

NOTES:

1. SAND BEDDING SHALL CONFORM TO SECTIONS 200-1.5.3 AND 200-1.5.5 OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (LATEST EDITION).
2. DENSIFICATION OF BEDDING SHALL BE ACCOMPLISHED IN CONFORMANCE WITH 306-1.2.1 OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (LATEST EDITION).
3. BEDDING SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY UNDER STRUCTURES AND 90% ELSEWHERE.

ACCOMPANYING STD.'S T700 AND T116

CITY OF TORRANCE

DATE ISSUED

JAN 2011

BEDDING FOR WATER PIPE

ROBERT J. BESTE
PUBLIC WORKS DIRECTOR
R.C.E. NO. 50737

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STANDARD NO.

T 701

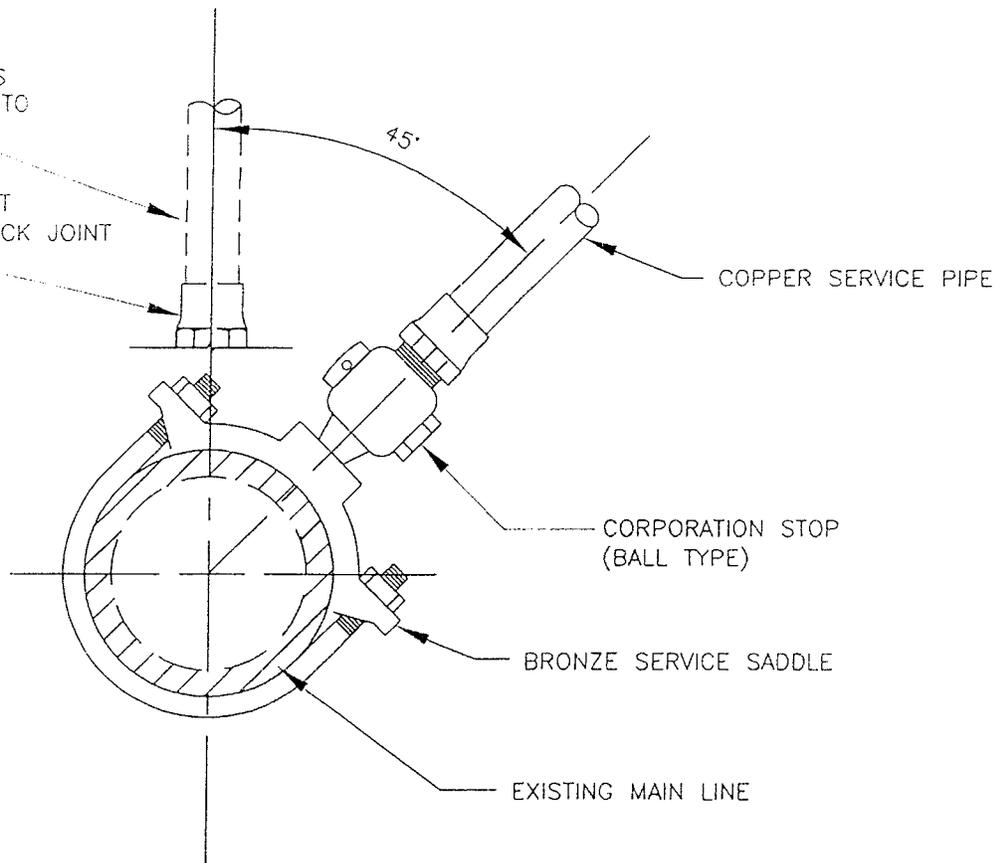
SHEET 1 OF 1

DV/EM/T701-1

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FOR MULTIPLE TAPS
ALTERNATE AT 45° TO
EACH OTHER

COPPER FLARE NUT
(SEE T703) OR PACK JOINT
(SEE T704)



NOTES:

1. MINIMUM DISTANCE BETWEEN TAPS OR CONNECTIONS SHALL BE 20 INCHES, AND A MINIMUM OF 18 INCHES FROM END OF PIPE.
2. FOR STEEL MAINS DELETE SERVICE SADDLE. A TAP NOZZLE SHALL BE WELDED TO MAIN AND AN INSULATING BUSHING SHALL BE INSTALLED BETWEEN THE TAP NOZZLE AND THE CORPORATION STOP. FOR PIPES WITH WALL THICKNESS THINNER THAN 16 GAUGE A REINFORCEMENT COLLAR PLATE OR FULL WRAP REINFORCEMENT PLATE SHALL BE INSTALLED AS DETERMINED BY THE ENGINEER.

ACCOMPANYING STD.'S T700 AND T703 OR T704.

CITY OF TORRANCE

**1" & 2" SERVICE
CONNECTION TO MAIN LINE**

STANDARD NO.

T 702

SHEET 1 OF 1

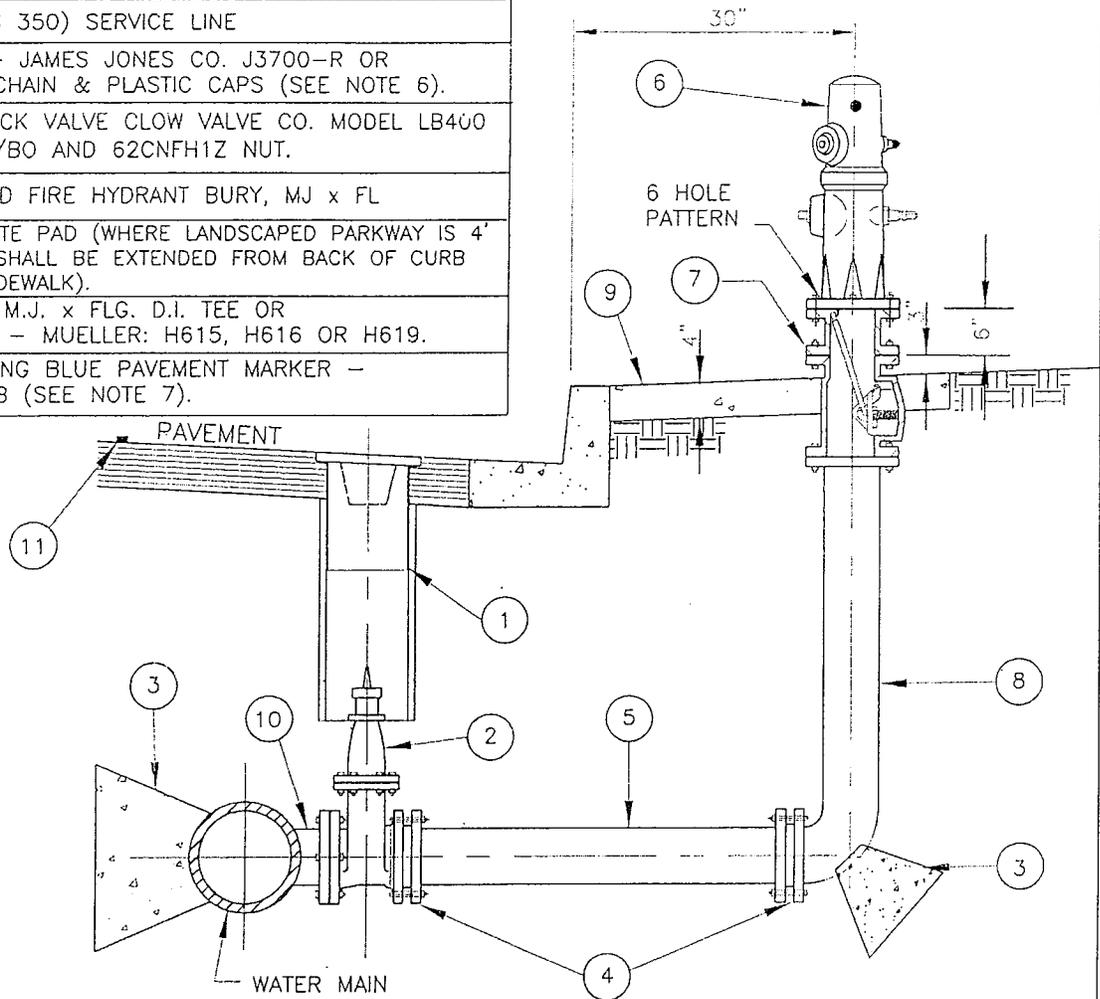
DATE ISSUED

JAN 2011

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PUBLIC WORKS DIRECTOR
R.C.E. NO. 50737

RB / BA

ITEM	MATERIALS
①	VALVE BOX ASSEMBLY PER T712.
②	6" VALVE MUELLER NO. A-2360-16 W/EVERDUR STEM & SS 316 FASTENERS W/2" NUT & NRS OPENING CCW.
③	CONCRETE THRUST BLOCK PER T713.
④	RESTRAINED JOINTS
⑤	6" D.I.P. (CLASS 350) SERVICE LINE
⑥	FIRE HYDRANT - JAMES JONES CO. J3700-R OR J3765-R WITH CHAIN & PLASTIC CAPS (SEE NOTE 6).
⑦	BREAK-OFF CHECK VALVE CLOW VALVE CO. MODEL LB400 62C35625RFT1Z/BO AND 62CNFH1Z NUT.
⑧	6" CEMENT LINED FIRE HYDRANT BURY, MJ x FL
⑨	4'x4'x4" CONCRETE PAD (WHERE LANDSCAPED PARKWAY IS 4' WIDE, PCC PAD SHALL BE EXTENDED FROM BACK OF CURB TO FRONT OF SIDEWALK).
⑩	MAIN SIZE x 6" M.J. x FLG. D.I. TEE OR TAPPING SLEEVE - MUELLER: H615, H616 OR H619.
⑪	2-WAY REFLECTING BLUE PAVEMENT MARKER - STIMSONITE 88AB (SEE NOTE 7).



NOTES:

- SERVICE LINE SHALL BE INSTALLED LEVEL WITH MAINLINE UNLESS SHOWN OTHERWISE ON PLAN.
- ALL PARTS OF THE FACILITY ABOVE GROUND SHALL BE THOROUGHLY CLEANED BY WIRE BRUSHING AND PAINTED WITH 3 COATS OF RUSTOLEUM No. 7773 OR APPROVED EQUAL. COLOR OF HYDRANT SHALL BE PAINTED WITH 2 COATS OF SHERWIN WILLIAMS #B66Y00600 S YELLOW. TOTAL THICKNESS OF COATINGS SHALL BE A MINIMUM OF 6 MILS.
- FIRE HYDRANT SHALL BE LOCATED 5 FEET MIN. FROM DRIVEWAYS END/BEGINNING OF CURB RETURN OR OTHER OBSTRUCTIONS. NO FIRE HYDRANT SHALL BE LOCATED IN THE CURB RADIUS.
- USE J3765-R IN COMMERCIAL OR INDUSTRIAL AREAS AND ALONG MAJOR STREETS.
- PLACE MARKER SIX INCHES FROM CENTER OF ROADWAY OR PAINTED CENTERLINE ON SIDE NEAREST THE HYDRANT.

ACCOMPANYING STD'S T700, T701, T712, T713, T723 AND T116.

CITY OF TORRANCE

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JAN 2011

**TYPICAL FIRE HYDRANT INSTALLATION FOR
NON-LOCAL STREETS OR HIGH PRESSURE ZONE**

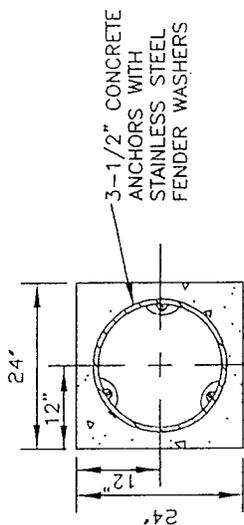
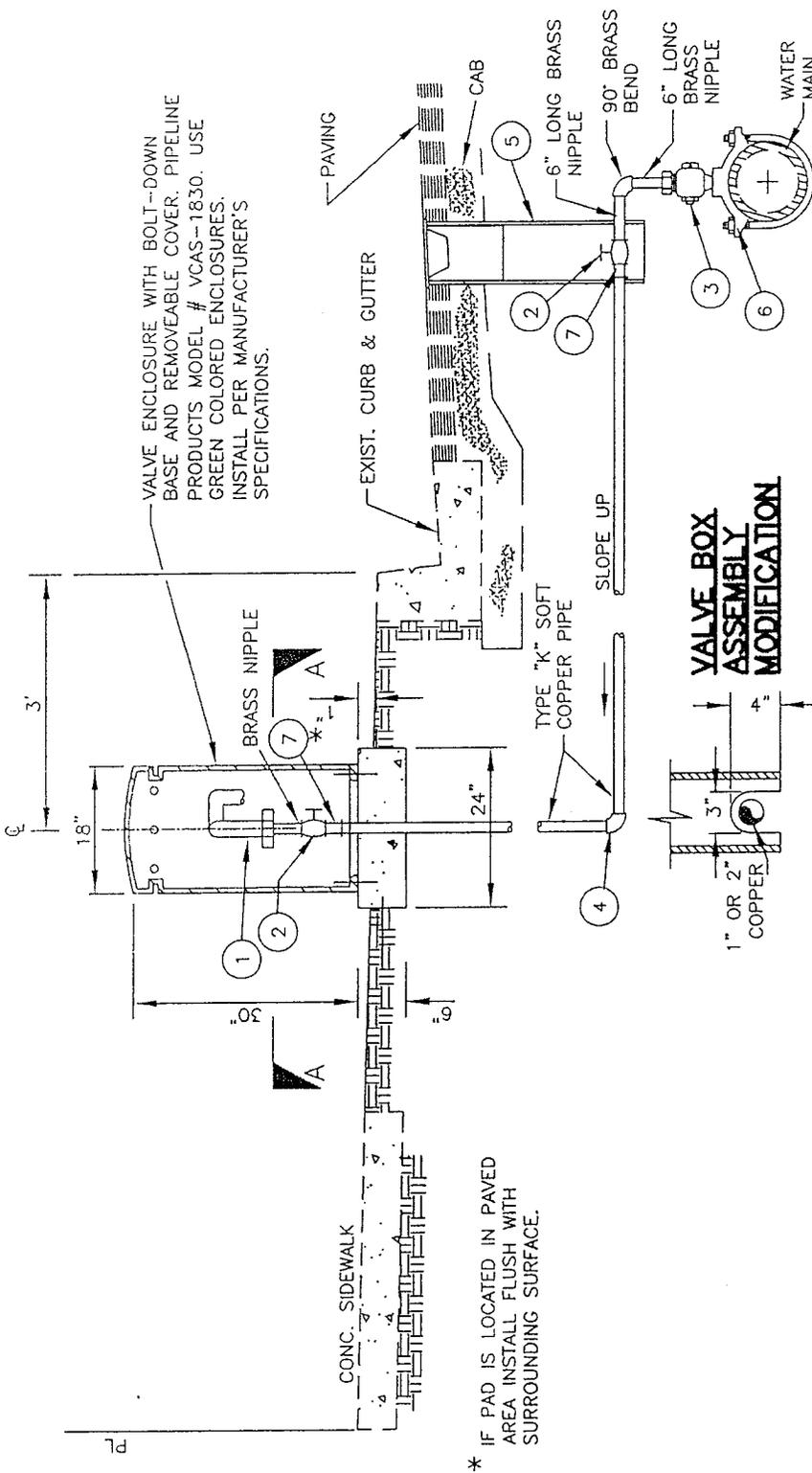
ROBERT J. BESTE
PUBLIC WORKS DIRECTOR
R.C.E. NO. 50737

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STANDARD NO.

T 706

SHEET 1 OF 1



SECTION A-A
VALVE & PIPE OMITTED FOR CLARITY

ITEM	PART NO.	**SIZE	DESCRIPTION
①	ARI D-040-P	1" OR 2"	COMBINATION AIR & VACUUM RELEASE VALVE
②	B11-444NL(FORD) B11-777NL(FORD) CAMBRIDGE BRASS #202NL-F4F4 CAMBRIDGE BRASS #202NL-F7F7	1" 2" 1" 2"	BALL VALVE, FIP*FIP
③	FB 1700-4NL(FORD) FB 1700-7NL(FORD) CAMBRIDGE BRASS #301NL-M4F4 CAMBRIDGE BRASS #301NL-M7F7	1" 2" 1" 2"	CORPORATION STOP, CC*FIP
④		1" OR 2"	90° COPPER ELBOW, S&XSJ
⑤			VALVE BOX ASSEMBLY (SEE T712) MOD.
⑥	J979(JONES) CAMBRIDGE BRASS #810	1" OR 2"	CC SERVICE SADDLE-DOUBLE STRAP
⑦		1" OR 2"	COPPER FITTING SJ x MIP

** (FOR MAIN SIZE >= 16" USE 2", FOR MAIN SIZE < 16", USE 1")

ACCOMPANYING STD'S T700, T701, T702, T712 AND T116

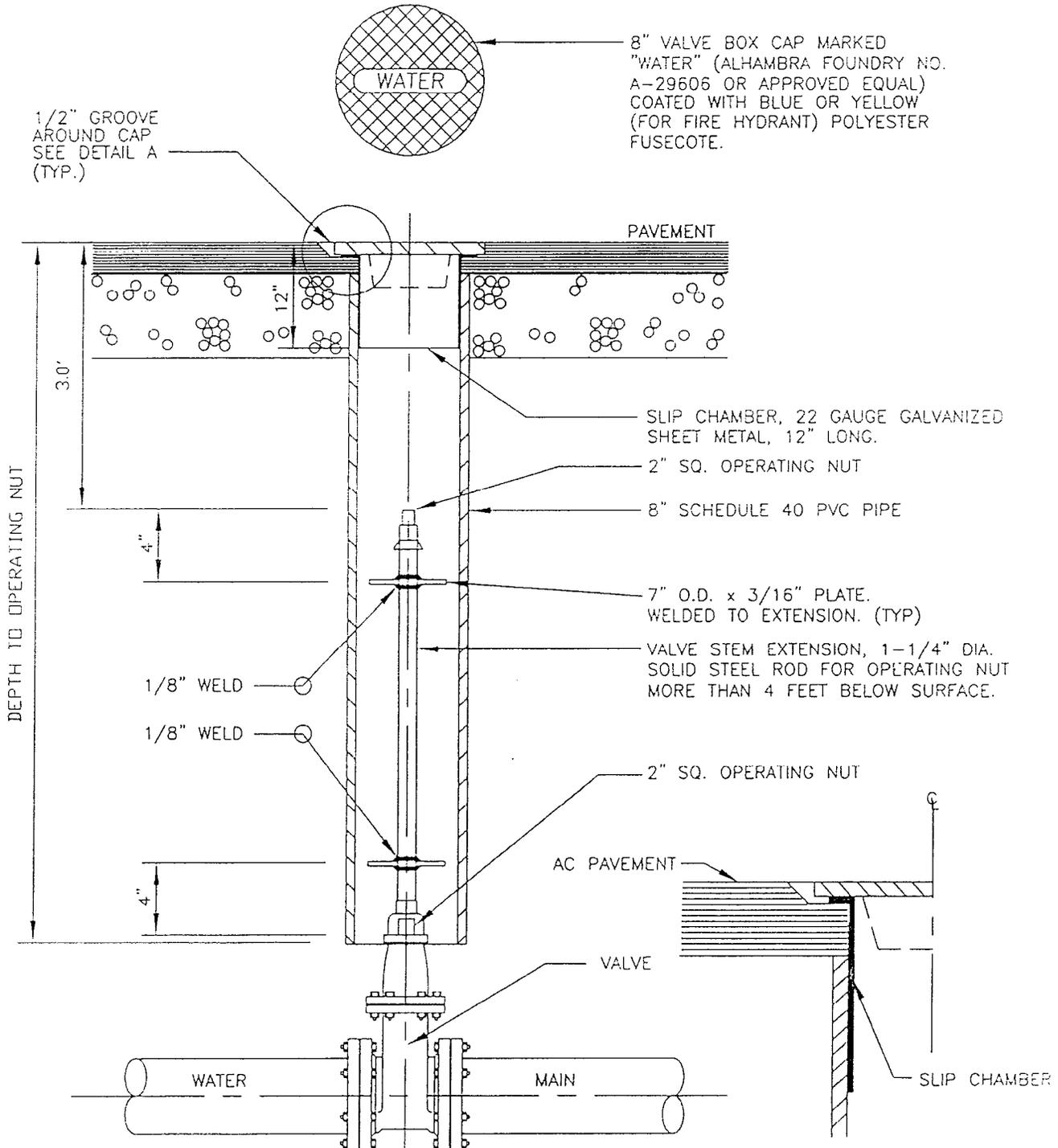
CITY OF TORRANCE

AIR AND VACUUM RELEASE VALVE

DATE ISSUED
JAN 2011

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PUBLIC WORKS DIRECTOR
R.C.E. NO. 50737

STANDARD NO.
T 708
SHEET 1 OF 1



NOTE:

VALVE STEM EXTENSION SHALL BE PROVIDED WHERE DEPTH TO OPERATING NUT EXCEEDS 4'-0".

DETAIL A
NOT TO SCALE

ACCOMPANYING STD. T700 AND T701

CITY OF TORRANCE

VALVE BOX ASSEMBLY

STANDARD NO.

T712

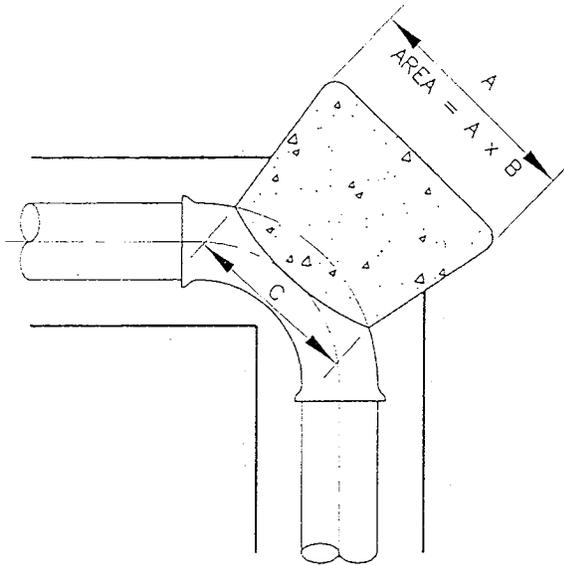
SHEET 1 OF 1

DATE ISSUED
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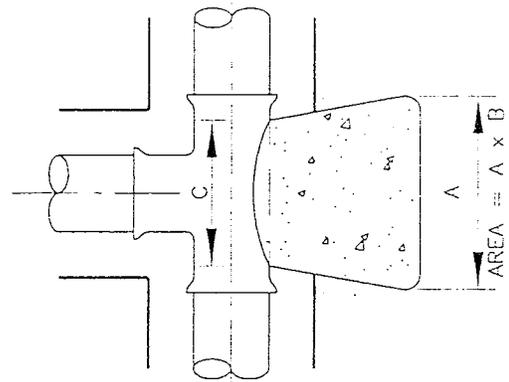
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PUBLIC WORKS DIRECTOR
R.C.E. NO. 50737

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EM/T712-3

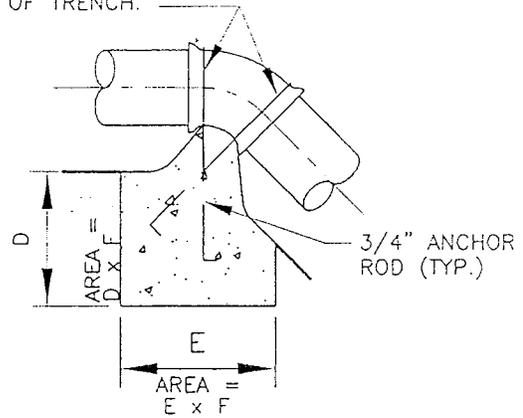


90 BEND

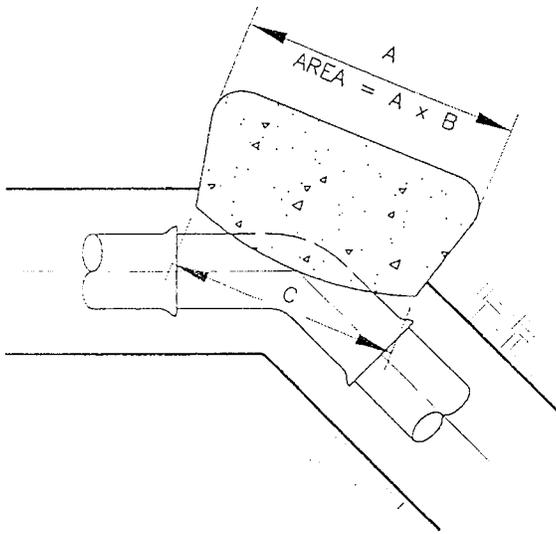


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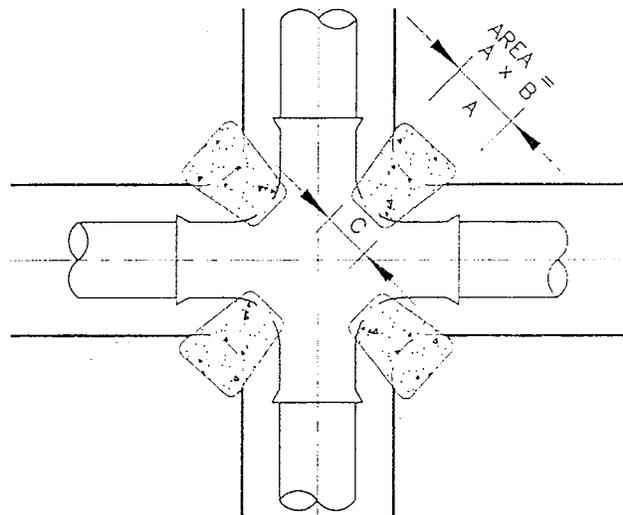
EXPOSED PORTION OF RE-BARS SHALL BE FIELD COATED W/TAR TO PREVENT CORROSION. MAKE BLOCK FULL WIDTH OF TRENCH.



VERTICAL BEND



BEND



CROSS

NOTE:

SEE SHEET 2 FOR THRUST BLOCK SCHEDULE AND NOTES.

CITY OF TORRANCE

DATE ISSUED

JAN 2011

CONCRETE THRUST BLOCK

ROBERT J. BESTE
PUBLIC WORKS DIRECTOR
R.C.E. NO. 50737

STANDARD NO.

T 713

SHEET 1 OF 2

VERTICAL BENDS														
NOMINAL PIPE SIZE (INCHES)	TEST PRESSURE (PSI)	BENDS LESS THAN OR EQUAL TO ANGLE												ALL BENDS
		11-1/4'			22-1/2'			45'			90'			
		D	E	F	D	E	F	D	E	F	D	E	F	
6"	200	1'-6"	3'-0"	1'-0"	2'-0"	4'-0"	1'-0"	3'-0"	5'-6"	1'-0"	4'-0"	7'-0"	2'-0"	6"
8"	200	2'-0"	4'-0"	1'-0"	2'-6"	5'-0"	1'-0"	3'-6"	7'-0"	2'-0"	5'-0"	10'-0"	3'-6"	10"
10"	200	2'-0"	4'-6"	1'-0"	3'-0"	6'-0"	1'-6"	4'-0"	9'-0"	3'-0"	6'-0"	12'-0"	5'-0"	1'-0"
12"	200	2'-6"	5'-0"	1'-0"	3'-6"	7'-0"	2'-0"	5'-0"	10'-0"	4'-0"	7'-0"	14'-0"	7'-0"	1'-0"

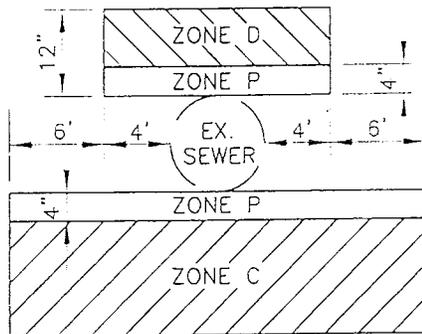
HORIZONTAL BENDS																
NOMINAL PIPE SIZE (INCHES)	TEST PRESSURE (PSI)	DEAD ENDS AND TEES			CROSS			BENDS LESS THAN OR EQUAL TO ANGLE								ALL BENDS
								11-1/4'		22-1/2'		45'		90'		
		A	B	C	A	B	C	A	B	A	B	A	B	A	B	
6"	200	2'-6"	1'-6"	6"	2'-0"	1'-0"	6"	1'-0"	1'-0"	2'-0"	1'-0"	3'-0"	1'-0"	3'-6"	1'-6"	8"
8"	200	4'-6"	1'-6"	8"	2'-0"	1'-6"	8"	1'-6"	1'-0"	3'-0"	1'-0"	3'-6"	1'-6"	5'-0"	2'-0"	10"
10"	200	5'-6"	2'-0"	10"	2'-6"	2'-0"	10"	2'-0"	1'-0"	3'-0"	1'-6"	4'-0"	2'-0"	6'-0"	2'-6"	1'-0"
12"	200	7'-6"	2'-0"	1'-0"	3'-6"	2'-0"	1'-0"	2'-0"	1'-6"	3'-0"	2'-0"	4'-6"	2'-6"	7'-0"	3'-0"	1'-0"

NOTES:

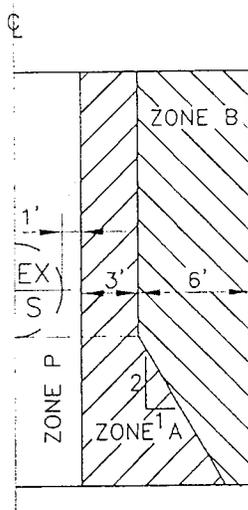
- THRUST BLOCK SIZES ARE BASED ON A BEARING CAPACITY OF 1500 P.S.F., WITH A MINIMUM SOIL COVER OF 3'-0". IF SOIL COVER IS LESS THAN 3'-0", MULTIPLY BEARING AREA BY FACTOR OF 1.5 FOR SOIL COVER OF 2'-0" TO 3'-0", OR 3.0 FOR SOIL COVER OF 1'-0" TO 2'-0".
- DIMENSIONS SHOWN REFER TO THRUST BLOCK TYPES SHOWN IN DETAIL, AND ARE MINIMUM VALUES ONLY.
- CONCRETE MIX SHALL BE IN ACCORDANCE WITH SPECIFICATIONS FOR 3000 LBS. STRENGTH AT 28 DAYS WHEN TESTED IN ACCORDANCE WITH ASTM C39.
- ALL THRUST BLOCKS SHALL BE POURED SOLIDLY AGAINST FIRM, UNDISTURBED SOIL.
- IF SOILS HAVE BEEN PREVIOUSLY EXCAVATED AND BACKFILLED, CONTRACTOR SHALL NOTIFY THE ENGINEERING DIRECTOR, WHO MAY DIRECT THAT THE DIMENSIONS SHOWN SHALL BE INCREASED BY A FACTOR OF 1.5.
- CONCRETE POURED AGAINST PIPE FITTINGS SHALL NOT EXTEND BEYOND THE FITTING JOINTS WITHOUT THE APPROVAL OF THE ENGINEERING DIRECTOR.
- WHERE WATER MAIN DEAD ENDS AND IS BLIND FLANGED OR CAPPED, THE THRUST BLOCK SHALL EXTEND A MINIMUM DISTANCE OF 6" INTO THE SIDE OF TRENCH ON EITHER SIDE OF PIPE.

CITY OF TORRANCE

DATE ISSUED	<p style="text-align: center;">THRUST BLOCK SCHEDULE</p> <p>ROBERT J. BESTE PUBLIC WORKS DIRECTOR R.C.E. NO. 50737</p> 	STANDARD NO.
JAN 2011		T 713
		SHEET 2 OF 2



PERPENDICULAR CONSTRUCTION



PARALLEL CONSTRUCTION

CITY OF TORRANCE

WATER AND SEWER
SEPARATION REQUIREMENTS

ROBERT J. BESTE
PUBLIC WORKS DIRECTOR
R.C.E. NO. 50737

RB 1.3X

STANDARD NO.

T 714

SHEET 1 OF 2

DATE ISSUED

JAN 2011

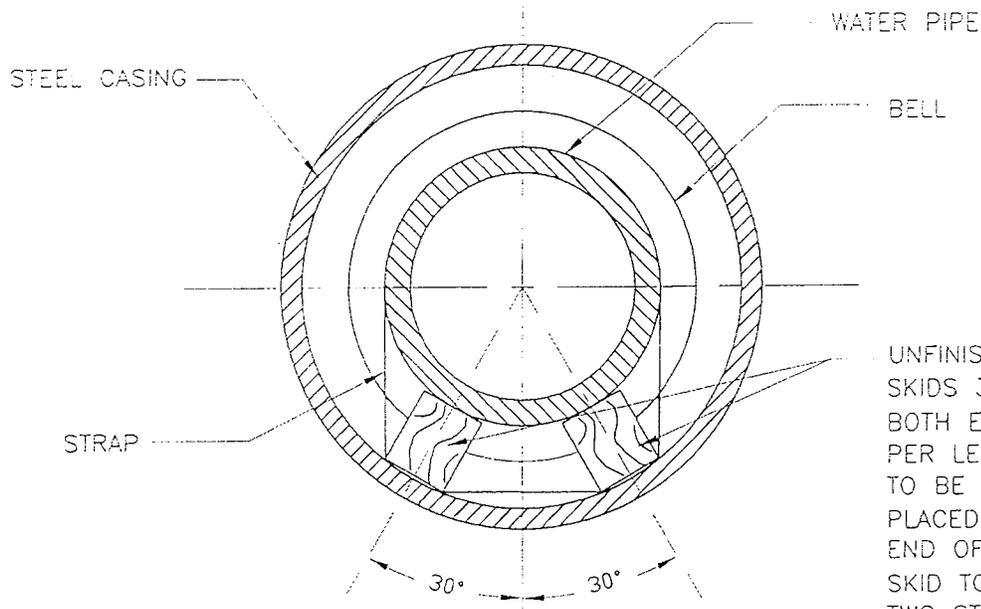
BASIC SEPARATION STANDARDS

1. PARALLEL CONSTRUCTION: THE HORIZONTAL DISTANCE BETWEEN PRESSURE DOMESTIC WATER AND RECLAIMED WATER MAINS AND SEWER LINES SHALL BE AT LEAST 10 FEET.
2. PERPENDICULAR CONSTRUCTION (CROSSING): PRESSURE WATER MAINS SHALL BE AT LEAST ONE FOOT ABOVE SANITARY SEWER AND RECLAIMED WATER LINES WHERE THESE LINES MUST CROSS.
3. SPECIAL PROVISIONS: ALTERNATE CONSTRUCTION CRITERIA WHERE THE BASIC SEPARATION STANDARDS CANNOT BE ATTAINED ARE SHOWN BELOW:

ZONE	WATER CONSTRUCTION (EXISTING SEWER)
B	1) CLASS 350 D.I.P. WATER MAIN. 2) APPROVED ALTERNATES.
C/D	1) CLASS 350 D.I.P. WATER MAIN W/NO JOINT 2) STEEL CASING PER STD. T715 3) APPROVED ALTERNATES.
A	NO CONSTRUCTION WITHOUT APPROVAL OF WATER DIVISION AND DEPARTMENT OF PUBLIC HEALTH.
P	CONSTRUCTION WITHIN THIS AREA PROHIBITED.

CITY OF TORRANCE

DATE ISSUED	WATER AND SEWER SEPARATION REQUIREMENTS	STANDARD NO.
JAN 2011	ROBERT J. BESTE PUBLIC WORKS DIRECTOR R.C.E. NO. 50737	T 714
	<i>TBA / BSA</i>	SHEET 2 OF 2



UNFINISHED REDWOOD SKIDS 3' LONG BEVELED BOTH ENDS. FOUR SKIDS PER LENGTH OF PIPE TO BE STRAPPED IN PLACED 3' FROM EACH END OF PIPE. NOTCH SKID TO SEAT STRAP. TWO STRAPS PER SET OF SKIDS.

SCHEDULE STEEL CASING WITH EPOXY COATING FOR WATER PIPE			
ORIGINAL PIPE SIZE	MAXIMUM CASING SIZE	MIN. WALL	SKIDS
4"	10" I.D.	1/4"	2"X4" UNFINISHED REDWOOD
6"	12" I.D.	1/4"	
8"	16" I.D.	1/4"	
10"	18" I.D.	5/16"	3"X4" UNFINISHED REDWOOD
12"	20" I.D.	5/16"	

NOTES:

1. CASING SHALL BE INSTALLED BY THE TRENCH, BORE, JACK AND/OR TUNNEL METHOD. IF CASING INSTALLED BY TRENCH METHOD IT SHALL BE INSTALLED PER STD. T701.
2. REDWOOD SKIDS SHALL BE PROVIDED AS PER DETAIL ABOVE.
3. SIZE AND THICKNESS OF CASING SHALL BE AS SHOWN IN SCHEDULE ABOVE.
4. ALL CASING SECTIONS TO BE JOINED BY FULL CIRCUMFERENTIAL WELD.
5. CASING TO BE FILLED TO TOP OF BELL OF WATER PIPE WITH AIR BLOWN SAND OR SLURRY MIX.
6. ENDS OF CASING SHALL BE SEALED WITH CEMENT SLURRY MIX 100-E-100.
7. STRAPS TO BE STAINLESS STEEL.

CITY OF TORRANCE

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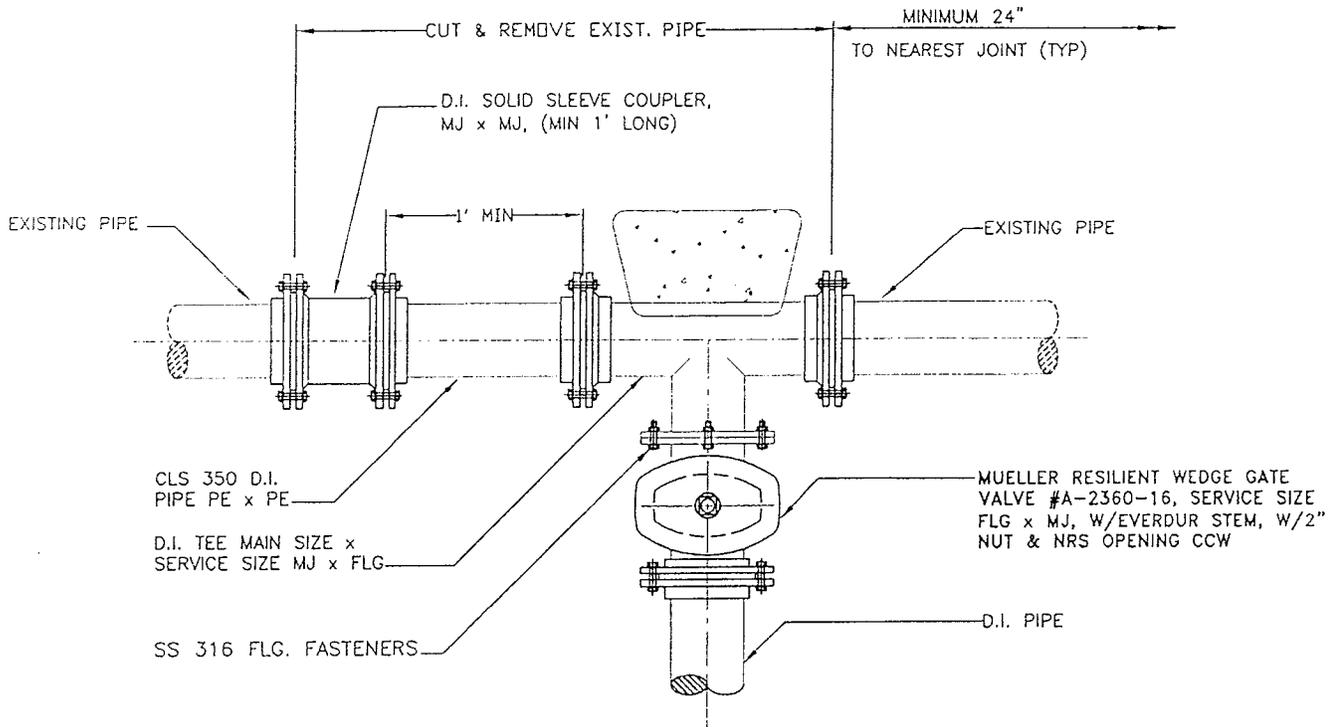
STEEL CASING PIPE

ROBERT J. BESTE
PUBLIC WORKS DIRECTOR
R.C.E. NO. 50737

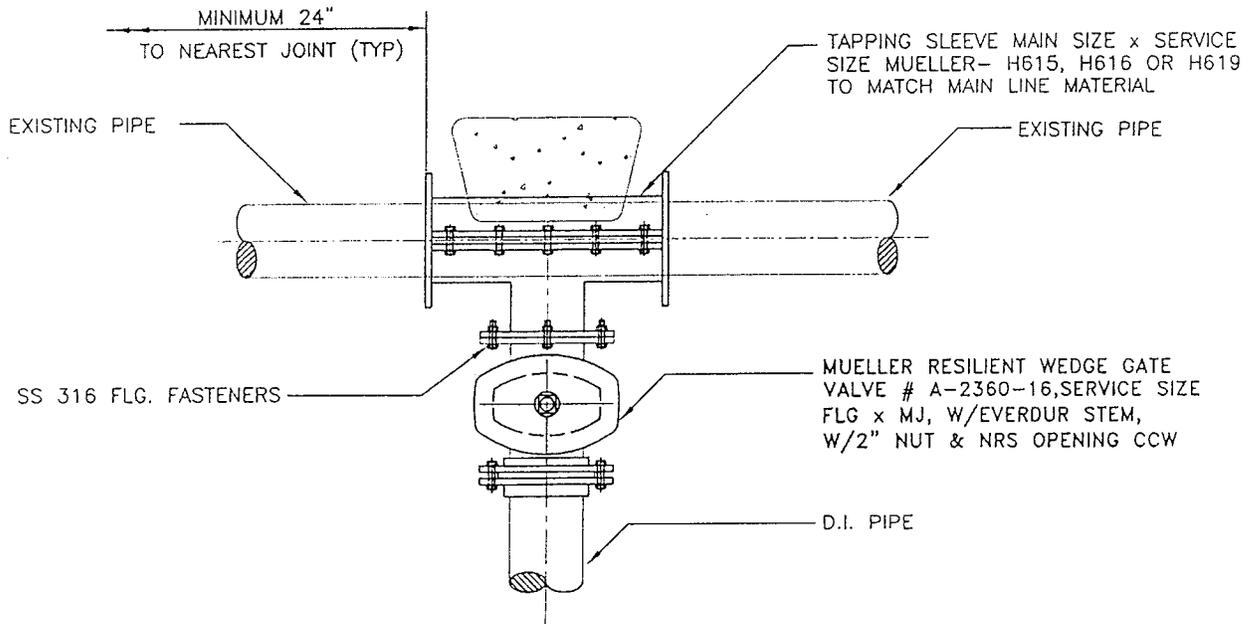
STANDARD NO.

T 715

SHEET 1 OF 1



CUT IN METHOD



HOT TAP METHOD

ACCOMPANYING STD. T700, T701, T712, AND T713

CITY OF TORRANCE

D.I. CONNECTION TO MAIN

DATE ISSUED

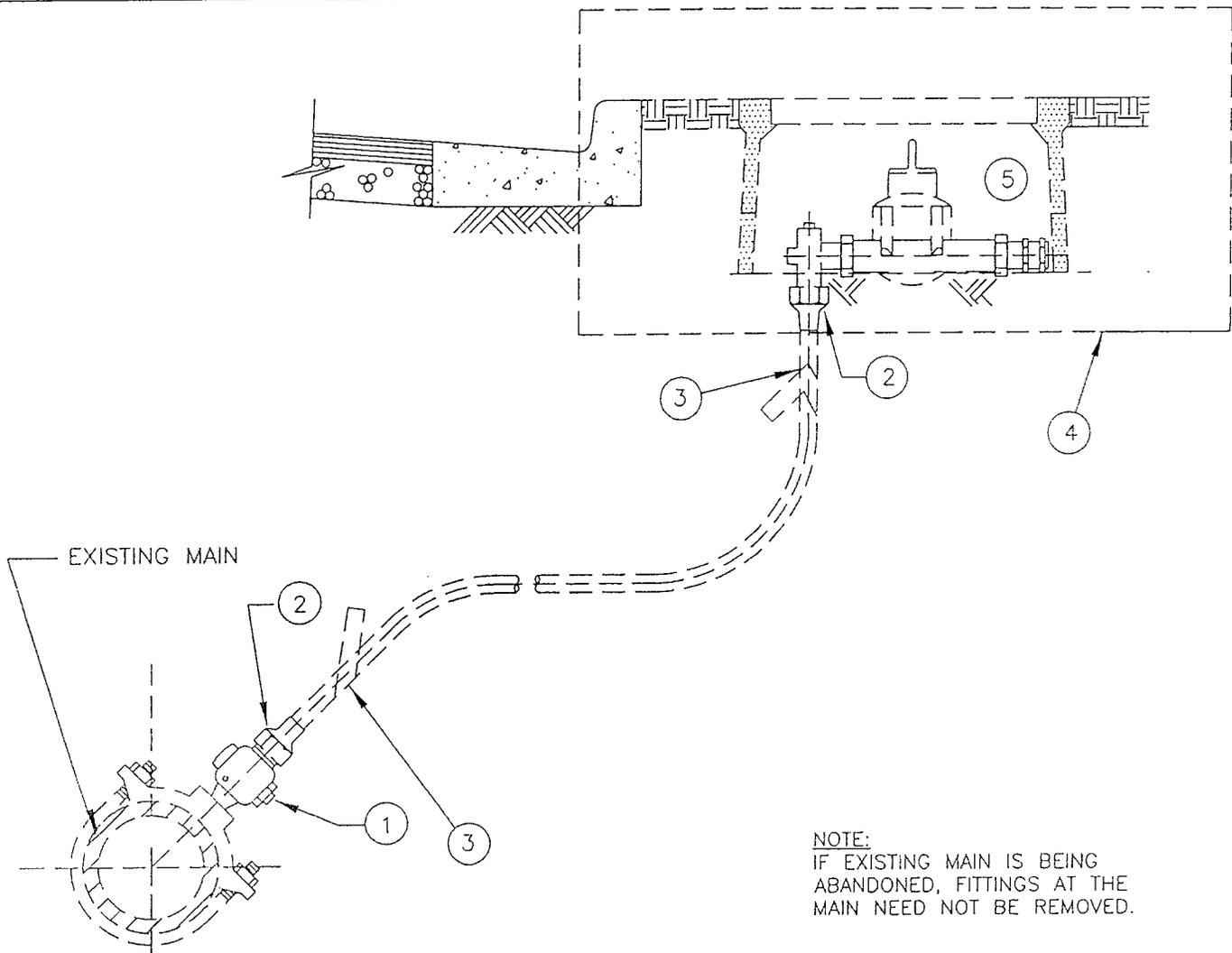
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R.C.E. NO. 50737

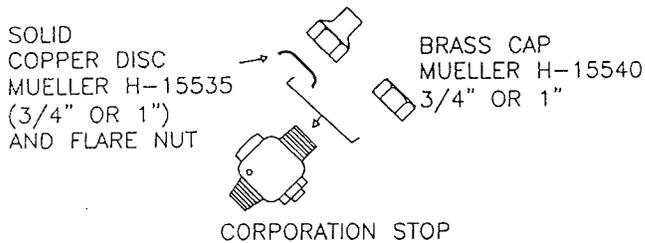
STANDARD NO.

T 723

SHEET 1 OF 1



NOTE:
IF EXISTING MAIN IS BEING
ABANDONED, FITTINGS AT THE
MAIN NEED NOT BE REMOVED.



ITEM	DESCRIPTION
①	SHUT OFF CORP. STOP
②	REMOVE FLARE NUT. INSTALL BRASS CAP OR COPPER DISC W/FLARE NUT ON CORPORATION STOP.
③	CRIMP COPPER PIPE 12" FROM ANGLE VALVE AND CORP. STOP
④	REMOVE EXISTING METER, METER BOX AND ANGLE VALVE RETURN METER AND ANGLE VALVE TO CITY OF TORRANCE.
⑤	VOID FROM WATER METER ASSEMBLY REMOVAL SHALL BE BACKFILLED, WITH NATIVE SOIL OR SUITABLE MATERIAL AS APPROVED BY THE ENGINEER, TO GRADE.

CITY OF TORRANCE

**SERVICE ABANDONMENT
TYPICAL 3/4" OR 1" METER**

DATE ISSUED

JAN 2011

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STANDARD NO.

T 725

SHEET 1 OF 1

ROUND CORNERS IF ALUMINUM
OPTION USED

BLACK LETTERS

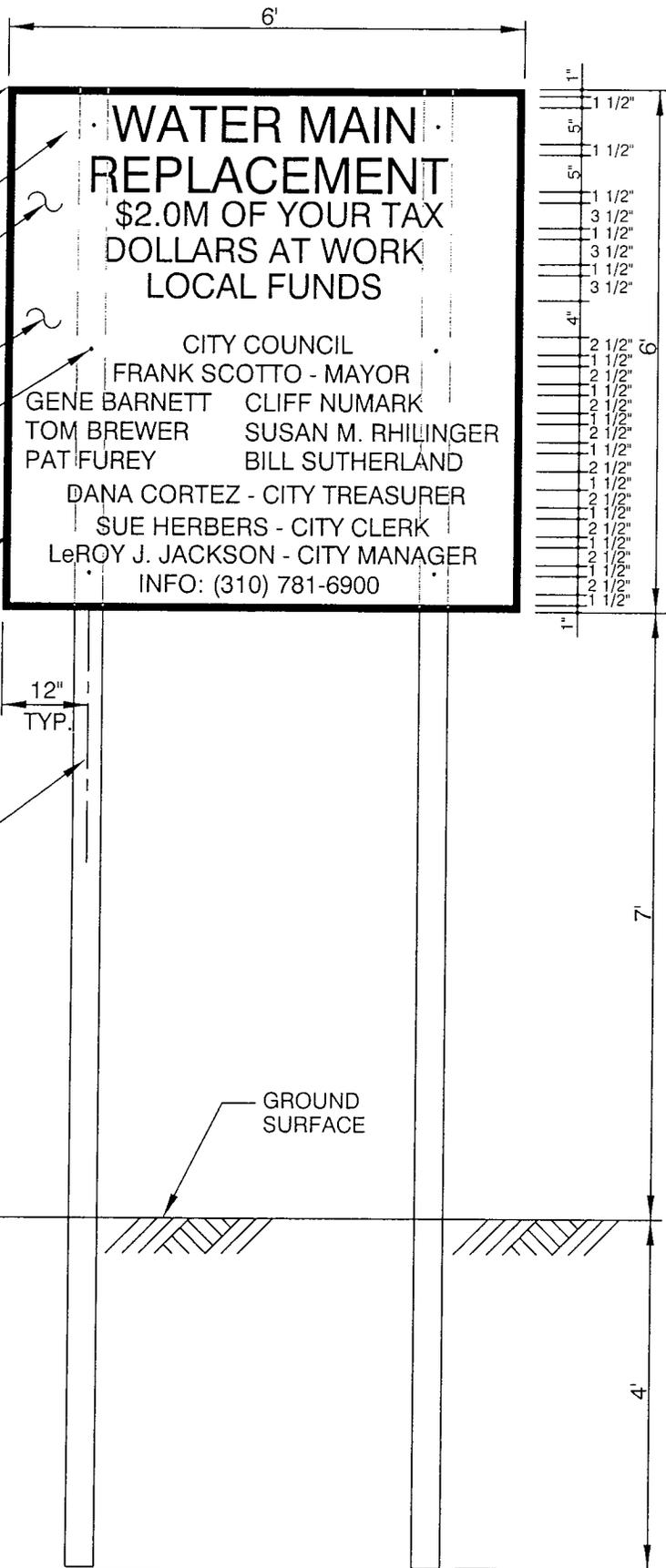
6'x6'x3/4" PLYWOOD BOARD
OR
6'x6'x.08" ALUMINUM SHEET

WHITE BACKGROUND

3 - 3/8" CARRIAGE BOLTS
(5" LONG)
TYPICAL EACH POST

1" BLACK LINE

4"x4" WOODEN POST



CITY OF TORRANCE

DATE ISSUED

CONSTRUCTION IMPROVEMENT SIGN

STANDARD NO.

T503-0

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PUBLIC WORKS DIRECTOR
R.C.E. NO. 50737

SHEET 1 OF 1