ASSE (American Society of Sanitary Engineering) Backflow Tester with an authorized CMWC representative present. The CDPHE and Company Policy requires the owner to have the backflow preventer(s) tested upon installation, after any repair/maintenance, and at least once a year by a Certified Backflow Tester. All required backflow testing results must be properly submitted by the testing company through the Company's online portal ([cmwc.tokaytest.com](http://cmwc.tokaytest.com)) within 5 days. The Company's Backflow Prevention Department will not accept any backflow testing results that have not been properly submitted through the online portal. Lists of approved Backflow Prevention Assembly models and backflow tester references are available upon request through the Backflow Prevention Department via phone (303-2747433) or email ([Backflow@cmwc.net](mailto:Backflow@cmwc.net)). The Consolidated Mutual Water Company is in no way liable for any damages caused by the installation, repair/maintenance, or testing of a Backflow Prevention Assembly.

**\*\*Please reference the Company's Backflow Prevention Policy for more details, or contact the Backflow Prevention Department directly with any additional questions or concerns\*\***

### **CAUTION NOTICE TO OWNER/PLUMBER**

**IN ACCORDANCE WITH APPLICABLE LAWS AND REGULATIONS, THE WATER SERVICE TO THIS STRUCTURE IS EQUIPPED WITH A CHECK VALVE AND, WHICH CREATES A CLOSED PLUMBING SYSTEM. EXCESS PRESSURE WILL NOT BE ABLE TO ESCAPE PAST THE WATER METER AND/OR A BACKFLOW PREVENTION ASSEMBLY, WHICH COULD CAUSE DAMAGES TO THE PLUMBING SYSTEM. THE OWNER/PLUMBER IS ADVISED TO INSTALL A PRESSURE RELIEF VALVE AND/OR EXPANSION TANK ON THE HOUSE SIDE OF THE SERVICE LINE AND TO CHECK THE OPERATION OF THE HOT WATER HEATER T/P RELIEF VALVE AT LEAST EVERY THREE (3) MONTHS TO ENSURE ITS PROPER OPERATION.**

## 8. **IRRIGATION SYSTEMS:**

### **IRRIGATION SYSTEM CONNECTIONS SHALL NOT BE CONNECTED WITHIN THE METER PIT**

Irrigation connections shall be installed a minimum of 5-feet outside of the meter pit wall on the “house” side of the meter pit. The irrigation system shall have a lead-free USC approved RP backflow preventer installed before any branches or tees if the system is connected to the potable water supply upstream from a domestic containment backflow preventer. Irrigation systems that are connected to the potable water supply downstream from an approved domestic containment RP are not required to have approved backflow protection by the Company, though it is still highly advised since isolation backflow protection will ensure the occupants of the property will also continue to have access to safe drinking water.

## 9. **GROUND WIRE:**

A ground wire connecting both pipes in the meter pit will be installed by the CMWC Inspector as shown on the meter drawing to conduct any stray electrical current that may exist. The ground wire must always remain connected to prevent the potential of electrical shock.

## 10. **INSPECTIONS:**

### **ALL INSPECTIONS SHALL BE ARRANGED 48 HOURS IN ADVANCE.**

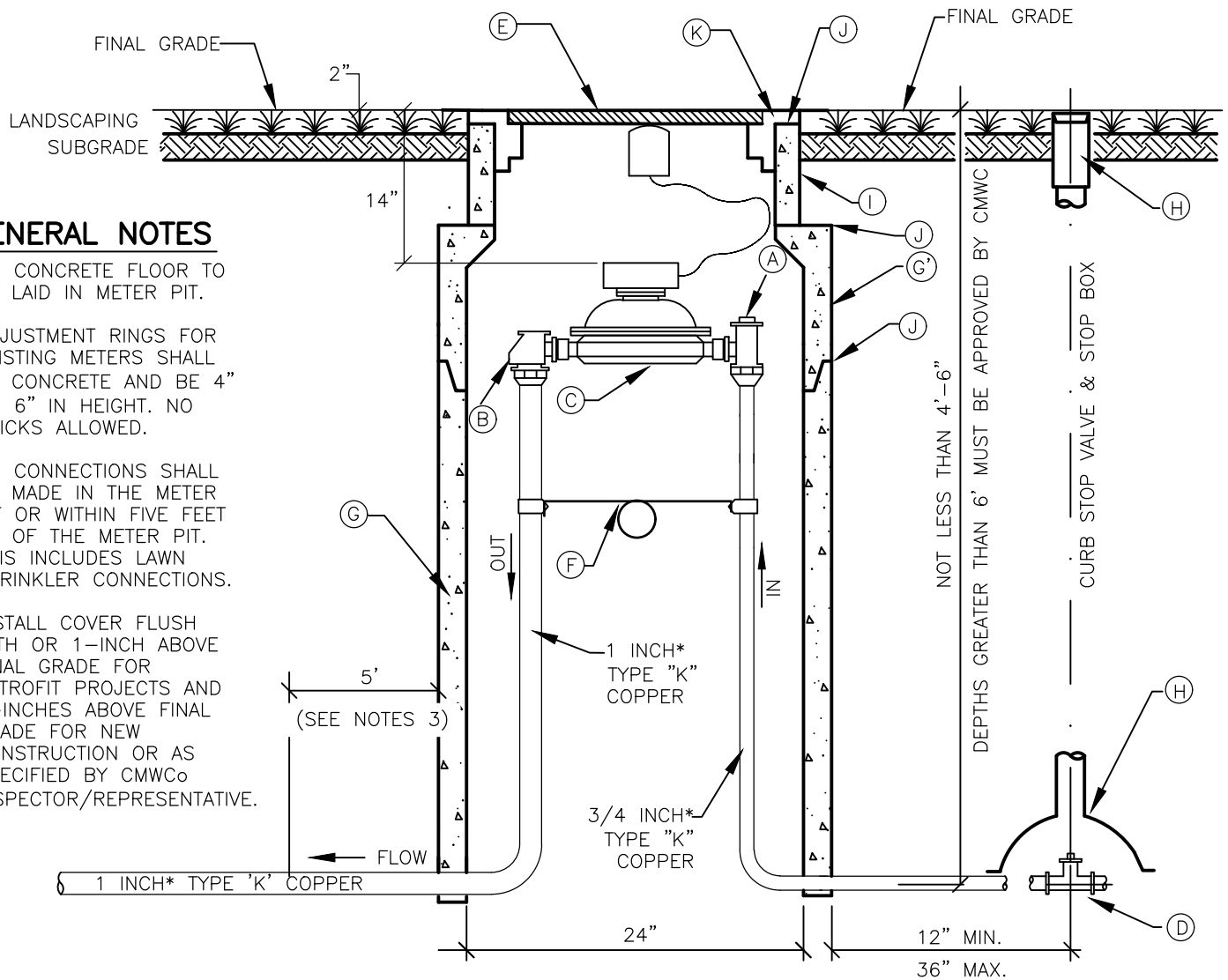
All water service installations from the water main to the structure shall be inspected and approved by an **AUTHORIZED COMPANY REPRESENTATIVE BEFORE BACKFILLING.**

SOIL AMENDMENT: Soil amendment requirements may be obtained at our website ([www.cmwc.net](http://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 and soil amendment has been completed, if applicable. Final landscaping must be installed around the meter pit/vault lid to allow verification of grade.

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.



## GENERAL NOTES

1. NO CONCRETE FLOOR TO BE LAID IN METER PIT.
2. ADJUSTMENT RINGS FOR EXISTING METERS SHALL BE CONCRETE AND BE 4" OR 6" IN HEIGHT. NO BRICKS ALLOWED.
3. NO CONNECTIONS SHALL BE MADE IN THE METER PIT OR WITHIN FIVE FEET OF OF THE METER PIT. THIS INCLUDES LAWN SPRINKLER CONNECTIONS.
4. INSTALL COVER 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.

- (A) ANGLE VALVE (WITH LOCKWING STYLE HEAD) (MUELLER H-14258 OR CMWCo APPROVED EQUAL)
- (B) ANGLE CHECK VALVE  $\frac{3}{4}$ "IN X 1" OUT (FORD OR CMWCo APPROVED EQUAL)
- (C) METER (BADGER MODEL d35 WITH BEACON TRANSMITTER OR CMWCo APPROVED EQUAL)(PROVIDED & INSTALLED BY CMWCo)
- (D) CURB STOP (MUELLER B-25209N OR CMWCo APPROVED EQUAL)
- (E) 18-INCH COMPOSIT NICOR H2O LOAD RATED LID (PROVIDED BY CMWCo)
- (F) GROUND WIRE CONNECTION (PROVIDED & INSTALLED BY CMWCo)
- (G) 24-INCH I.D. X 36-INCH CONCRETE METER PIT (ENCON #14-00011 OR CMWCo APPROVED EQUAL)
- (G) 24-INCH I.D. X 12-INCH CONCRETE METER PIT (ENCON #14-00010 OR CMWCo APPROVED EQUAL)
- (H) CURB STOP BOX (TYLER 6870 SERIES "ROADWAY BOX" TOP #3780-18, BTN 6780-27B, EXTENSION 6870-49, LID 6870 4-1/4" F/145R OR CMWCo APPROVED EQUAL)
- (I) 20" I.D. X 24" O.D. CONCRETE EXTENSION RING (4" OR 6") (ENCON #14-00001 THRU #14-00005 OR APPROVED EQUAL)
- (J) RAM-NEK
- (K) CAST IRON RING (EAST JORDAN IRON WORKS #00291211)

## NOTES:

- **COMPRESSION FITTINGS ONLY**
- **NO "PIPE DOPE", "PLUMBERS PUTTY", OR SIMILAR PRODUCT ALLOWED.**
- **ALL JOINTS TO BE SEALED WITH TEFLON TAPE ONLY.**

## THE CONSOLIDATED MUTUAL WATER COMPANY

### 3/4" METER DETAIL

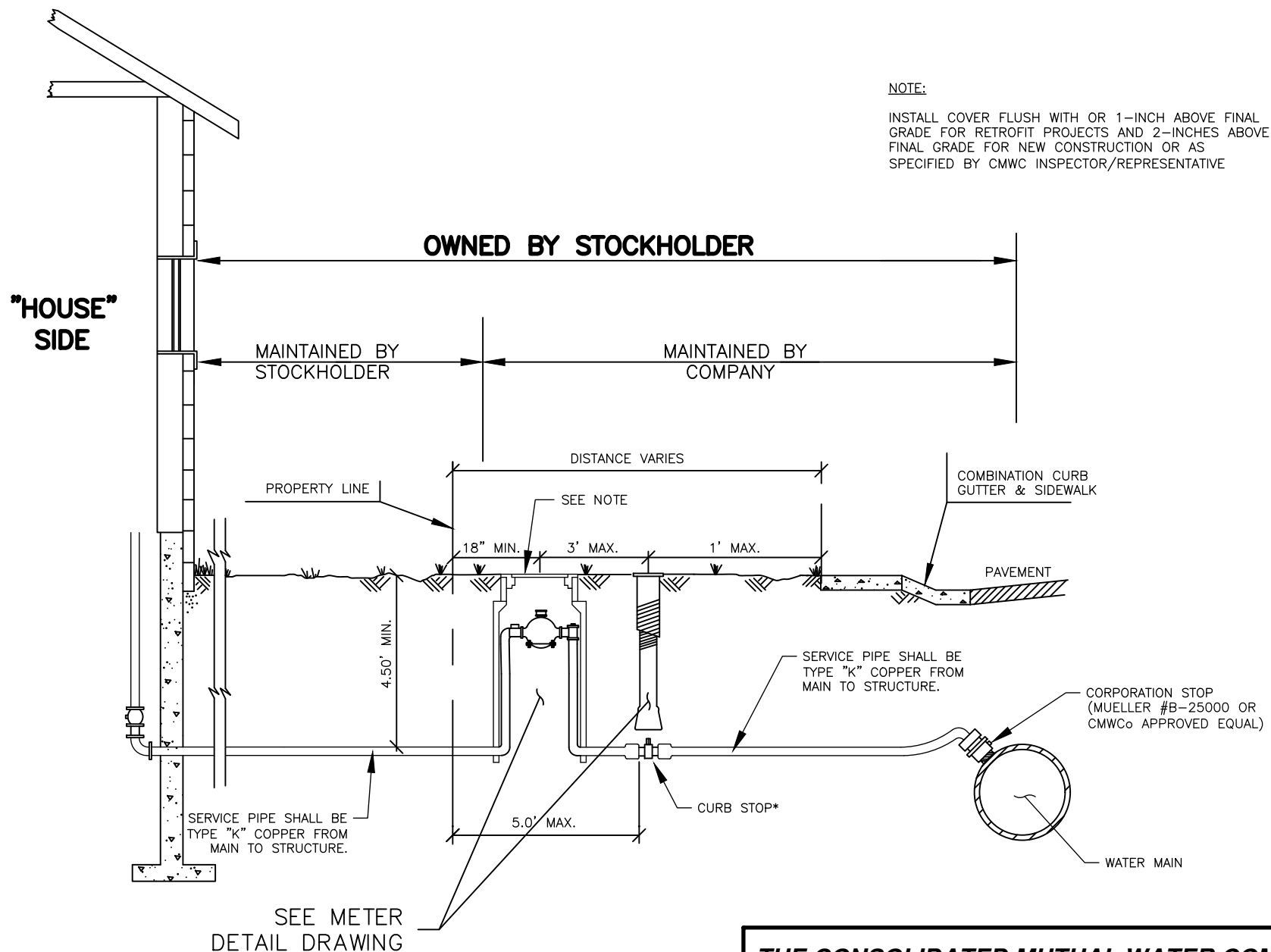
DRAWN BY: AKR

DATE: MAR. 2017

REVISED: APRIL 2022

SCALE: NTS

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**THE CONSOLIDATED MUTUAL WATER COMPANY**

**METER LOCATION DETAIL**

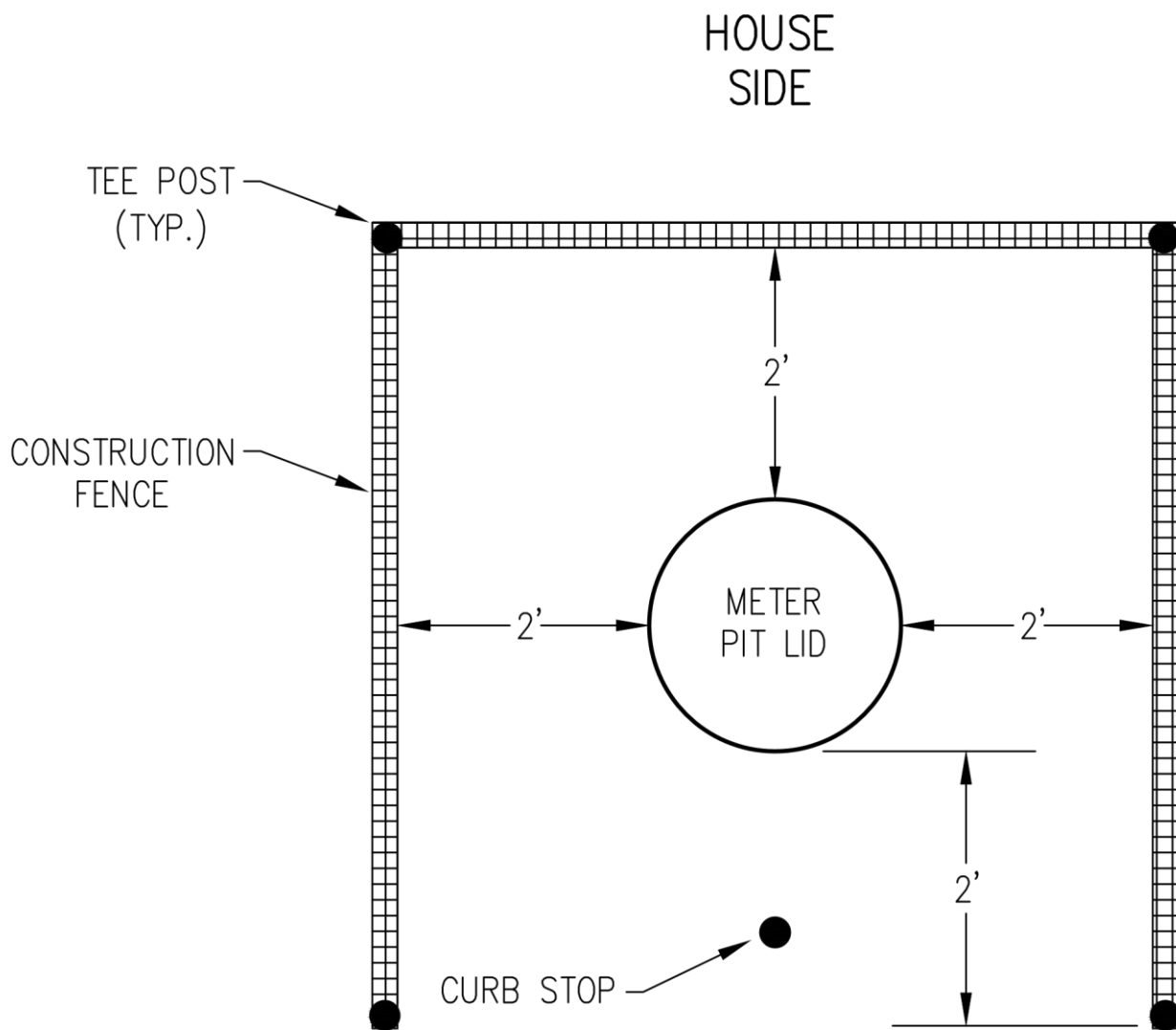
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DATE: 10/2012

REVISED: 12-7-2017

SCALE: NTS

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**NOTES:**

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

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

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

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**

DRAWN BY: SH

DATE: 10-12-10

SCALE: NTS

REVISED: 7-2012

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