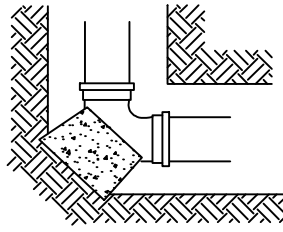
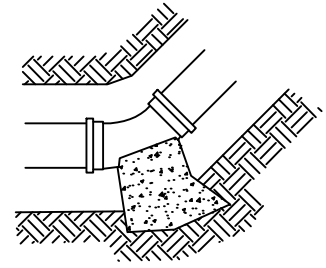


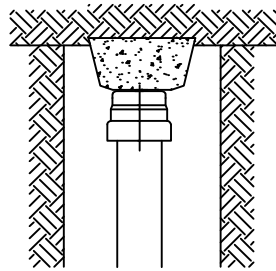
TEE



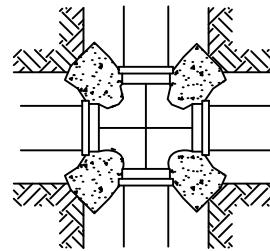
90° BEND



45°, 22½°, AND 11¼° BENDS



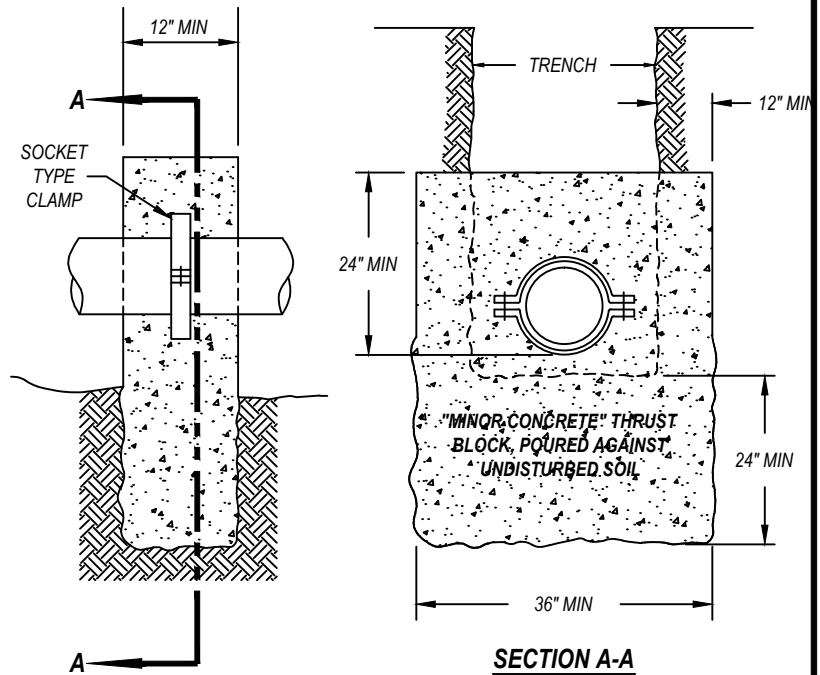
DEAD END



CROSS

NOTES

1. DETAILS ON THIS SHEET ARE FOR WATER MAINS 8" IN DIAMETER AND SMALLER. SEE W-14B FOR RESTRAINT REQUIREMENTS FOR 12" AND LARGER WATER MAINS.
2. "MINOR CONCRETE" PER SECTION 90 OF THE CALTRANS STANDARDS, WITH 3/4" AGGREGATE, SHALL BE USED FOR THRUST BLOCKS AND WINGWALLS. CONCRETE SHALL BE POURED AGAINST UNDISTURBED SOIL AND BARE PIPE.
3. FOR ADDITIONAL RESTRAINT DETAILS, SEE W-14B. FOR WATER MAIN OFFSET AND JOINT DEFLECTION DESIGN REQUIREMENTS, SEE W-15.
4. FIELD LOK GASKETS SHALL BE USED, INSTEAD OF THRUST BLOCKS, FOR RESTRAINING WATER MAINS WITH LESS THAN STANDARD COVER (PER W-12), AND WATER MAINS WITHIN STEEL CASINGS.
5. CONCRETE RESTRAINTS SHALL BE CURED FOR A MINIMUM OF 7 DAYS (OR REACH A MINIMUM 75% OF THE FINAL CURE STRENGTH) PRIOR TO INSTALLATION OF OFFSET ON EXISTING WATER FACILITIES, OR ACTIVATION OF NEW WATER FACILITIES.



**WINGWALL DETAIL FOR
BLOW-OFFS, VERTICAL, AND HORIZONTAL
OFFSETS**

CITY OF NAPA

PUBLIC WORKS DEPARTMENT

TITLE
THRUST BLOCKS AND WINGWALLS

DRAWN BY: DCF
DATE: 07/2017
SCALE: NTS
FIELD NOTES:

CHECKED BY: MJH
APPROVED BY: MJH
DRAWING NO.
W-14A