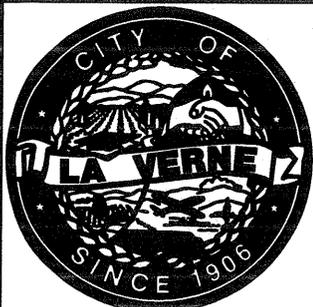


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W-9a	1" AIR/VACUUM RELEASE VALVE ASSEMBLY STEEL PIPE WATER MAIN	MARCH 2011
W-10	2" AIR/VACUUM RELEASE VALVE ASSEMBLY DUCTILE IRON AND AC PIPE WATER MAIN	MARCH 2011



DEPARTMENT OF PUBLIC WORKS

INDEX SHEET

APPROVED:

CITY OF LA VERNE

CITY UTILITY ENGINEER

43296

RCE No.

4/4/11
DATE

3/31/11
DATE

SCALE:

N.T.S.

DATE OF REVISION:

MARCH 2011

BY	DATE
DESIGNED	R.D.H. 03/11
DRAWN	J.T. 03/11
CHECKED	W.D.B. 03/11

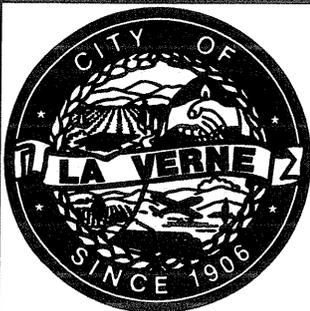
STD. DWG. NO.

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<u>DWG. NO.</u>	<u>DESCRIPTION</u>	<u>DATE REVISED</u>
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W-21	DESIGN REQUIREMENTS FOR NEW WATER MAINS IN THE VICINITY OF SANITARY SEWERS	MARCH 2011
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ABBREVIATIONS

AC	ASBESTOS CEMENT
AWWA	AMERICAN WATER WORKS ASSOCIATION
Ⓢ	CENTER LINE
CML	CEMENT MORTAR LINED
CMC	CEMENT MORTAR COATED
CTS	COPPER TUBE SIZE
DEPT	DEPARTMENT
DIA	DIAMETER
DI	DUCTILE IRON
DWG	DRAWING
ELL	ELBOW
FE	FLANGE END
FIP	FEMALE IRON PIPE
FLG	FLANGE
FPT	FEMALE PIPE THREADS
GA	GAUGE
GPM	GALLONS PER MINUTE
IPS	IRON PIPE SIZE
MAX	MAXIMUM
MC	METER COUPLING SWIVEL NUT
MIN	MINIMUM
MIP	MALE IRON PIPE
MJ	MECHANICAL JOINT
MPT	MALE PIPE THREADS
NST	NATIONAL STANDARD THREADS
PCC	PORTLAND CONCRETE CEMENT
PE	PLAIN END
ℙ	PROPERTY LINE
PSI	POUNDS PER SQUARE INCH
PVC	POLY VINYL CHLORIDE
RAD	RADIUS
RPPBA	REDUCED PRESSURE PRINCIPLE BACKFLOW ASSEMBLY
SQFT	SQUARE FOOT
SSPWC	STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION
STD	STANDARD



DEPARTMENT OF PUBLIC WORKS

ABBREVIATIONS

APPROVED:

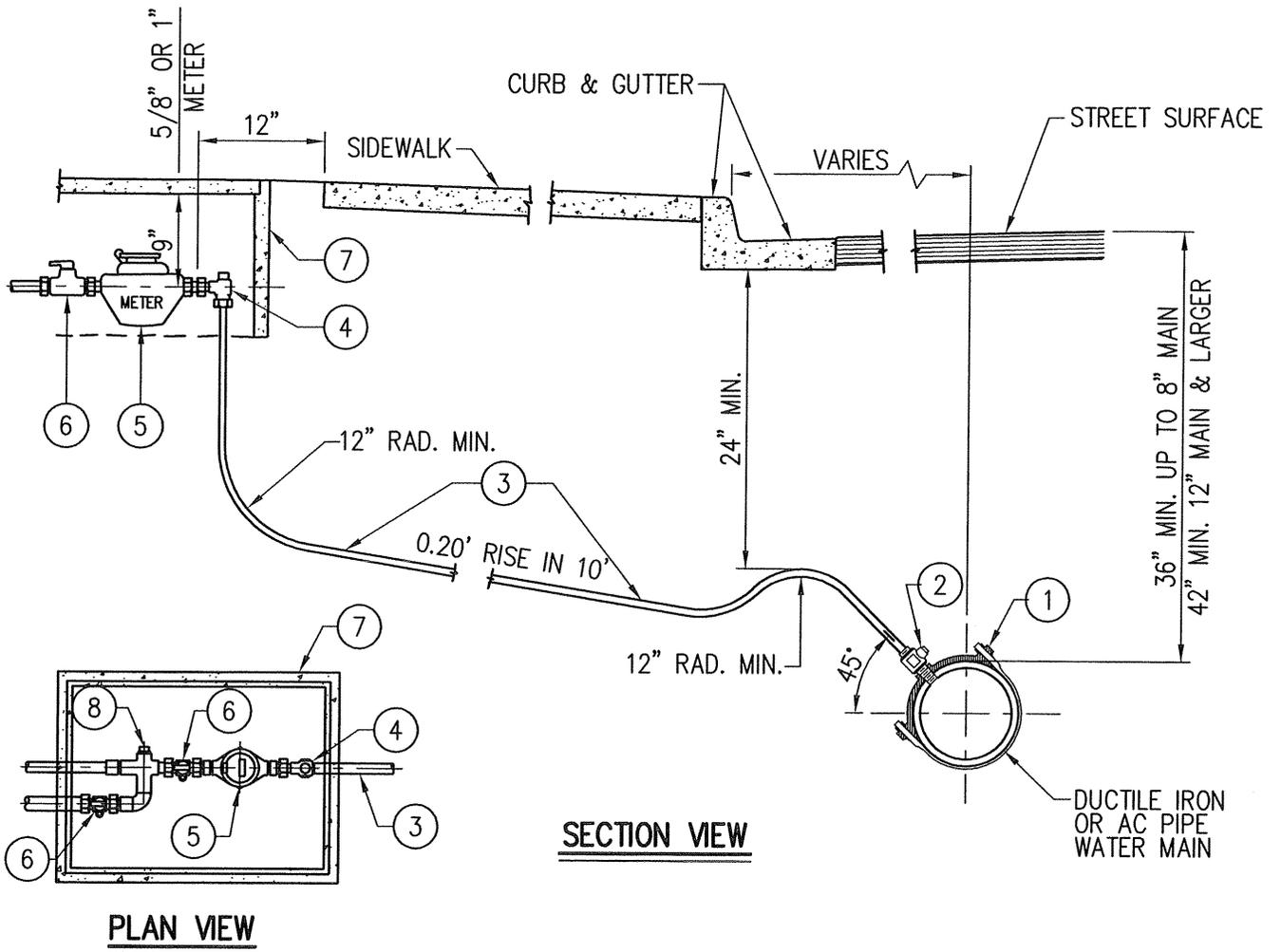
CITY OF LA VERNE

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[Signature] 4/4/11
DATE

[Signature] 43296 3/31/11
RCE No. DATE

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DESIGNED	R.D.H.	03/11
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CHECKED	W.D.B.	03/11
SCALE:	STD. DWG. NO.	
N.T.S.	ABBR.	
DATE OF REVISION:		
MARCH 2011	SHT. 1 OF 1	



GENERAL NOTES

- A. ALL REPLACEMENT OR NEW SERVICES SHALL BE NOT LESS THAN 5-FEET FROM ANY TREE, DRIVEWAY OR LIGHTPOLE AND NOT LESS THAN 10-FEET FROM ANY SEWER.
- B. METER BOX SHALL NOT BE INSTALLED IN CONCRETE IMPROVEMENTS. MAINTAIN LEVEL GROUND 36" MIN. ALL AROUND BOX INSTALLATION AND 6' VERTICAL CLEARANCE.
- C. CHISEL "W" 3-INCH HIGH ON FACE OF CURB AT SERVICE LOCATION.
- D. CITY OF LA VERNE UTILITY INSPECTOR WILL INSPECT INSTALLATION BEFORE BACKFILLING.
- E. INSTALLATION OF OPTIONAL FIRE SERVICE MANIFOLD WILL BE AT THE DIRECTION OF THE DIRECTOR OF PUBLIC WORKS.



DEPARTMENT OF PUBLIC WORKS

**1" SERVICE CONNECTION
DUCTILE IRON AND AC PIPE
WATER MAIN**

APPROVED:

CITY OF LA VERNE

CITY UTILITY ENGINEER

43296
RCE No.

[Signature]
DATE
4/4/11
[Signature]
DATE
3/31/11

	BY	DATE
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CHECKED	W.D.B.	03/11
SCALE: N.T.S.	STD. DWG. NO. W-1	
DATE OF REVISION: MARCH 2011	SHT. 1 OF 2	

CONSTRUCTION NOTES FOR DUCTILE IRON WATER MAIN

- ① SADDLE:
1" FORD DOUBLE STRAP BRASS SADDLE MODEL NO. 202B-IP4
- ② CORPORATION STOP:
1" MUELLER MODEL NO. H-15028 MIPxCTS
1" FORD MODEL NO. F1100-4-Q-NL, MIPxQUICK JOINT
- ③ SERVICE LINE:
1" TYPE "K" SOFT COPPER TUBING
- ④ ANGLE BALL SERVICE VALVES/CURB STOP:
1" MUELLER MODEL NO. B-24258, CTSxMC
1" FORD MODEL NO. BA43-444W-Q-NL, CTSxMC
- ⑤ METER:
5/8" (METER BUSHING NEEDED FOR 5/8"x3/4" METER), 1" - TO BE SPECIFIED BY DIRECTOR OF PUBLIC WORKS.
- ⑥ BALL METER VALVES:
1" FORD MODEL NO. B13-444W-HB-34S-NL WITH VALVE HANDLE
1" MUELLER MODEL NO. B-24350 WITH VALVE HANDLE B-20298
- ⑦ METER BOX:
FOR 3/4" OR 1" METER - SEE STD. DWG. W-15.
- ⑧ FIRE SERVICE MANIFOLD:
1" FORD MODEL NO. A-C12474-100
1" PERFORMANCE METER INC. MODEL NO. FSM100
(OPTIONAL AS DIRECTED BY DIRECTOR OF PUBLIC WORKS)



DEPARTMENT OF PUBLIC WORKS

1" SERVICE CONNECTION DUCTILE IRON AND AC PIPE WATER MAIN

APPROVED:

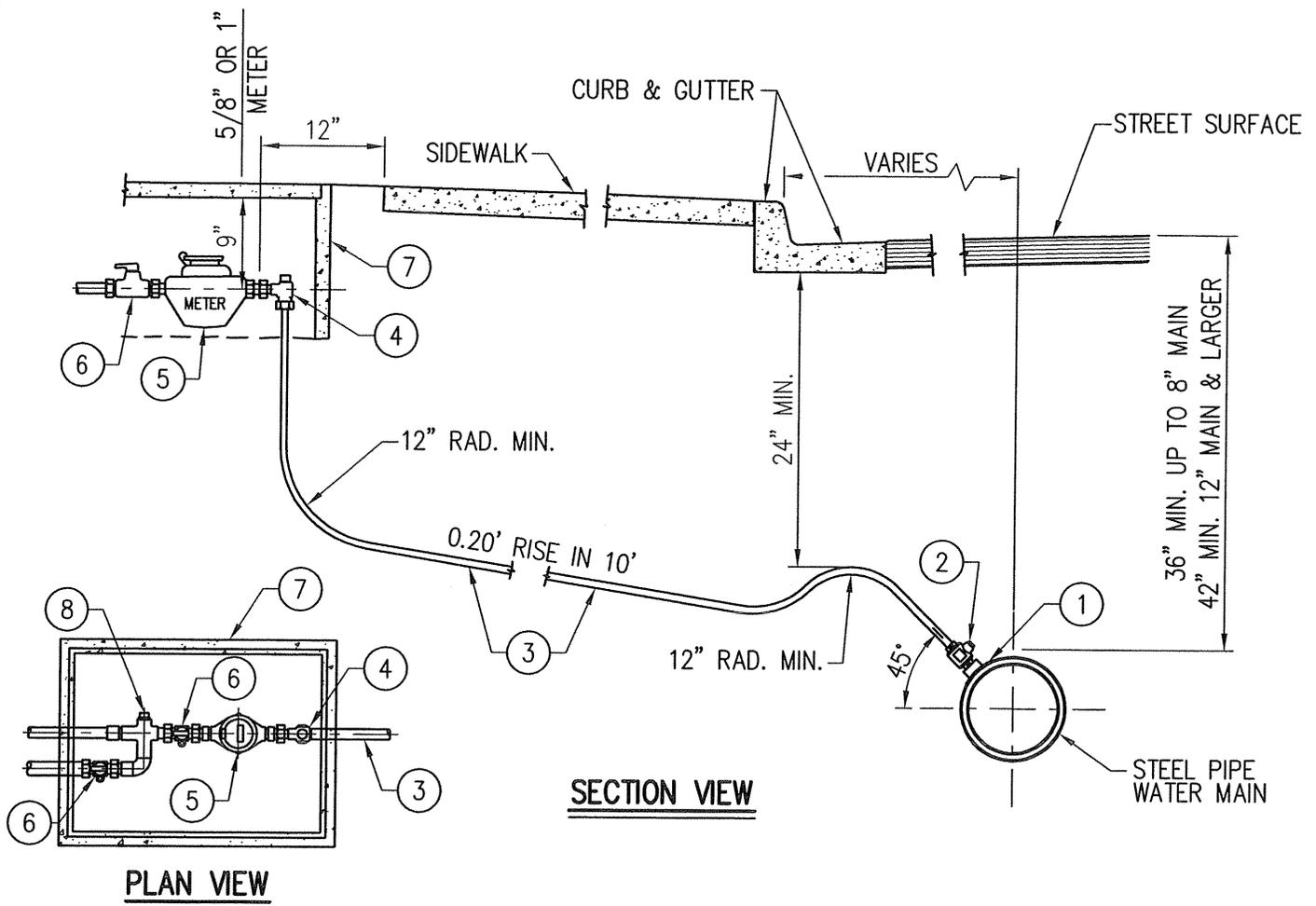
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CITY UTILITY ENGINEER

43296
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DATE OF REVISION: MARCH 2011	SHT. 2 OF 2	



SECTION VIEW

PLAN VIEW

GENERAL NOTES

- A. ALL REPLACEMENT OR NEW SERVICES SHALL BE NOT LESS THAN 5-FEET FROM ANY TREE, DRIVEWAY OR LIGHTPOLE AND NOT LESS THAN 10-FEET FROM ANY SEWER.
- B. METER BOX SHALL NOT BE INSTALLED IN CONCRETE IMPROVEMENTS. MAINTAIN LEVEL GROUND 36" MIN. ALL AROUND BOX INSTALLATION AND 6' VERTICAL CLEARANCE
- C. CHISEL "W" 3-INCH HIGH ON FACE OF CURB AT SERVICE LOCATION.
- D. CORPORATION STOPS CONNECTED TO WELD-ON COUPLINGS MUST HAVE NYLON BUSHING TO PREVENT CORROSION OF WATER MAIN AND MUST BE INSPECTED BY UTILITY INSPECTOR.
- E. CITY OF LA VERNE UTILITY INSPECTOR WILL INSPECT INSTALLATION BEFORE BACKFILLING.
- F. INSTALLATION OF OPTIONAL FIRE SERVICE MANIFOLD WILL BE AT THE DIRECTION OF THE DIRECTOR OF PUBLIC WORKS.



**1" SERVICE CONNECTION
STEEL PIPE WATER MAIN**

APPROVED: *[Signature]* 4/4/11
 CITY OF LA VERNE DATE
[Signature] 3/31/11
 CITY UTILITY ENGINEER RCE No. DATE

	BY	DATE
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DRAWN	J.T.	03/11
CHECKED	W.D.B.	03/11
SCALE:	N.T.S.	
DATE OF REVISION:	MARCH 2011	
	STD. DWG. NO.	W-1a
	SHT. 1 OF 2	

CONSTRUCTION NOTES FOR STEEL PIPE WATER MAIN

- ① 1" SERVICE:
1-1/2" EXTRA HEAVY HALF COUPLING, 1-1/2"x1" NYLON BUSHING
- ② CORPORATION STOP:
1" MUELLER MODEL NO. H-15028 MIPxCTS
1" FORD MODEL NO. F1100-4-Q-NL, MIPxQUICK JOINT
- ③ SERVICE LINE:
1" TYPE "K" SOFT COPPER TUBING
- ④ ANGLE BALL SERVICE VALVES/CURB STOP:
1" MUELLER MODEL NO. B-24258, CTSxMC
1" FORD MODEL NO. BA43-444W-Q-NL, CTSxMC
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- ⑥ BALL METER VALVES:
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1" PERFORMANCE METER INC. MODEL NO. FSM100
(OPTIONAL AS DIRECTED BY DIRECTOR OF PUBLIC WORKS)



DEPARTMENT OF PUBLIC WORKS

1" SERVICE CONNECTION STEEL PIPE WATER MAIN

APPROVED:

CITY OF LA VERNE

CITY UTILITY ENGINEER

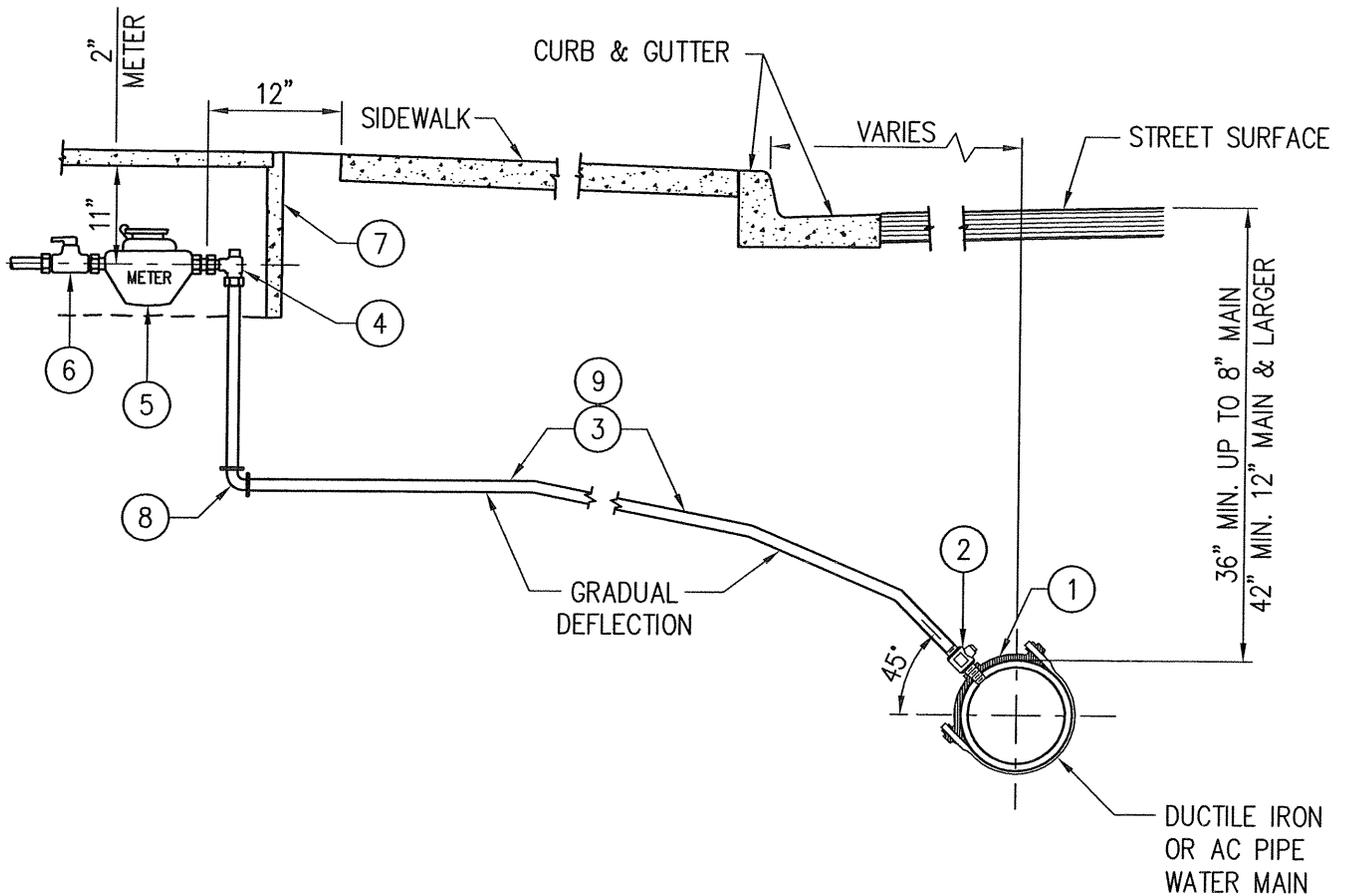
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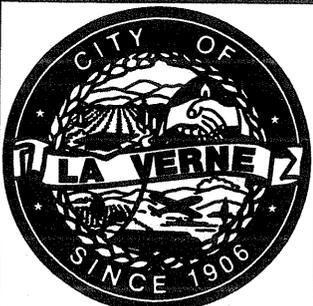
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DATE

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CHECKED	W.D.B.	03/11
SCALE: N.T.S.	STD. DWG. NO. W-1a	
DATE OF REVISION: MARCH 2011	SHT. 2 OF 2	



GENERAL NOTES

- A. ALL REPLACEMENT OR NEW SERVICES SHALL BE NOT LESS THAN 5- FEET FROM ANY TREE, DRIVEWAY OR LIGHTPOLE AND NOT LESS THAN 10- FEET FROM ANY SEWER.
- B. METER BOX SHALL NOT BE INSTALLED IN CONCRETE IMPROVEMENTS. MAINTAIN LEVEL GROUND 36" MIN. ALL AROUND BOX INSTALLATION AND 6' VERTICAL CLEARANCE.
- C. CHISEL "W" 3-INCH HIGH ON FACE OF CURB AT SERVICE LOCATION.
- D. CITY OF LA VERNE UTILITY INSPECTOR WILL INSPECT INSTALLATION BEFORE BACKFILLING.
- E. INSTALL REDUCED PRESSURE PRINCIPLE DEVICE ON SPECIFIED SERVICE CONNECTION PER STD. DWG W-13.



DEPARTMENT OF PUBLIC WORKS

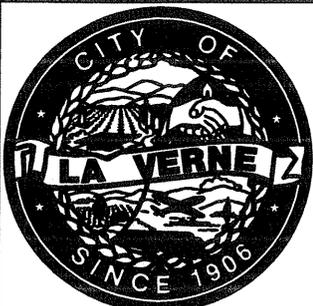
**2" SERVICE CONNECTION
DUCTILE IRON AND AC PIPE
WATER MAIN**

APPROVED: *[Signature]* 4/4/11
 CITY OF LA VERNE DATE
[Signature] 3/31/11
 CITY UTILITY ENGINEER RCE No. 43296 DATE

	BY	DATE
DESIGNED	R.D.H.	03/11
DRAWN	J.T.	03/11
CHECKED	W.D.B.	03/11
SCALE: N.T.S.	STD. DWG. NO.	
DATE OF REVISION: MARCH, 2011	W-2	
	SHT. 1 OF 2	

CONSTRUCTION NOTES FOR DUCTILE IRON WATER MAIN

- ① SADDLE:
2" FORD DOUBLE STRAP BRASS SADDLE MODEL NO. 202B-IP7
- ② CORPORATION STOP:
2" FORD MODEL NO. FB1100-7-Q-NL, MIPxQUICK JOINT
2" MUELLER MODEL NO. H-15023, MIPxCTS
- ③ SERVICE LINE:
2" TYPE "K" SOFT COPPER TUBING
- ④ ANGLE BALL SERVICE VALVES/CURB STOP:
2" FORD MODEL NO. BFA43-777W-Q-NL, CTSxFE, WITH CF31-77-NL, METER FLANGExFIP
2" MUELLER MODEL NO. B-24276, CTSxFE
- ⑤ METER:
2" - TO BE SPECIFIED BY DIRECTOR OF PUBLIC WORKS.
NOTE: 2" METER MAY REQUIRE A BACKFLOW DEVICE SEE STD. DWG. W-13.
- ⑥ BALL METER VALVES:
2" FORD MODEL NO. BF13-777W-Q-HB-67S-NL WITH VALVE HANDLE
2" MUELLER MODEL NO. B-24335 WITH VALVE HANDLE B-20298
- ⑦ METER BOX:
FOR 2" METER SEE STD. DWG. W-16
- ⑧ BEND:
2" 90° ELL. FORD MODEL NO. L44-77-Q-NL
2" 90° ELL. MUELLER MODEL NO. H-15526
- ⑨ COUPLING:
2" STRAIGHT COUPLING FORD MODEL NO. C44-77-Q-NL
2" STRAIGHT COUPLING MUELLER MODEL NO. H-15403
(FOR SERVICE LINES OVER 20' IN LENGTH)



DEPARTMENT OF PUBLIC WORKS

2" SERVICE CONNECTION DUCTILE IRON AND AC PIPE WATER MAIN

APPROVED:

CITY OF LA VERNE

CITY UTILITY ENGINEER

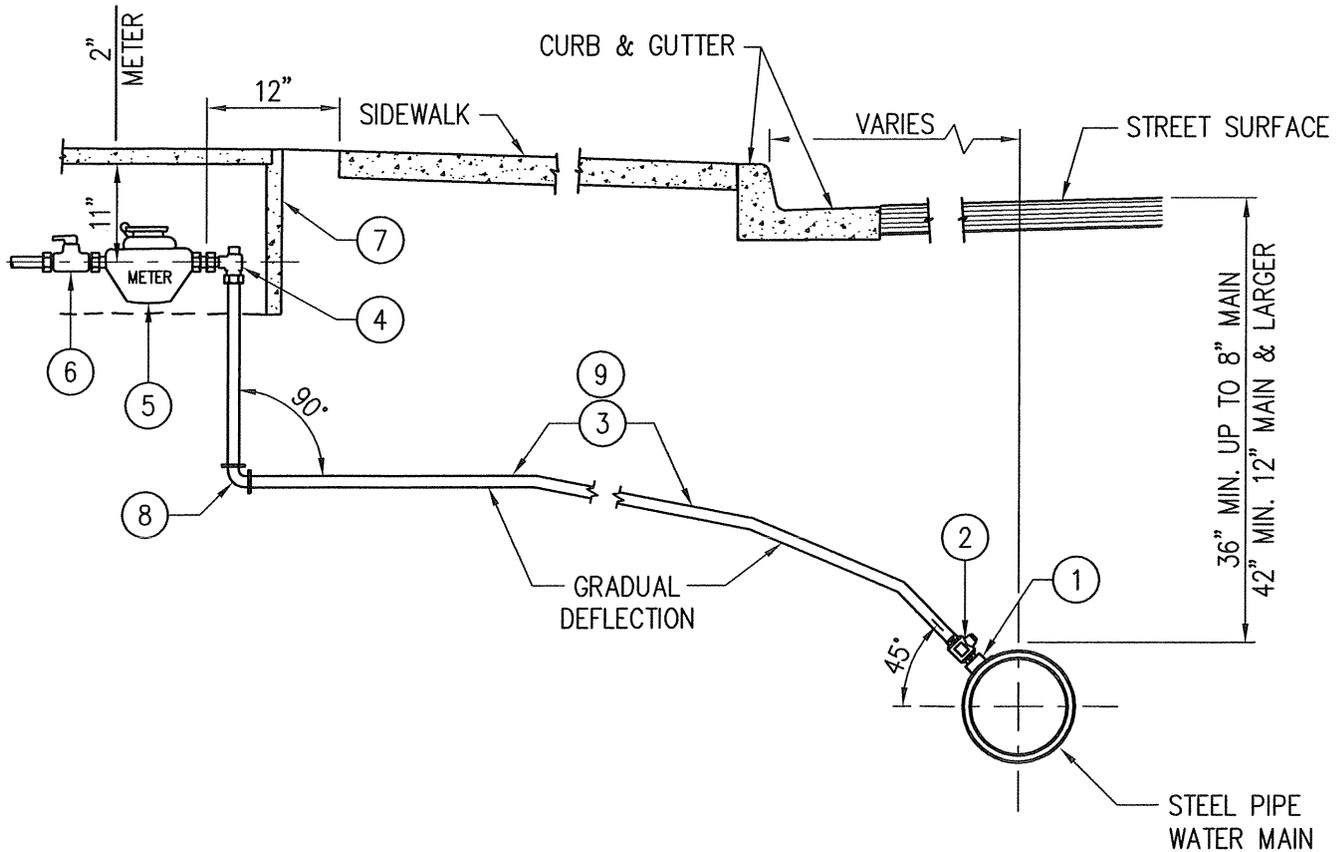
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9/4/11
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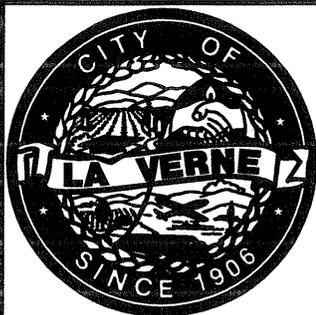
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DATE OF REVISION:	MARCH 2011	
STD. DWG. NO.	W-2	
	SHT. 2 OF 2	



GENERAL NOTES

- A. ALL REPLACEMENT OR NEW SERVICES SHALL BE NOT LESS THAN 5- FEET FROM ANY TREE, DRIVEWAY OR LIGHTPOLE AND NOT LESS THAN 10- FEET FROM ANY SEWER.
- B. METER BOX SHALL NOT BE INSTALLED IN CONCRETE IMPROVEMENTS. MAINTAIN LEVEL GROUND 36" MIN. ALL AROUND BOX INSTALLATION AND 6' VERTICAL CLEARANCE
- C. CHISEL "W" 3-INCH HIGH ON FACE OF CURB AT SERVICE LOCATION.
- D. CORPORATION STOPS CONNECTED TO WELD-ON COUPLINGS MUST HAVE NYLON BUSHING TO PREVENT CORROSION OF WATER MAIN AND MUST BE INSPECTED BY UTILITY INSPECTOR.
- E. CITY OF LA VERNE UTILITY INSPECTOR WILL INSPECT INSTALLATION BEFORE BACKFILLING.
- F. INSTALL REDUCED PRESSURE PRINCIPLE DEVICE ON SPECIFIED 2" SERVICE CONNECTION PER STD. DWG W-13.



DEPARTMENT OF PUBLIC WORKS

**2" SERVICE CONNECTION
STEEL PIPE WATER MAIN**

APPROVED:

CITY OF LA VERNE

CITY UTILITY ENGINEER

[Signature] 4/4/11
[Signature] 3/30/11

43296

RCE No.

DATE

DATE

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DATE OF REVISION:	MARCH 2011	
	STD. DWG. NO.	
	W-2a	
	SHT. 1 OF 2	

CONSTRUCTION NOTES FOR DUCTILE IRON WATER MAIN

- ① 2" SERVICE:
2-1/2" EXTRA HEAVY HALF COUPLING, 2-1/2"x2" NYLON BUSHING x IPT.
- ② CORPORATION STOP:
2" FORD MODEL NO. FB1100-7-Q-NL, MIPxQUICK JOINT
2" MUELLER MODEL NO. H-15023, MIPxCTS
- ③ SERVICE LINE:
2" TYPE "K" SOFT COPPER TUBING
- ④ ANGLE BALL SERVICE VALVES/CURB STOP:
2" FORD MODEL NO. BFA43-777W-Q-NL, CTSxFE, WITH CF31-77-NL, METER FLANGExFIP
2" MUELLER MODEL NO. B-24276, CTSxFE
- ⑤ METER:
2" - TO BE SPECIFIED BY DIRECTOR OF PUBLIC WORKS.
NOTE: 2" METER MAY REQUIRE A BACKFLOW DEVICE SEE STD. DWG. W-13.
- ⑥ BALL METER VALVES:
2" FORD MODEL NO. BF13-777W-Q-HB-67S-NL WITH VALVE HANDLE
2" MUELLER MODEL NO. B-24335 WITH VALVE HANDLE B-20298
- ⑦ METER BOX:
FOR 2" METER SEE STD. DWG. W-16.
- ⑧ BEND:
2" 90° ELL. FORD MODEL NO. L44-77-Q-NL.
2" 90° ELL. MUELLER MODEL NO. H-15526
- ⑨ COUPLING:
2" STRAIGHT COUPLING FORD MODEL NO. C44-77-Q-NL
2" STRAIGHT COUPLING MUELLER MODEL NO. H-15403
(FOR SERVICE LINES OVER 20' IN LENGTH)



DEPARTMENT OF PUBLIC WORKS

2" SERVICE CONNECTION STEEL PIPE WATER MAIN

APPROVED:

CITY OF LA VERNE

CITY UTILITY ENGINEER

43296

RCE No.

4/4/11
DATE

3/31/11
DATE

SCALE:

AS SHOWN

DATE OF REVISION:

MARCH 2011

BY DATE

DESIGNED R.D.H. 03/11

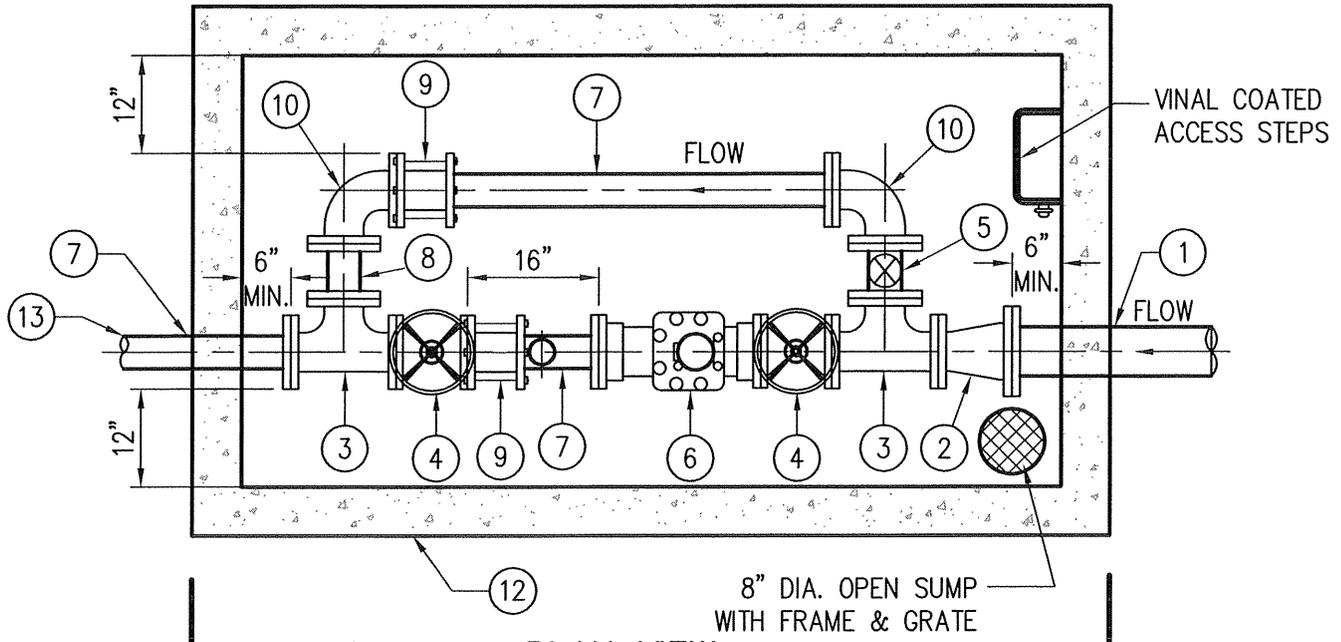
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CHECKED W.D.B. 03/11

STD. DWG. NO.

W-2a

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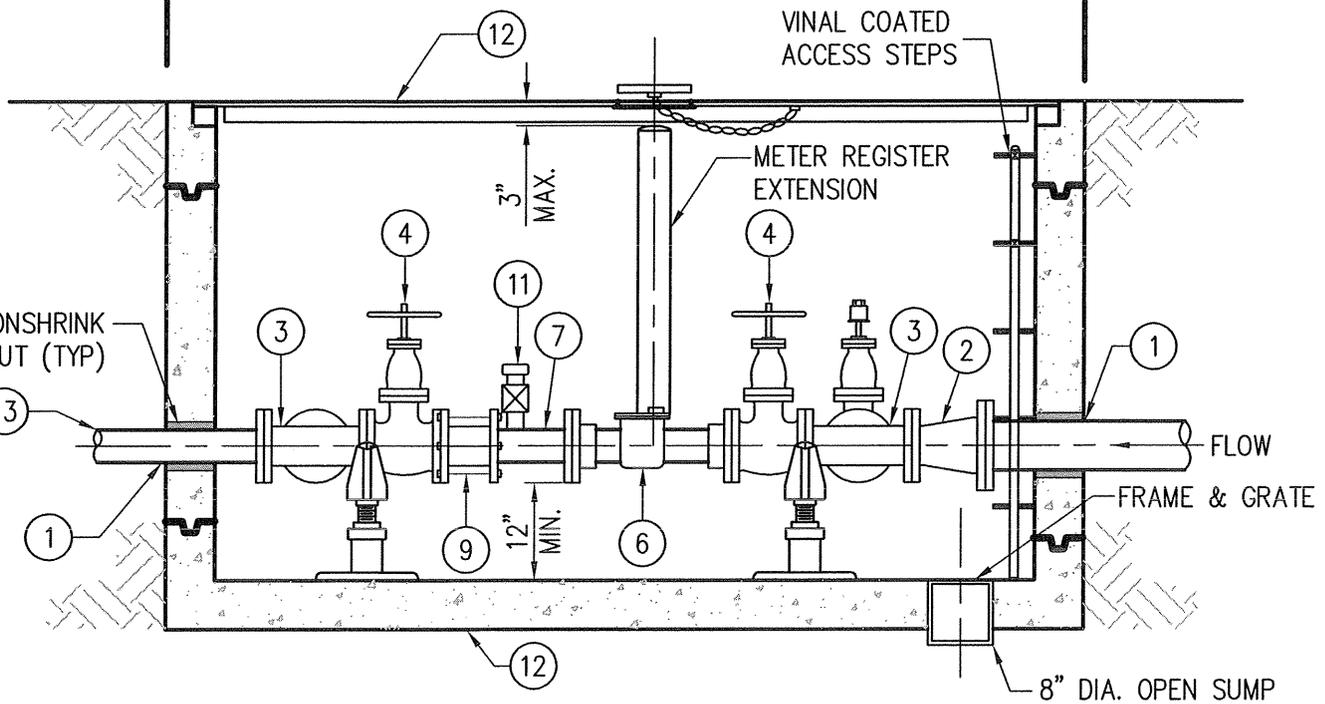


PLAN VIEW

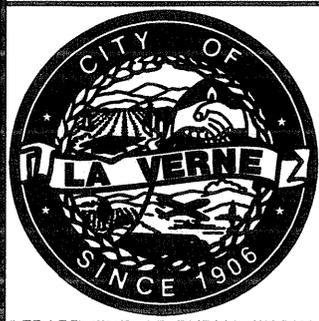
MAINTAINED BY
PROPERTY OWNER

MAINTAINED
BY CITY

RIGHT OF WAY



SECTION VIEW



DEPARTMENT OF PUBLIC WORKS

**3" TO 12" SERVICE METER
INSTALLATION**

APPROVED:

CITY OF LA VERNE

CITY UTILITY ENGINEER

43296

RCE No.

4/4/11
DATE

3/3/11
DATE

	BY	DATE
DESIGNED	R.D.H.	03/11
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SCALE: N.T.S.	STD. DWG. NO. W-3
DATE OF REVISION: MARCH 2011	SHT. 1 OF 2

CONSTRUCTION NOTES

- ① D.I. PIPE. TO MATCH METER SIZE (4" MIN.)
- ② 4" X 3" D.I. REDUCER, (FOR 3" SERVICE ONLY).
- ③ METER SIZE D.I. FLANGED TEE.
- ④ METER SIZE D.I. FLANGED GATE VALVE WITH HAND WHEEL.
- ⑤ METER SIZE D.I. FLANGED GATE VALVE WITH 2" VALVE NUT AND MCGARD VALVE LOCK BOX.
- ⑥ METER (GALLONS). METER TYPE AND BRAND TO BE DETERMINED BY CITY.
- ⑦ METER SIZE D.I. SPOOL PIPE, FLG. X PE.
- ⑧ METER SIZE D.I. SPOOL PIPE, FLG. X FLG.
- ⑨ METER SIZE D.I. FLANGED COUPLING ADAPTER.
- ⑩ METER SIZE D.I. 90°-BEND, FLG X FLG.
- ⑪ 2" FORD DOUBLE STRAP BRASS SADDLE (MODEL NO. 202B-IP7) WITH
2" FORD MODEL CORPORATION STOP (MODEL NO. FB1700-7-NL) OR
2" MUELLER MODEL CORPORATION STOP (MODEL NO. B-20046, MIPxFIP)
- ⑫ BROOKS PRODUCTS 700 SERIES SECTIONAL METER VAULT WITH METER READING LID.
LID STYLE AND STRUCTURAL SUPPORT SHALL BE DETERMINED SPECIFICALLY FOR EACH INSTALLATION,
SUBMITTAL PRIOR TO INSTALLATION IS REQUIRED.
- ⑬ INSTALL REDUCED PRESSURE PRINCIPLE DEVICE ON SPECIFIED SERVICE CONNECTION PER STD. DWG W-13.



DEPARTMENT OF PUBLIC WORKS

3" TO 12" SERVICE METER INSTALLATION

APPROVED:

CITY OF LA VERNE

CITY UTILITY ENGINEER

43296

RCE No.

4/4/11
DATE

3/31/11
DATE

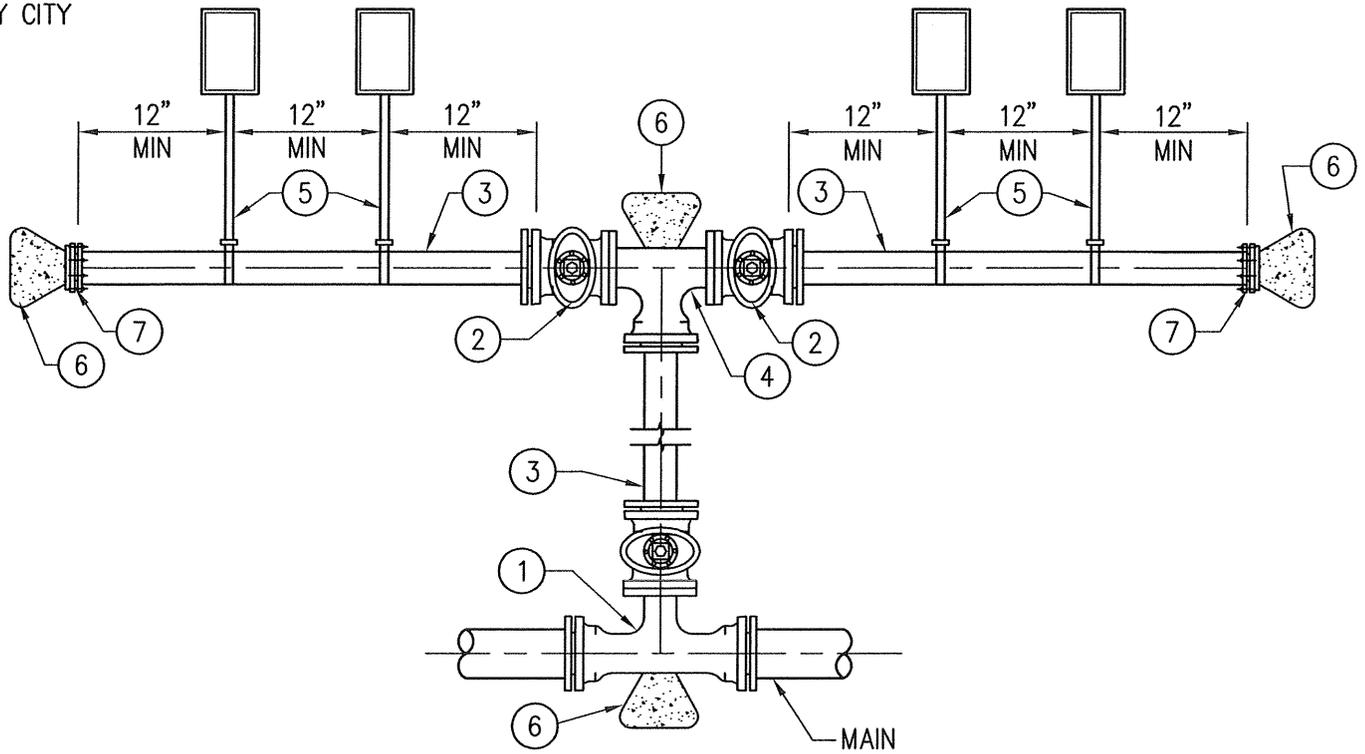
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SCALE: N.T.S.	STD. DWG. NO. W-3	
DATE OF REVISION: MARCH 2011	SHT. 2 OF 2	

TO BE MAINTAINED BY OWNER

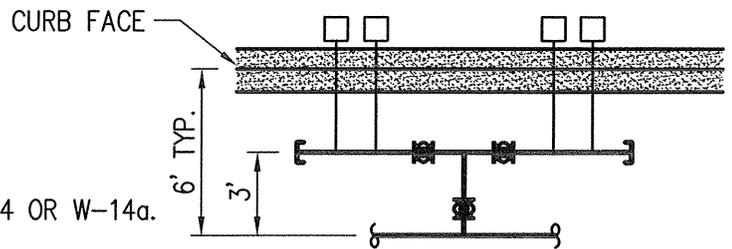
ROW

TO BE MAINTAINED BY CITY



PLAN VIEW

SIDEWALK



MATERIALS

- (1) TEE AND VALVE ASSEMBLY – SEE STD. DWG. W-14 OR W-14a.
- (2) 4" DUCTILE IRON GATE VALVE, FLG x MJ.
- (3) 4" DUCTILE IRON PIPE, CLASS 52
- (4) DUCTILE IRON TEE, FLG x FLG x MJ (SHORT BODY MAY BE USED)
- (5) SERVICE INSTALLATION – SEE STD. DWG. W-1 OR W-2.
- (6) THRUST BLOCK – SEE STD. DWG. W-19
- (7) 4" DUCTILE IRON END CAP



DEPARTMENT OF PUBLIC WORKS

**MANIFOLD ASSEMBLY FOR
4 TO 10 SERVICES**

APPROVED:

CITY OF LA VERNE

CITY UTILITY ENGINEER

43296

RCE No.

4/4/11

DATE

3/3/11

DATE

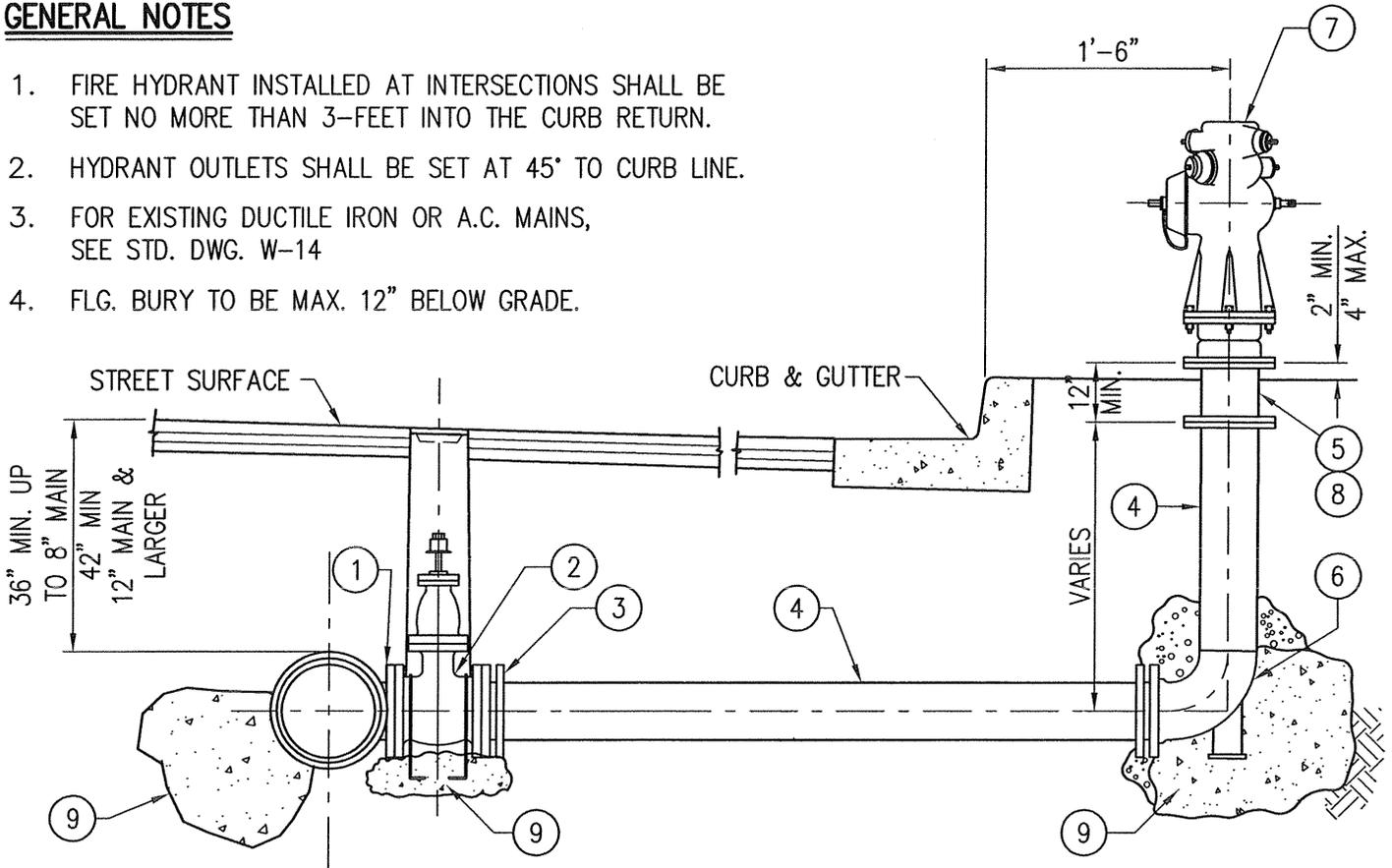
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DRAWN	J.T.	03/11
CHECKED	W.D.B.	03/11
SCALE: N.T.S.	STD. DWG. NO. W-4	
DATE OF REVISION: MARCH 2011		SHT. 1 OF 1

CONSTRUCTION NOTES

- ① DUCTILE IRON TEE, MJxMJxFE, SEE GENERAL NOTE #3
- ② 6" FExMJ RESILIENT WEDGE GATE VALVE, A.W.W.A. STANDARD C-509-09, WITH ADJUSTABLE VALVE CAN PER STD. DWG. W-17.
- ③ FORD UNIFLANGE DUCTILE IRON RESTRAINT
- ④ 6" DUCTILE IRON PIPE, CLASS 52 (TYTON JOINT), (IF LONGER THAN 20' USE FIELD GASKETS)
- ⑤ 6" DUCTILE IRON SPOOL, FExFE, 6 BOLT.
- ⑥ 6" DUCTILE IRON BURY, MJxFE, 6 BOLT LENGTH AS REQUIRED.
- ⑦ FIRE HYDRANT HEAD - BRONZE BODY 6"x4"x2-1/2", JAMES JONES MODEL J-3700.
- ⑧ ABOVE GRADE PIPE SHALL RECEIVE PRIMER COAT OF RED OXIDE PRIMER AND TWO COATS OF DUNN-EDWARDS, INDUSTRIAL MAINTENANCE ENAMEL-GLOSS, 10-14 HIGH VISIBILITY YELLOW.
- ⑨ THRUST BLOCK PER STANDARD DRAWING NO. W-19.

GENERAL NOTES

1. FIRE HYDRANT INSTALLED AT INTERSECTIONS SHALL BE SET NO MORE THAN 3- FEET INTO THE CURB RETURN.
2. HYDRANT OUTLETS SHALL BE SET AT 45° TO CURB LINE.
3. FOR EXISTING DUCTILE IRON OR A.C. MAINS, SEE STD. DWG. W-14
4. FLG. BURY TO BE MAX. 12" BELOW GRADE.



DEPARTMENT OF PUBLIC WORKS

FLANGED FIRE HYDRANT ASSEMBLY FOR DUCTILE IRON AND AC PIPE WATER MAIN

APPROVED:

CITY OF LA VERNE

CITY UTILITY ENGINEER

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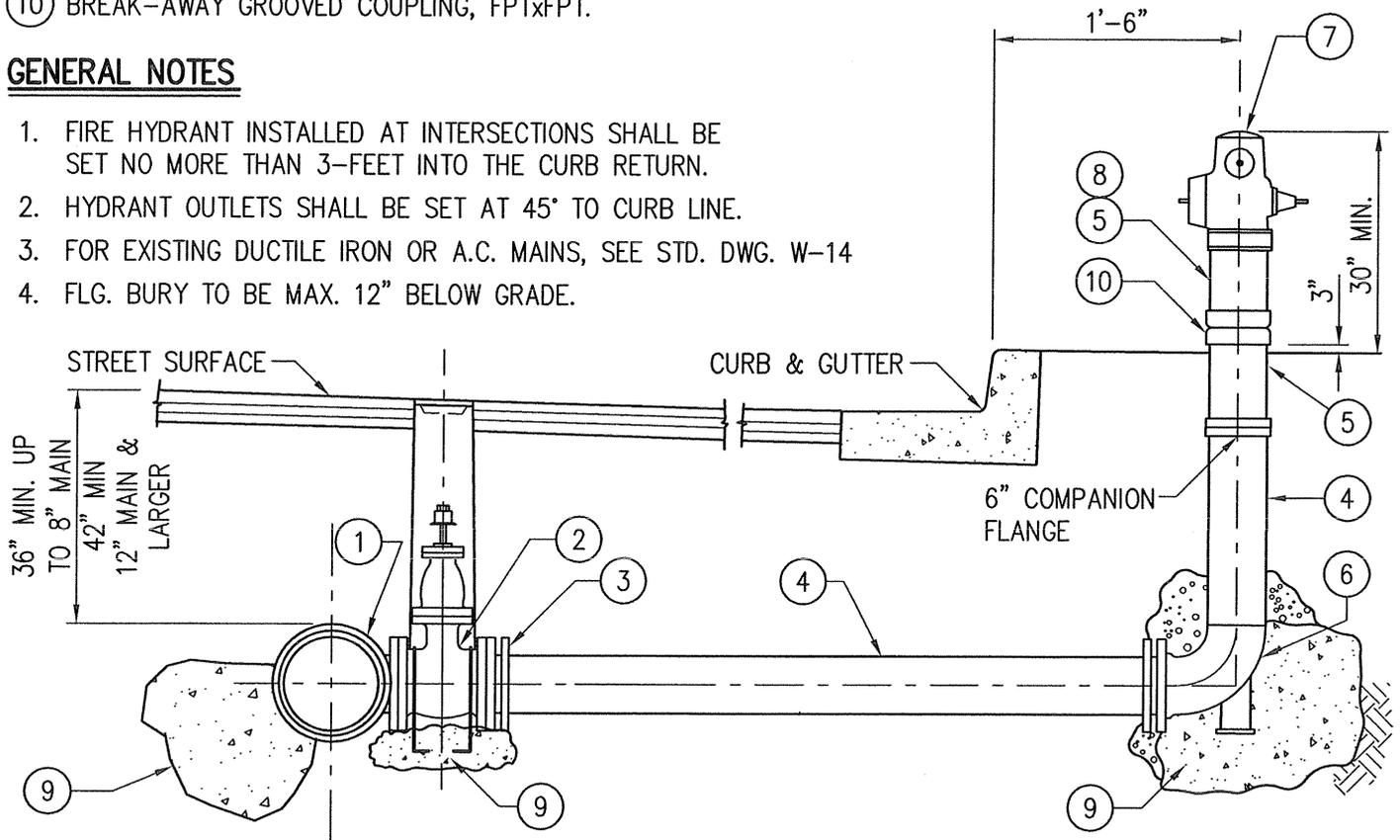
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SCALE: N.T.S.	STD. DWG. NO.	
DATE OF REVISION: MARCH 2011	W-5	
	SHT. 1 OF 1	

CONSTRUCTION NOTES

- ① DUCTILE IRON TEE, MJxMJxFE, SEE GENERAL NOTE #3
- ② 6" FExMJ RESILIENT WEDGE GATE VALVE, A.W.W.A. STANDARD C-509-09, WITH ADJUSTABLE VALVE CAN PER STD. DWG. W-17.
- ③ FORD UNIFLANGE DUCTILE IRON RESTRAINT
- ④ 6" DUCTILE IRON PIPE ,CLASS 52 (TYTON JOINT). (IF LONGER THAN 20' USE FIELD GASKETS)
- ⑤ 6" STEEL PIPE, SCHEDULE 40, MPTxMPT, WITH SCOTCHKOTE 134 FUSION BONDED EPOXY INSIDE AND TNE MEC 115 PRIME COATING OUTSIDE,
COAT THREADS WITH SIMPSON STRONGTIE 2-PART EPOXY QUICK SET
- ⑥ 6" DUCTILE IRON BURY, MJxFE, WITH 6" COMPANION FLANGE.
- ⑦ FIRE HYDRANT HEAD – BRONZE BODY 6"x4"x2-1/2", JAMES JONES MODEL J-3708, FPT.
- ⑧ ABOVE GRADE PIPE SHALL RECEIVE PRIMER COAT OF RED OXIDE PRIMER AND TWO COATS OF DUNN-EDWARDS, INDUSTRIAL MAINTENANCE ENAMEL-GLOSS, 10-14 HIGH VISIBILITY YELLOW.
- ⑨ THRUST BLOCK PER STANDARD DRAWING NO. W-19.
- ⑩ BREAK-AWAY GROOVED COUPLING, FPTxFPT.

GENERAL NOTES

1. FIRE HYDRANT INSTALLED AT INTERSECTIONS SHALL BE SET NO MORE THAN 3- FEET INTO THE CURB RETURN.
2. HYDRANT OUTLETS SHALL BE SET AT 45° TO CURB LINE.
3. FOR EXISTING DUCTILE IRON OR A.C. MAINS, SEE STD. DWG. W-14
4. FLG. BURY TO BE MAX. 12" BELOW GRADE.



DEPARTMENT OF PUBLIC WORKS

THREADED FIRE HYDRANT ASSEMBLY FOR DUCTILE IRON AND AC PIPE WATER MAIN

APPROVED:

CITY OF LA VERNE

CITY UTILITY ENGINEER

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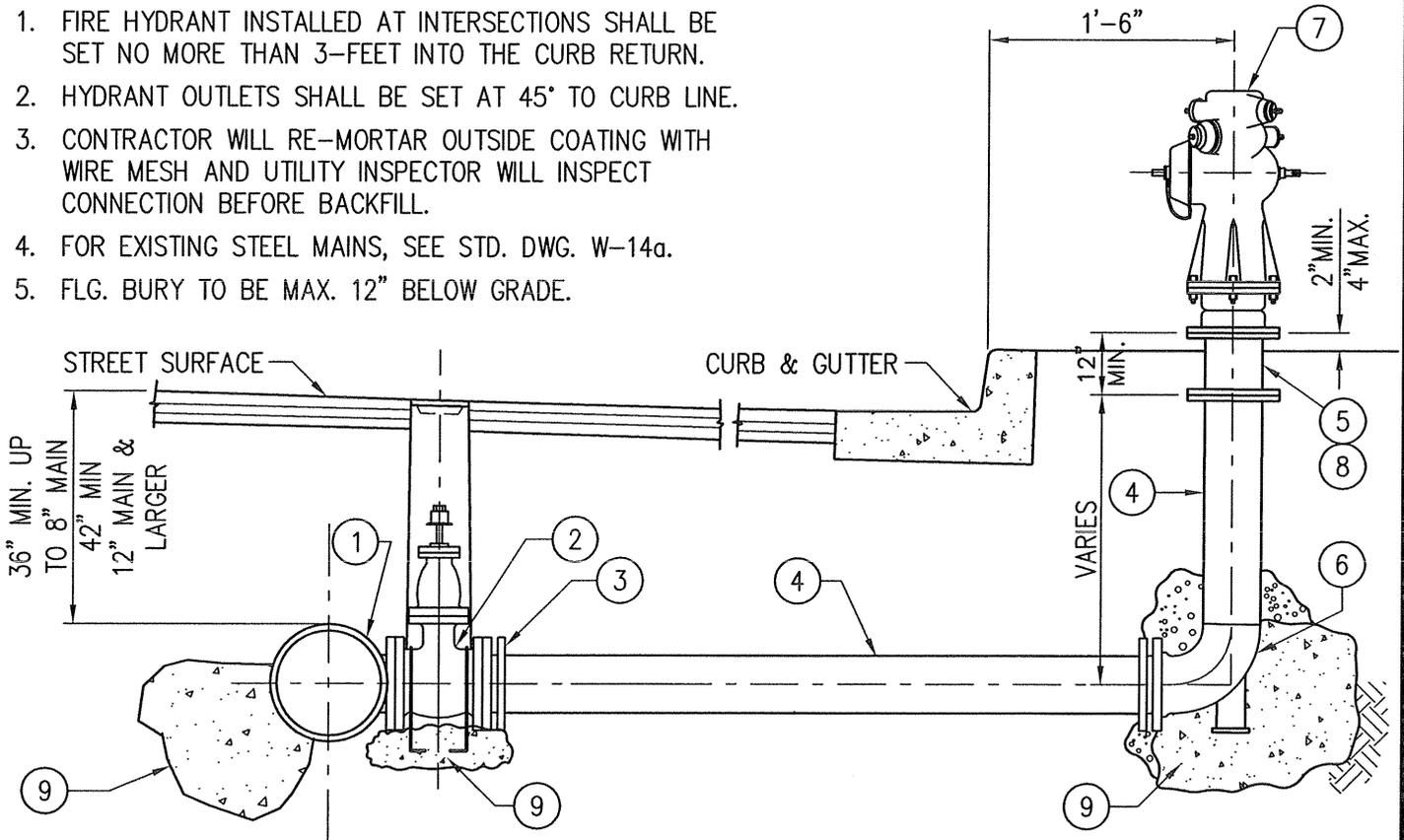
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CHECKED	W.D.B.	03/11
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N.T.S.	W-5a	
DATE OF REVISION:	MARCH 2011	
	SHT. 1 OF 1	

CONSTRUCTION NOTES

- ① STEEL TEE, FExFExFE, SEE GENERAL NOTE #4
- ② 6" FExMJ RESILIENT WEDGE GATE VALVE, A.W.W.A. STANDARD C-509.09, WITH ADJUSTABLE VALVE CAN PER STD. DWG. W-17.
- ③ FORD UNIFLANGE DUCTILE IRON RESTRAINT
- ④ 6" DUCTILE IRON PIPE, CLASS 52 (TYTON JOINT). (IF LONGER THAN 20' USE FIELD GASKETS)
- ⑤ 6" DUCTILE IRON SPOOL, FExFE, 6 BOLT.
- ⑥ 6" DUCTILE IRON BURY, MJxFE, 6 BOLT LENGTH AS REQUIRED.
- ⑦ FIRE HYDRANT HEAD - BRONZE BODY 6"x4"x2-1/2", JAMES JONES MODEL J-3700.
- ⑧ ABOVE GRADE PIPE SHALL RECEIVE PRIMER COAT OF RED OXIDE PRIMER AND TWO COATS OF DUNN-EDWARDS, INDUSTRIAL MAINTENANCE ENAMEL-GLOSS, 10-14 HIGH VISIBILITY YELLOW.
- ⑨ THRUST BLOCK PER STANDARD DRAWING NO. W-19.

GENERAL NOTES

1. FIRE HYDRANT INSTALLED AT INTERSECTIONS SHALL BE SET NO MORE THAN 3- FEET INTO THE CURB RETURN.
2. HYDRANT OUTLETS SHALL BE SET AT 45° TO CURB LINE.
3. CONTRACTOR WILL RE-MORTAR OUTSIDE COATING WITH WIRE MESH AND UTILITY INSPECTOR WILL INSPECT CONNECTION BEFORE BACKFILL.
4. FOR EXISTING STEEL MAINS, SEE STD. DWG. W-14a.
5. FLG. BURY TO BE MAX. 12" BELOW GRADE.



DEPARTMENT OF PUBLIC WORKS

FLANGED FIRE HYDRANT ASSEMBLY FOR STEEL PIPE WATER MAIN

APPROVED:

CITY OF LA VERNE

CITY UTILITY ENGINEER

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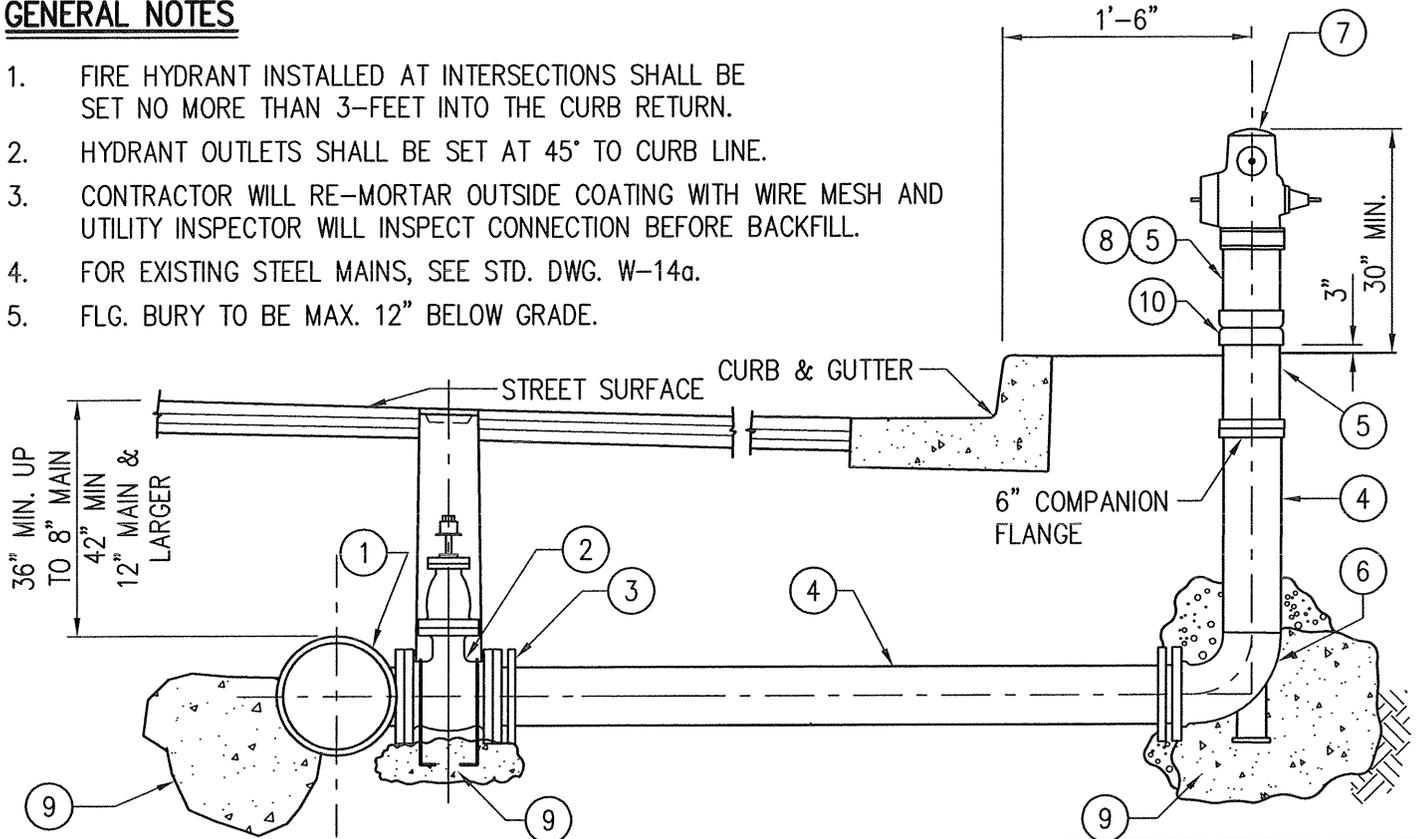
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SCALE: N.T.S.	STD. DWG. NO.	
DATE OF REVISION: MARCH 2011	W-6	
	SHT. 1 OF 1	

CONSTRUCTION NOTES

- ① STEEL TEE, FExFExFE, SEE GENERAL NOTE #4
- ② 6" FExMJ RESILIENT WEDGE GATE VALVE, A.W.W.A. STANDARD C-509.09, WITH ADJUSTABLE VALVE CAN PER STD. DWG. W-17.
- ③ FORD UNIFLANGE DUCTILE IRON RESTRAINT
- ④ 6" DUCTILE IRON PIPE, CLASS 52 (TYTON JOINT). (IF LONGER THAN 20' USE FIELD GASKETS)
- ⑤ 6" STEEL PIPE, SCHEDULE 40, MPTxMPT, WITH SCOTCHKOTE 134 FUSION BONDED EPOXY INSIDE AND TNEMEC 115 PRIME COATING OUTSIDE. COAT THREADS WITH SIMPSON STRONGTIE 2-PART EPOXY QUICK SET
- ⑥ 6" DUCTILE IRON BURY, MJxFE, WITH 6" COMPANION FLANGE.
- ⑦ FIRE HYDRANT HEAD - BRONZE BODY 6"x4"x2-1/2", JAMES JONES MODEL J-3708, FPT.
- ⑧ ABOVE GRADE PIPE SHALL RECEIVE PRIMER COAT OF RED OXIDE PRIMER AND TWO COATS OF DUNN-EDWARDS, INDUSTRIAL MAINTENANCE ENAMEL-GLOSS, 10-14 HIGH VISIBILITY YELLOW.
- ⑨ THRUST BLOCK PER STANDARD DRAWING NO. W-19.
- ⑩ BREAK-AWAY GROOVED COUPLING, FPTxFPT.

GENERAL NOTES

1. FIRE HYDRANT INSTALLED AT INTERSECTIONS SHALL BE SET NO MORE THAN 3- FEET INTO THE CURB RETURN.
2. HYDRANT OUTLETS SHALL BE SET AT 45° TO CURB LINE.
3. CONTRACTOR WILL RE-MORTAR OUTSIDE COATING WITH WIRE MESH AND UTILITY INSPECTOR WILL INSPECT CONNECTION BEFORE BACKFILL.
4. FOR EXISTING STEEL MAINS, SEE STD. DWG. W-14a.
5. FLG. BURY TO BE MAX. 12" BELOW GRADE.

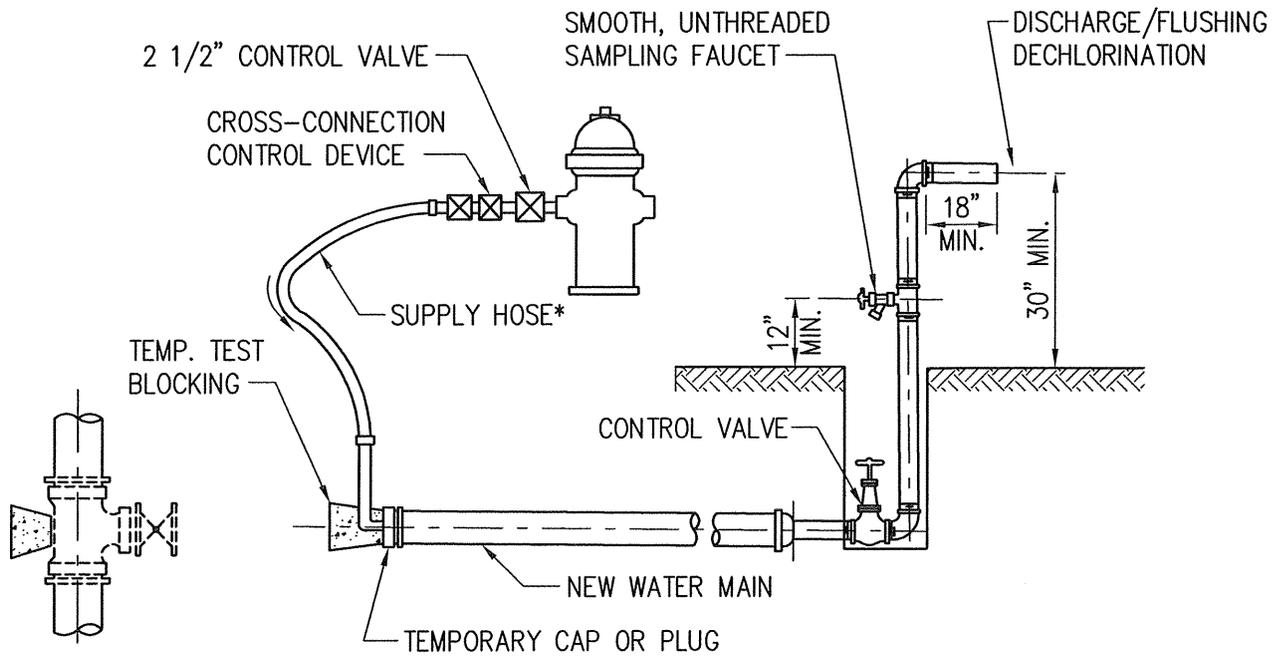


DEPARTMENT OF PUBLIC WORKS

**THREADED FIRE HYDRANT ASSEMBLY
FOR STEEL PIPE WATER MAIN**

APPROVED: *[Signature]* DATE: 4/4/11
 CITY OF LA VERNE
[Signature] 43296 DATE: 3/31/11
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	BY	DATE
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DATE OF REVISION: MARCH 2011	SHT. 1 OF 1	



*CLEAN POTABLE-WATER HOSE ONLY. SIZE AND NUMBER OF TAPS PER TABLE BELOW. THIS HOSE MUST BE REMOVED DURING THE HYDROSTATIC PRESSURE TEST.

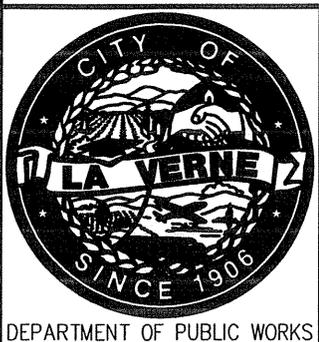
NOTE: DETAIL APPLIES TO PIPE WITH DIAMETERS 4" (100 mm) THROUGH 16" (300 mm). ALL LARGER SIZES MUST BE HANDLED ON A CASE-BY-CASE BASIS.

TABLE: REQUIRED FLOW AND OPENINGS TO FLUSH PIPELINES (40 PSI [276 kPa] RESIDUAL PRESSURE IN WATER MAIN)*

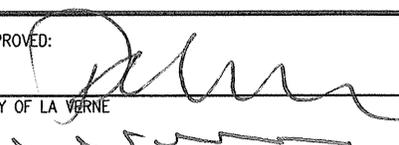
PIPE DIAMETER in. (mm)	FLOW REQUIRED TO PRODUCE 2.5 ft/S (approx.) VELOCITY IN MAIN		SIZE OF TAP, in. (mm)			NUMBER OF 2-1/2 IN. (64-mm) HYDRANT OUTLETS
	gpm	(L/s)	1(25)	1-1/2(38)	2(51 mm)	
4 (100)	100	(6.3)	1	-	-	1
6 (150)	200	(12.6)	-	1	-	1
8 (200)	400	(25.2)	-	2	1	1
10 (250)	600	(37.9)	-	3	2	1
12 (300)	900	(56.8)	-	-	3	2
16 (400)	1600	(100.9)	-	-	4	2

*WITH A 40-PSI (276-kPa) PRESSURE IN THE MAIN AND THE HYDRANT FLOWING TO ATMOSPHERE, A 2-1/2" (64mm) HYDRANT OUTLET WILL DISCHARGE APPROXIMATELY 1000 GPM (63.1 L/s); AND A 4-1/2" (114-mm) HYDRANT OUTLET WILL DISCHARGE APPROXIMATELY 2500 GPM (160 L/s).

**NUMBER OF TAPS ON PIPE BASED ON DISCHARGE THROUGH 5' (1.5 m) OF GALVANIZED IRON (GI) PIPE WITH ONE 90° ELBOW.



**2" BLOW-OFF FOR
FUTURE EXTENSION**

APPROVED: 

CITY OF LA VERNE

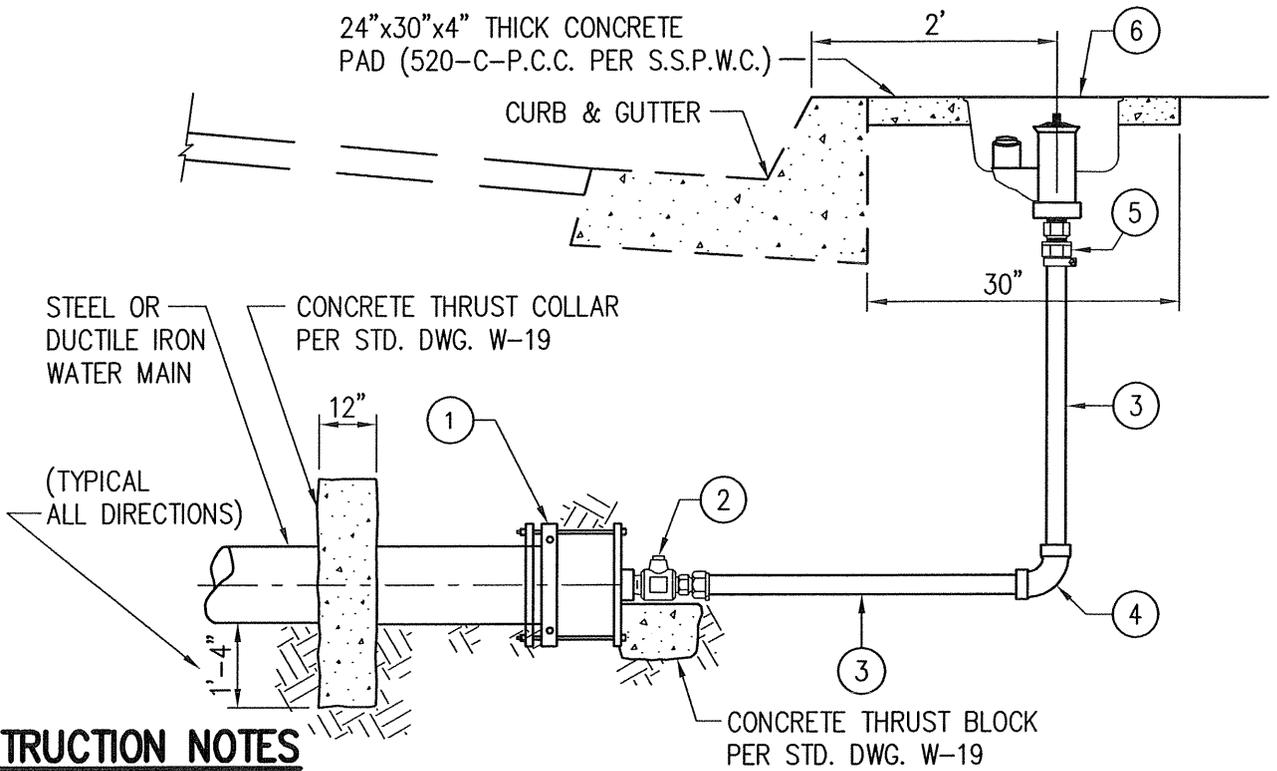
CITY UTILITY ENGINEER

43296 RCE No.

DATE: 4/4/11

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DATE OF REVISION:	MARCH 2011	
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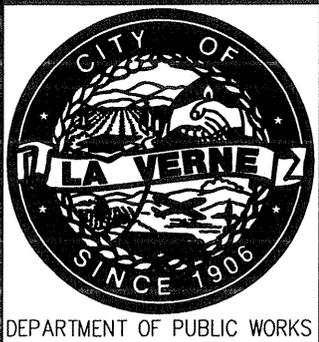


CONSTRUCTION NOTES

- ① FORD END CAP COUPLING STYLE FEC WITH 2" F.I.P. THREADS, SERIES 1400 WEDGE ACTION RETAINER GLAND.
- ② CORPORATION STOP:
 2" FORD MODEL NO. FB1100-7-NL, MIPxCTS
 2" MUELLER MODEL NO. H-15023, MIPxCTS
 2" FORD MODEL NO. C84-77-NL, CTSxMIP
- ③ 2" TYPE "K" SOFT COPPER TUBING
- ④ 2"-90° BRASS ELL, CTSxCTS
- ⑤ STRAIGHT COUPLING:
 2" FORD MODEL NO. C84-77-NL, CTSxMIP
 2" MUELLER MODEL NO. H-15429, CTSxMIP
- ⑥ BLOW-OFF HYDRANT, ECLIPSE NO. 85 WITH 2-1/2" N.S.T. OUTLET.

GENERAL NOTES

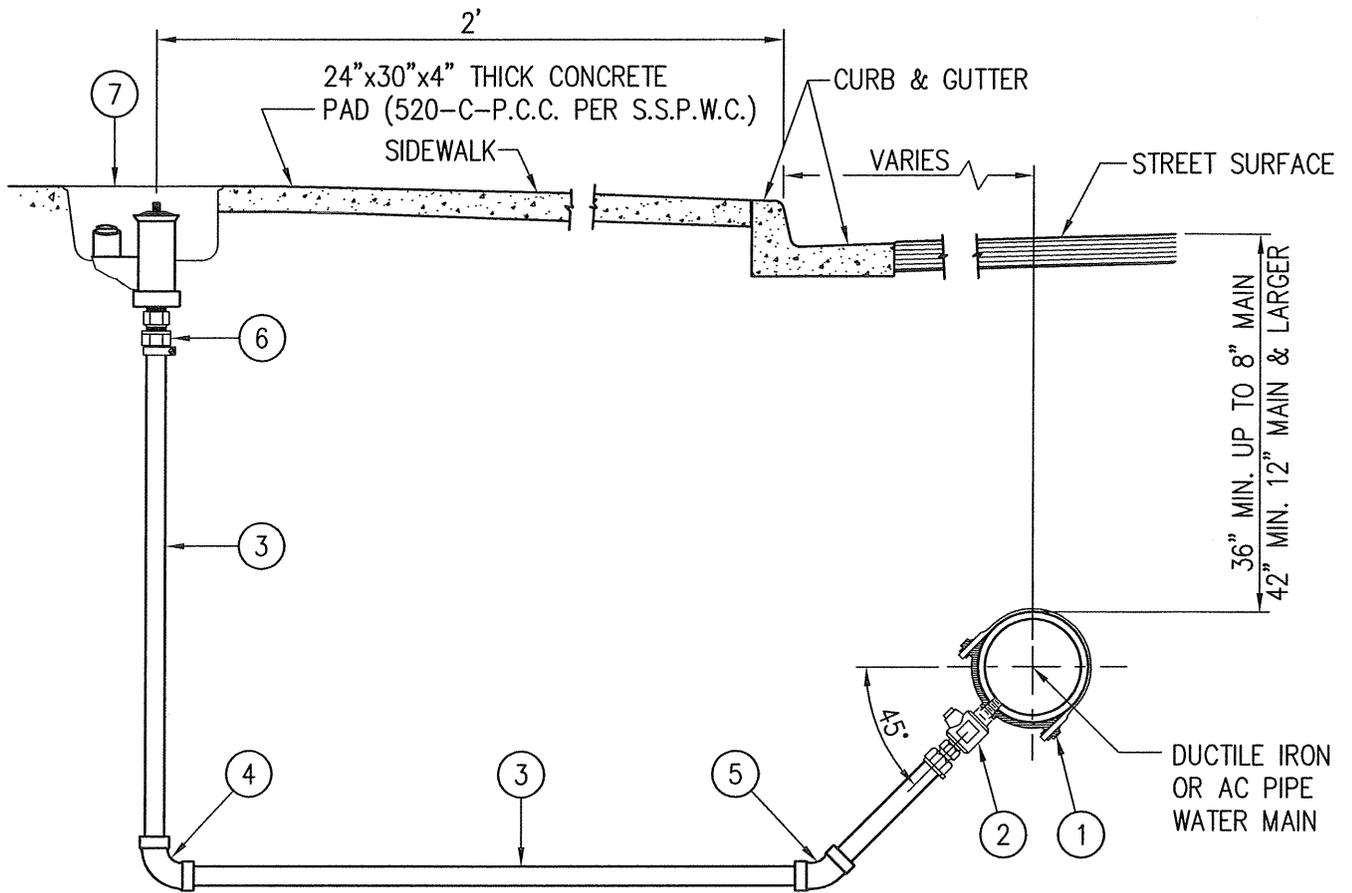
- 1. A BLOW-OFF HYDRANT SHALL BE INSTALLED IN CUL-DE-SAC STREETS GREATER THAN 200 FEET IN LENGTH OR THOSE CUL-DE-SACS WITHOUT A FIRE HYDRANT AT THE END OF THE STREET.
- 2. FULL SIZE MAIN SHALL CONTINUE AT LEAST TO THE CENTER OF THE CUL-DE-SAC.
- 3. NO HOUSE SERVICE CONNECTIONS WILL BE ALLOWED ON THE 2" PIPE. THE BLOW-OFF HYDRANT SHALL BE LOCATED ON THE PROJECTION OF A LOT LINE.
- 4. FOR PIPE SIZES LARGER THAN 12", USE FORD STEEL END CAP COUPLING, STYLE FC4.



2" BLOW-OFF ASSEMBLY

APPROVED: *[Signature]* DATE 4/4/11
 CITY OF LA VERNE
[Signature] 43296 DATE 3/31/11
 CITY UTILITY ENGINEER RCE No. DATE

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DATE OF REVISION: MARCH 2011	SHT. 1 OF 1	



CONSTRUCTION NOTES

- ① SADDLE:
2" FORD DOUBLE STRAP BRASS SADDLE MODEL NO. 202B-IP7
- ② CORPORATION STOP:
2" FORD MODEL NO. FB1100-7-Q-NL, MIPxQUICK JOINT
2" MUELLER MODEL NO. H-15023, MIPxCTS
- ③ SERVICE LINE:
2" TYPE "K" SOFT COPPER TUBING
- ④ BEND:
2" 90° ELL. FORD MODEL NO. L44-77-NL.
2" 90° ELL. MUELLER MODEL NO. H-15526
- ⑤ BEND:
2" 45° ELL. MUELLER MODEL NO. H-15528
- ⑥ STRAIGHT COUPLING
2" FORD MODEL NO. C84-77-NL, CTSxMIP
2" MUELLER MODEL NO. H-15429, CTSxMIP
- ⑦ BLOW-OFF HYDRANT, ECLIPSE NO. 85 WITH 2-1/2" N.S.T. OUTLET.



DEPARTMENT OF PUBLIC WORKS

**2" BLOW-OFF CONNECTION
DUCTILE IRON AND AC PIPE
WATER MAIN**

APPROVED:

CITY OF LA VERNE

CITY UTILITY ENGINEER

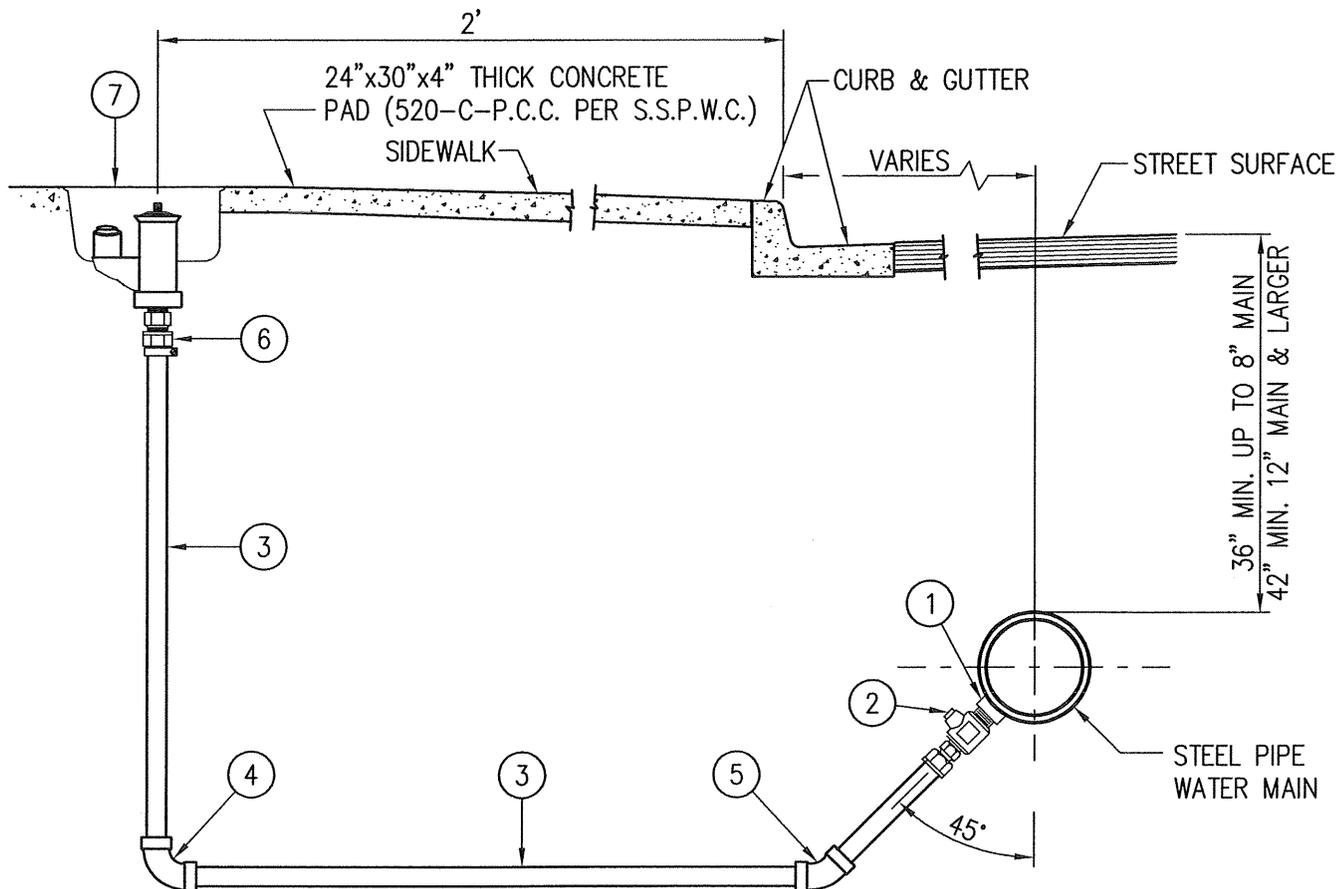
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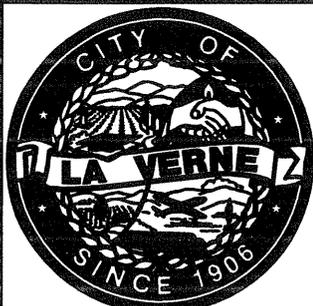
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DATE OF REVISION: MARCH 2011	SHT. 1 OF 1	



CONSTRUCTION NOTES

- ① 2" SERVICE:
2-1/2" EXTRA HEAVY HALF COUPLING, 2-1/2"x2" NYLON BUSHING x IPT.
- ② CORPORATION STOP:
2" FORD MODEL NO. FB1100-7-Q-NL, MIPxQUICK JOINT
2" MUELLER MODEL NO. H-15023, MIPxCTS
- ③ SERVICE LINE:
2" TYPE "K" SOFT COPPER TUBING
- ④ BEND:
2" 90° ELL. FORD MODEL NO. L44-77-NL.
2" 90° ELL. MUELLER MODEL NO. H-15526
- ⑤ BEND:
2" 45° ELL. MUELLER MODEL NO. H-15528
- ⑥ STRAIGHT COUPLING
2" FORD MODEL NO. C84-77-NL, CTSxMIP
2" MUELLER MODEL NO. H-15429, CTSxMIP
- ⑦ BLOW-OFF HYDRANT, ECLIPSE NO. 85 WITH 2-1/2" N.S.T. OUTLET.



DEPARTMENT OF PUBLIC WORKS

**2" BLOW-OFF CONNECTION
STEEL PIPE WATER MAIN**

APPROVED:

CITY OF LA VERNE

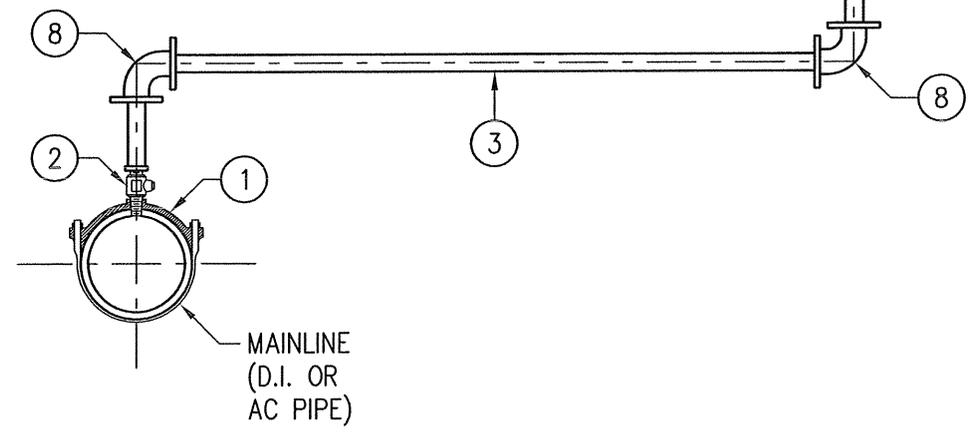
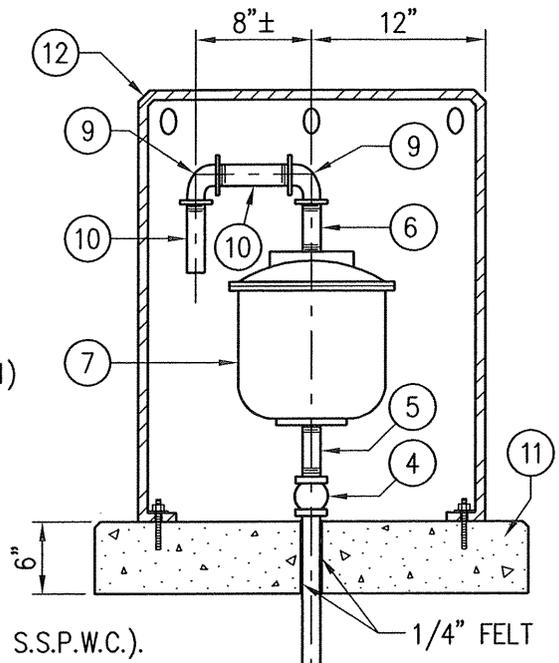
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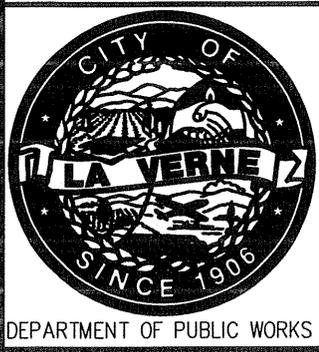
CONSTRUCTION NOTES FOR DUCTILE IRON AND AC PIPE WATER MAIN

- ① SADDLE:
1" FORD DOUBLE STRAP BRASS SADDLE MODEL NO. 202B-IP4
- ② CORPORATION STOP:
1" FORD MODEL NO. F1100-4-Q-NL, MIPxQUICK JOINT
1" MUELLER MODEL NO. H-15028, MIPxCTS
- ③ SERVICE LINE:
1" TYPE "K" SOFT COPPER TUBING
- ④ COUPLING:
1" FORD MODEL NO. C14-44-NL, CTSxFIP
1" MUELLER MODEL NO. H-15451, CTSxFIP
- ⑤ 1"x3" LONG BRASS NIPPLE, MIPxMIP AS NEEDED
- ⑥ 1"x3" LONG GALVANIZED NIPPLE, MIPxMIP AS NEEDED
- ⑦ COMBINATION AIR VALVES (SINGLE BODY):
1" CRISPIN VALVE MODEL NO. AL10 (SEE GENERAL NOTE #1)
1" APCO MODEL NO. 142 (SEE GENERAL NOTE #1)
- ⑧ 1" - 90° BRASS ELL, FIPxFIP.
- ⑨ 1" - 90° GALVANIZED ELL, FIPxFIP.
- ⑩ 1"x6" LONG GALVANIZED NIPPLE, MIPxMIP.
- ⑪ 2'-6"x2'-6"x6" THICK CONCRETE PAD (520-C-2500 PCC PER S.S.P.W.C.).
- ⑫ PROTECTIVE COVER:
PIPELINE PRODUCTS, INC. ADVANTAGE SERIES MODEL VACS-1830
COLOR SPECIFIED BY CITY.



GENERAL NOTE

1. FOR COMBINATION AIR VALVES SPECIFY IF OPERATING PRESSURE IS BELOW 10 PSI.



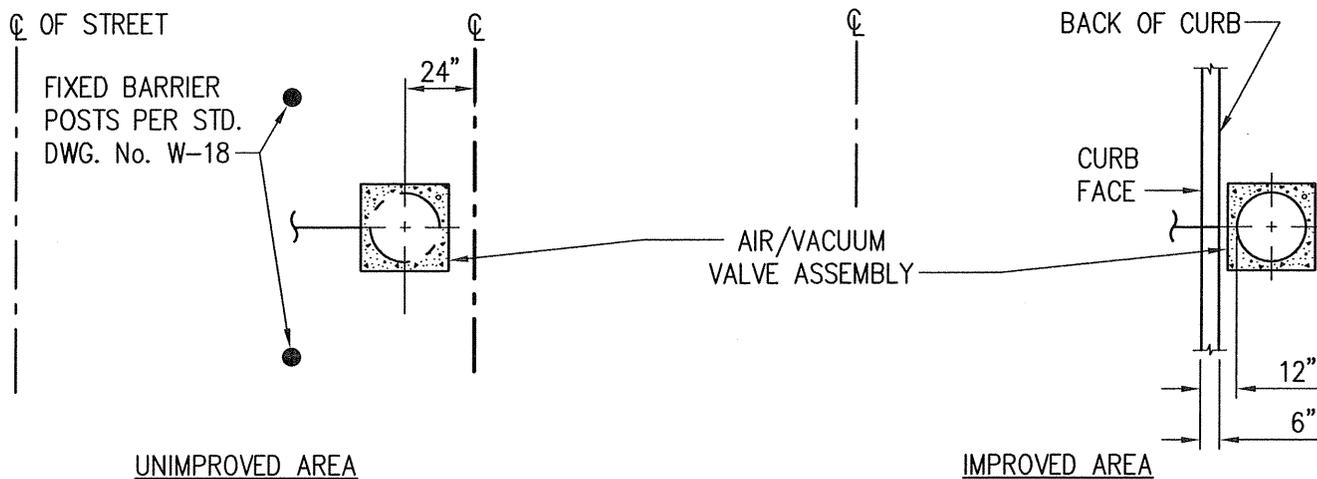
**1" AIR/VACUUM RELEASE VALVE ASSEMBLY
DUCTILE IRON AND AC PIPE WATER MAIN**

APPROVED: *[Signature]* DATE: 4/4/11
CITY OF LA VERNE
CITY UTILITY ENGINEER RCE No. 43296 DATE: 3/31/11

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DATE OF REVISION: MARCH 2011	SHT. 1 OF 2	

UNLESS OTHERWISE SPECIFIED ON PLANS

LOCATIONS:



GENERAL NOTES

1. ASSEMBLIES INSTALLED IN EASEMENTS, ROADS AND STREETS WITHOUT CURBS SHALL BE PROTECTED BY TWO GUARD POSTS. POSITION GUARD POSTS 24" IN FRONT OF AND 30" EACH SIDE OF ASSEMBLY. CROWN TOP OF BASE TO SHED WATER.
2. USE MANUFACTURER SPECIFIED OR APPROVED EQUAL.
3. PIPING SHALL BE INSTALLED PRIOR TO STREET PAVING.
4. A "W" SHALL BE CHISELED ON THE TOP OF CURB MARKING LOCATION, AFTER PIPING HAS BEEN INSTALLED.
5. NO CONNECTION OR TAP SHALL BE PLACED LESS THAN 24" FROM A VALVE, JOINT OR ADJACENT CONNECTION.
6. SET P.C.C. PAD 4" ABOVE GRADE IN UNIMPROVED AREAS.



DEPARTMENT OF PUBLIC WORKS

**1" AIR/VACUUM RELEASE VALVE
ASSEMBLY
DUCTILE IRON AND AC PIPE
WATER MAIN**

APPROVED:

CITY OF LA VERNE

CITY UTILITY ENGINEER

[Signature] 4/4/11
DATE
[Signature] 3/31/11
DATE

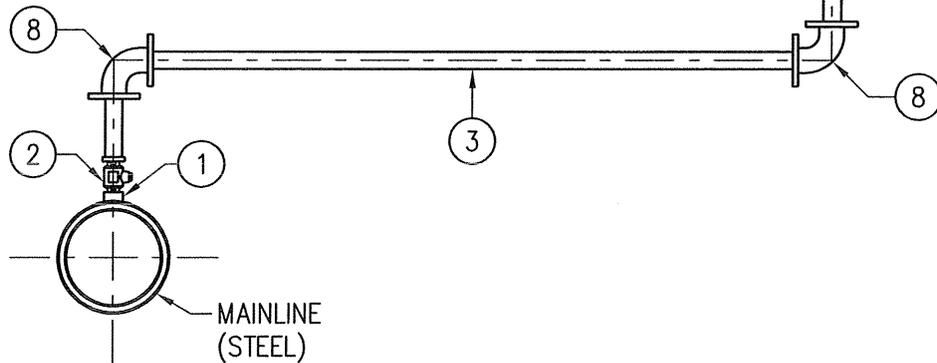
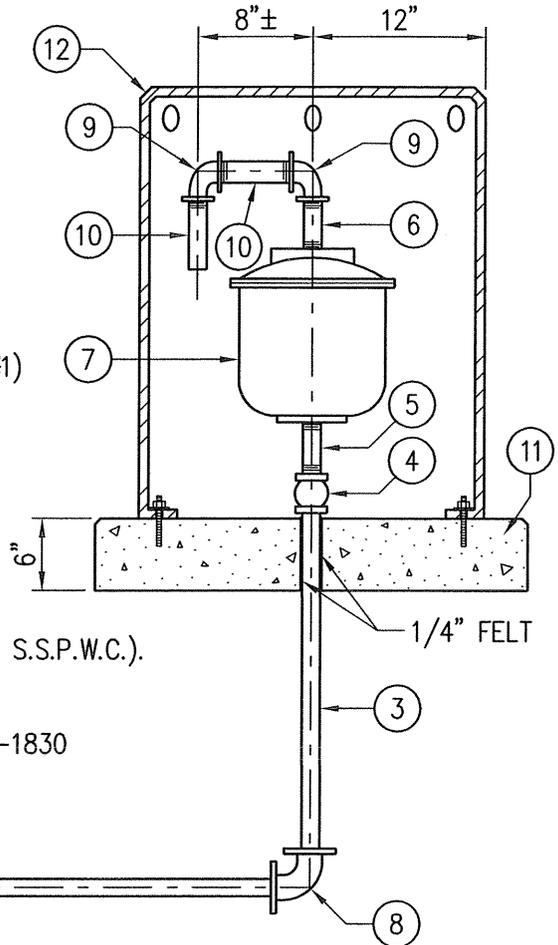
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DATE OF REVISION: MARCH 2011	SHT. 2 OF 2	

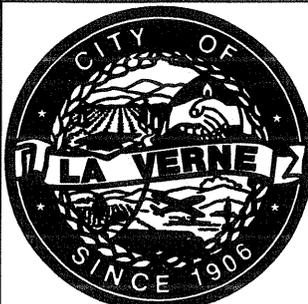
CONSTRUCTION NOTES FOR STEEL PIPE WATER MAIN

- ① 1" COMBINATION AIR VALVE:
1-1/2" EXTRA HEAVY HALF COUPLING, 1-1/2"x1" NYLON BUSHING
- ② CORPORATION STOP:
1" FORD MODEL NO. F1100-4-Q-NL, MIPxQUICK JOINT
1" MUELLER MODEL NO. H-15028, MIPxCTS
- ③ SERVICE LINE:
1" TYPE "K" SOFT COPPER TUBING
- ④ COUPLING:
1" FORD MODEL NO. C14-44-NL, CTSxFIP
1" MUELLER MODEL NO. H-15451, MIPxCTS
- ⑤ 1"x3" LONG BRASS NIPPLE, MIPxMIP AS NEEDED
- ⑥ 1"x3" LONG GALVANIZED NIPPLE, MIPxMIP AS NEEDED
- ⑦ COMBINATION AIR VALVES (SINGLE BODY):
1" CRISPIN VALVE MODEL NO. AL10 (SEE GENERAL NOTE #1)
1" APCO MODEL NO. 142 (SEE GENERAL NOTE #1)
- ⑧ 1" - 90° BRASS ELL, FIPxFIP.
- ⑨ 1" - 90° GALVANIZED ELL, FIPxFIP.
- ⑩ 1"x6" LONG GALVANIZED NIPPLE, MIPxMIP.
- ⑪ 2'-6"x2'-6"x6" THICK CONCRETE PAD (520-C-2500 PCC PER S.S.P.W.C.).
- ⑫ PROTECTIVE COVER:
PIPELINE PRODUCTS, INC. ADVANTAGE SERIES MODEL VACS-1830
COLOR SPECIFIED BY CITY.



GENERAL NOTE

1. FOR COMBINATION AIR VALVES SPECIFY IF OPERATING PRESSURE IS BELOW 10 P.S.I.
2. FOR PRESSURES OVER 80 P.S.I. USE STAINLESS STEEL BUSHINGS INSTEAD OF NYLON BUSHINGS.



DEPARTMENT OF PUBLIC WORKS

1" AIR/VACUUM RELEASE VALVE ASSEMBLY STEEL PIPE WATER MAIN

APPROVED:

CITY OF LA-VERNE

CITY UTILITY ENGINEER

43296

RCE No.

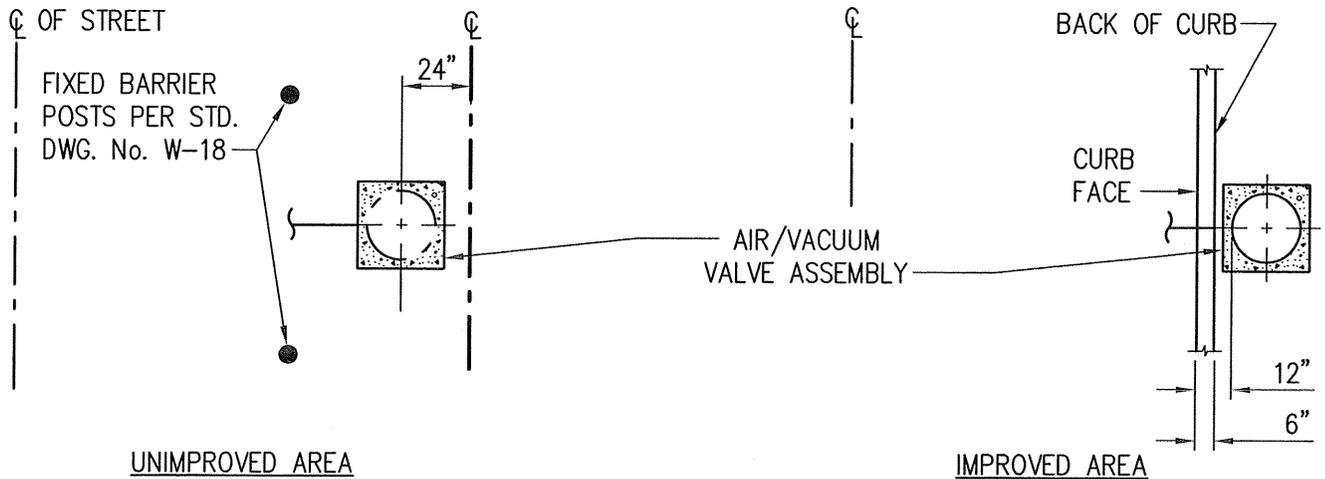
4/4/11
DATE

3/31/11
DATE

	BY	DATE
DESIGNED	R.D.H.	03/11
DRAWN	J.T.	03/11
CHECKED	W.D.B.	03/11
SCALE:	N.T.S.	
DATE OF REVISION:	MARCH 2011	
STD. DWG. NO.	W-9a	
	SHT. 1 OF 2	

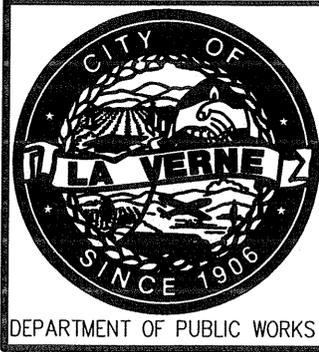
UNLESS OTHERWISE SPECIFIED ON PLANS

LOCATIONS:



GENERAL NOTES

1. ASSEMBLIES INSTALLED IN EASEMENTS, ROADS AND STREETS WITHOUT CURBS SHALL BE PROTECTED BY TWO GUARD POSTS. POSITION GUARD POSTS 24" IN FRONT OF AND 30" EACH SIDE OF ASSEMBLY. CROWN TOP OF BASE TO SHED WATER.
2. USE MANUFACTURER SPECIFIED OR APPROVED EQUAL.
3. PIPING SHALL BE INSTALLED PRIOR TO STREET PAVING.
4. A "W" SHALL BE CHISELED ON THE TOP OF CURB MARKING LOCATION, AFTER PIPING HAS BEEN INSTALLED.
5. NO CONNECTION OR TAP SHALL BE PLACED LESS THAN 24" FROM A VALVE, JOINT OR ADJACENT CONNECTION.
6. SET P.C.C. PAD 4" ABOVE GRADE IN UNIMPROVED AREAS.



**1" AIR/VACUUM RELEASE VALVE ASSEMBLY
STEEL PIPE WATER MAIN**

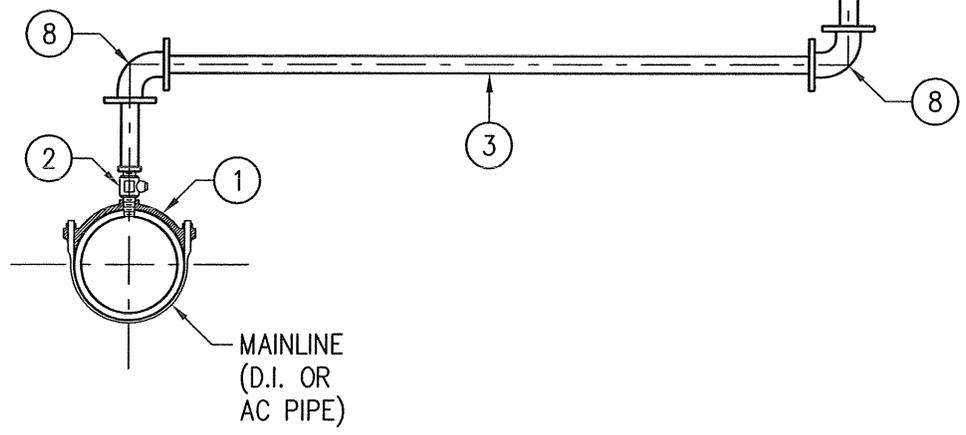
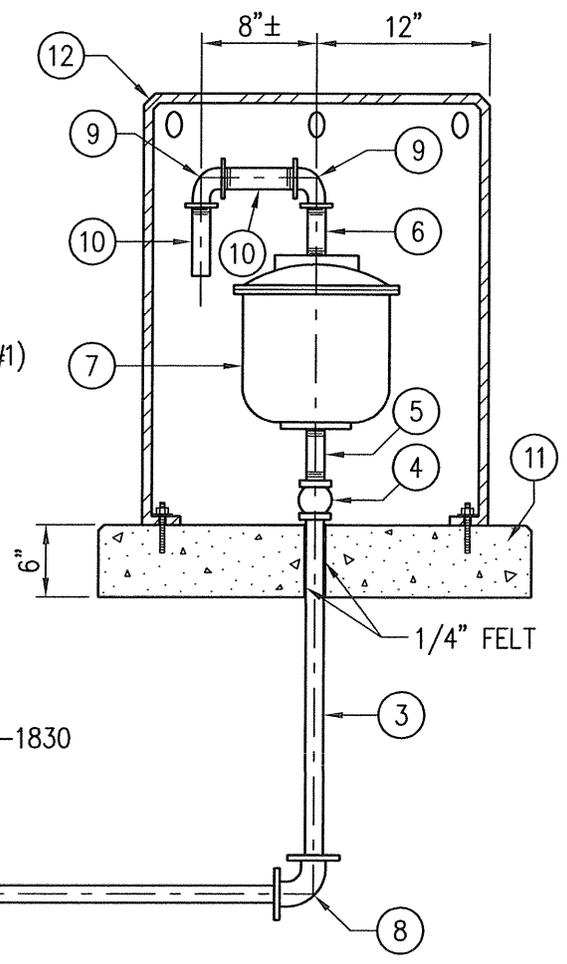
APPROVED: *[Signature]* 4/4/11
 CITY OF LA VERNE DATE

[Signature] 43296 3/31/11
 CITY UTILITY ENGINEER RCE No. DATE

	BY	DATE
DESIGNED	R.D.H.	03/11
DRAWN	J.T.	03/11
CHECKED	W.D.B.	03/11
SCALE: N.T.S.	STD. DWG. NO.	
DATE OF REVISION: MARCH 2011	W-9a	
	SHT. 2 OF 2	

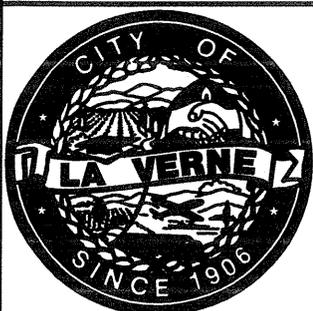
CONSTRUCTION NOTES FOR DUCTILE IRON AND AC PIPE WATER MAIN

- ① SADDLE:
2" FORD DOUBLE STRAP BRASS SADDLE MODEL NO. 202B-IP4
- ② CORPORATION STOP:
2" FORD MODEL NO. F1100-4-Q-NL, MIPxQUICK JOINT
2" MUELLER MODEL NO. H-15023, MIPxCTS
- ③ SERVICE LINE:
2" TYPE "K" SOFT COPPER TUBING
- ④ COUPLING:
2" FORD MODEL NO. C14-44-NL, CTSxFIP
2" MUELLER MODEL NO. H-15451, CTSxFIP
- ⑤ 2"x3" LONG BRASS NIPPLE, MIPxMIP AS NEEDED
- ⑥ 2"x3" LONG GALVANIZED NIPPLE, MIPxMIP AS NEEDED
- ⑦ COMBINATION AIR VALVES (SINGLE BODY):
2" CRISPIN VALVE MODEL NO. AL20 (SEE GENERAL NOTE #1)
2" APCO MODEL NO. 144 (SEE GENERAL NOTE #1)
- ⑧ 2" - 90° BRASS ELL, FIPxFIP.
- ⑨ 2" - 90° GALVANIZED ELL, FIPxFIP.
- ⑩ 2"x6" LONG GALVANIZED NIPPLE, MIPxMIP.
- ⑪ 2'-6"x2'-6"x6" THICK CONCRETE PAD
(520-C-2500 PCC PER S.S.P.W.C.).
- ⑫ PROTECTIVE COVER:
PIPELINE PRODUCTS, INC. ADVANTAGE SERIES MODEL VACS-1830
COLOR SPECIFIED BY CITY.



GENERAL NOTE

1. FOR COMBINATION AIR VALVES SPECIFY IF OPERATING PRESSURE IS BELOW 10 PSI.



DEPARTMENT OF PUBLIC WORKS

**2" AIR/VACUUM RELEASE VALVE ASSEMBLY
DUCTILE IRON AND AC PIPE WATER MAIN**

APPROVED: 4/4/11
DATE

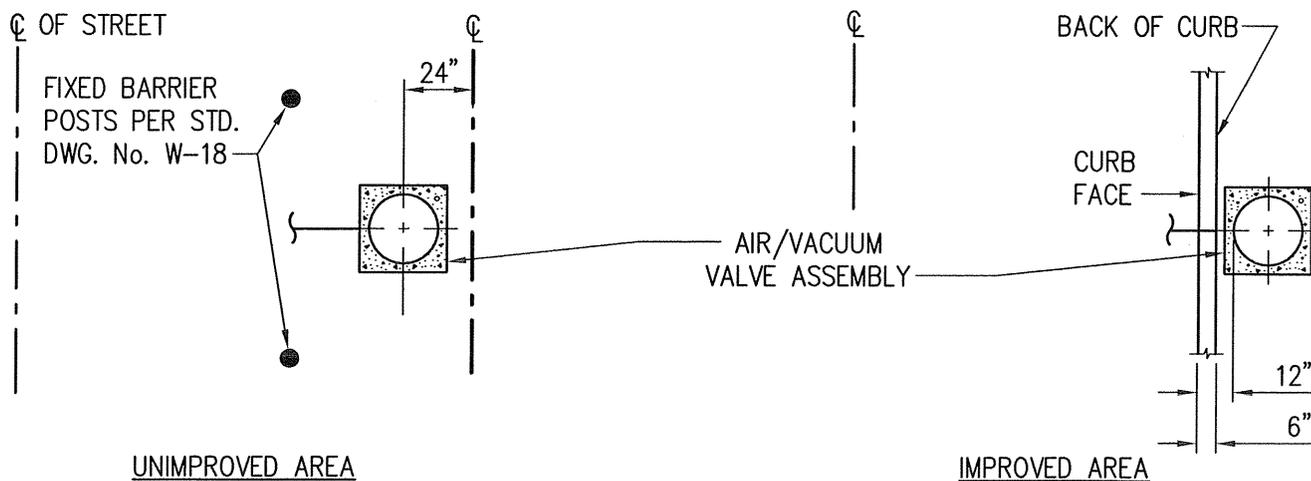
CITY OF LA VERNE 3/31/11
DATE

CITY UTILITY ENGINEER 43296
RCE No.

	BY	DATE
DESIGNED	R.D.H.	03/11
DRAWN	J.T.	03/11
CHECKED	W.D.B.	03/11
SCALE: N.T.S.	STD. DWG. NO. W-10	
DATE OF REVISION: MARCH 2011	SHT. 1 OF 2	

UNLESS OTHERWISE SPECIFIED ON PLANS

LOCATIONS:



GENERAL NOTES

1. ASSEMBLIES INSTALLED IN EASEMENTS, ROADS AND STREETS WITHOUT CURBS SHALL BE PROTECTED BY TWO GUARD POSTS. POSITION GUARD POSTS 24" IN FRONT OF AND 30" EACH SIDE OF ASSEMBLY. CROWN TOP OF BASE TO SHED WATER.
2. USE MANUFACTURER SPECIFIED OR APPROVED EQUAL.
3. PIPING SHALL BE INSTALLED PRIOR TO STREET PAVING.
4. A "W" SHALL BE CHISELED ON THE TOP OF CURB MARKING LOCATION, AFTER PIPING HAS BEEN INSTALLED.
5. NO CONNECTION OR TAP SHALL BE PLACED LESS THAN 24" FROM A VALVE, JOINT OR ADJACENT CONNECTION.
6. SET P.C.C. PAD 4" ABOVE GRADE IN UNIMPROVED AREAS.



DEPARTMENT OF PUBLIC WORKS

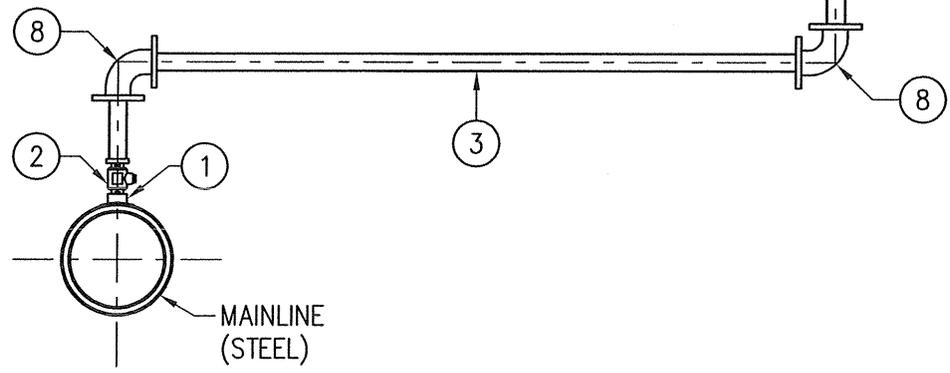
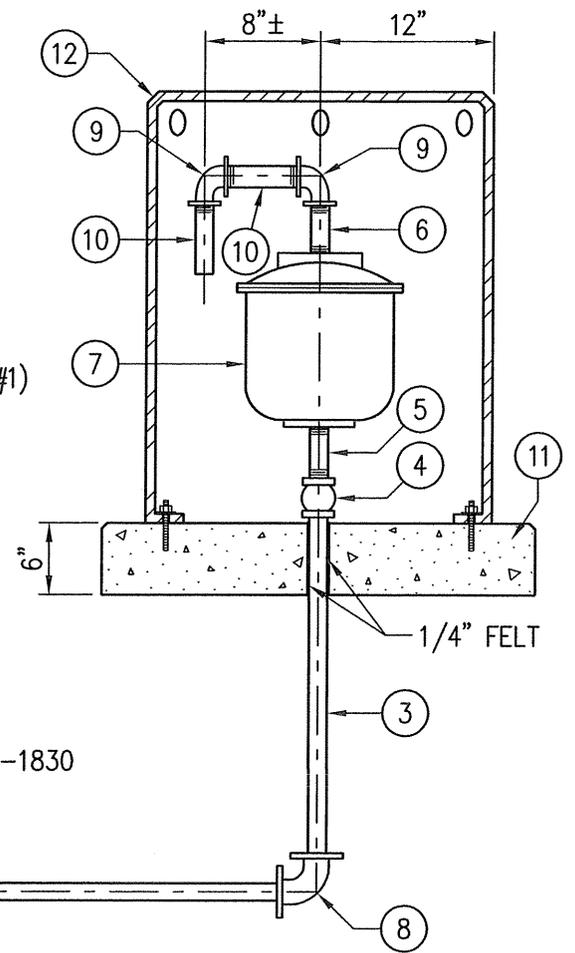
**2" AIR/VACUUM RELEASE VALVE
ASSEMBLY
DUCTILE IRON AND AC PIPE
WATER MAIN**

APPROVED: *[Signature]* 4/4/11
 CITY OF LA VERNE DATE
[Signature] 3/30/11
 CITY UTILITY ENGINEER RCE No. 43296 DATE

	BY	DATE
DESIGNED	R.D.H.	03/11
DRAWN	J.T.	03/11
CHECKED	W.D.B.	03/11
SCALE: N.T.S.	STD. DWG. NO.	
DATE OF REVISION: MARCH 2011	W-10	
	SHT. 2 OF 2	

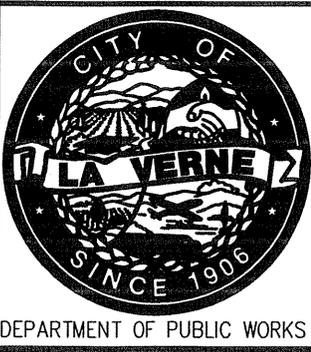
CONSTRUCTION NOTES FOR STEEL PIPE WATER MAIN

- ① 2" COMBINATION AIR VALVE:
2-1/2" EXTRA HEAVY HALF COUPLING, 1-1/2"x1" NYLON BUSHING
- ② CORPORATION STOP:
2" FORD MODEL NO. F1100-4-Q-NL, MIPxQUICK JOINT
2" MUELLER MODEL NO. H-15023, MIPxCTS
- ③ SERVICE LINE:
2" TYPE "K" SOFT COPPER TUBING
- ④ COUPLING:
2" FORD MODEL NO. C14-44-NL, CTSxFIP
2" MUELLER MODEL NO. H-15451, CTSxFIP
- ⑤ 2"x3" LONG BRASS NIPPLE, MIPxMIP AS NEEDED
- ⑥ 2"x3" LONG GALVANIZED NIPPLE, MIPxMIP AS NEEDED
- ⑦ COMBINATION AIR VALVES (SINGLE BODY):
2" CRISPIN VALVE MODEL NO. AL20 (SEE GENERAL NOTE #1)
2" APCO MODEL NO. 144 (SEE GENERAL NOTE #1)
- ⑧ 2" - 90° BRASS ELL, FIPxFIP.
- ⑨ 2" - 90° GALVANIZED ELL, FIPxFIP.
- ⑩ 2"x6" LONG GALVANIZED NIPPLE, MIPxMIP.
- ⑪ 2'-6"x2'-6"x6" THICK CONCRETE PAD
(520-C-2500 PCC PER S.S.P.W.C.).
- ⑫ PROTECTIVE COVER:
PIPELINE PRODUCTS, INC. ADVANTAGE SERIES MODEL VACS-1830
COLOR SPECIFIED BY CITY.



GENERAL NOTE

1. FOR COMBINATION AIR VALVES SPECIFY IF OPERATING PRESSURE IS BELOW 10 P.S.I.
2. FOR PRESSURES OVER 80 P.S.I. USE STAINLESS STEEL BUSHINGS INSTEAD OF NYLON BUSHINGS.



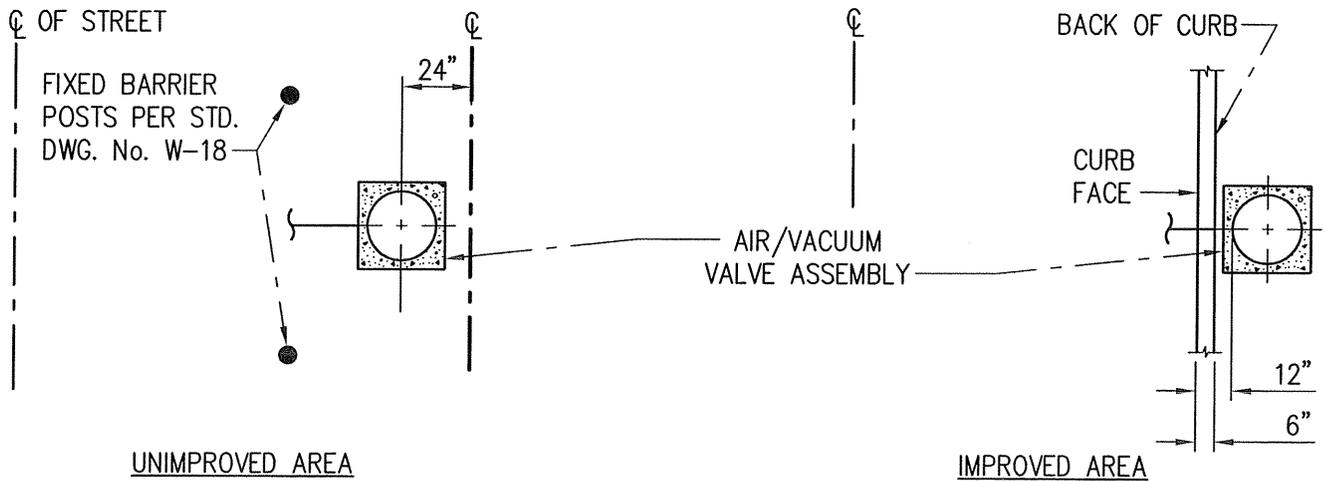
2" AIR/VACUUM RELEASE VALVE ASSEMBLY STEEL PIPE WATER MAIN

APPROVED: *[Signature]* 4/4/11
 CITY OF LA VERNE DATE
[Signature] 3/31/11
 CITY UTILITY ENGINEER RCE No. DATE

	BY	DATE
DESIGNED	R.D.H.	03/11
DRAWN	J.T.	03/11
CHECKED	W.D.B.	03/11
SCALE: N.T.S.	STD. DWG. NO. W-10a	
DATE OF REVISION: MARCH 2011	SHT. 1 OF 2	

UNLESS OTHERWISE SPECIFIED ON PLANS

LOCATIONS:



GENERAL NOTES

1. ASSEMBLIES INSTALLED IN EASEMENTS, ROADS AND STREETS WITHOUT CURBS SHALL BE PROTECTED BY TWO GUARD POSTS. POSITION GUARD POSTS 24" IN FRONT OF AND 30" EACH SIDE OF ASSEMBLY. CROWN TOP OF BASE TO SHED WATER.
2. USE MANUFACTURER SPECIFIED OR APPROVED EQUAL.
3. PIPING SHALL BE INSTALLED PRIOR TO STREET PAVING.
4. A "W" SHALL BE CHISELED ON THE TOP OF CURB MARKING LOCATION, AFTER PIPING HAS BEEN INSTALLED.
5. NO CONNECTION OR TAP SHALL BE PLACED LESS THAN 24" FROM A VALVE, JOINT OR ADJACENT CONNECTION.
6. SET P.C.C. PAD 4" ABOVE GRADE IN UNIMPROVED AREAS.



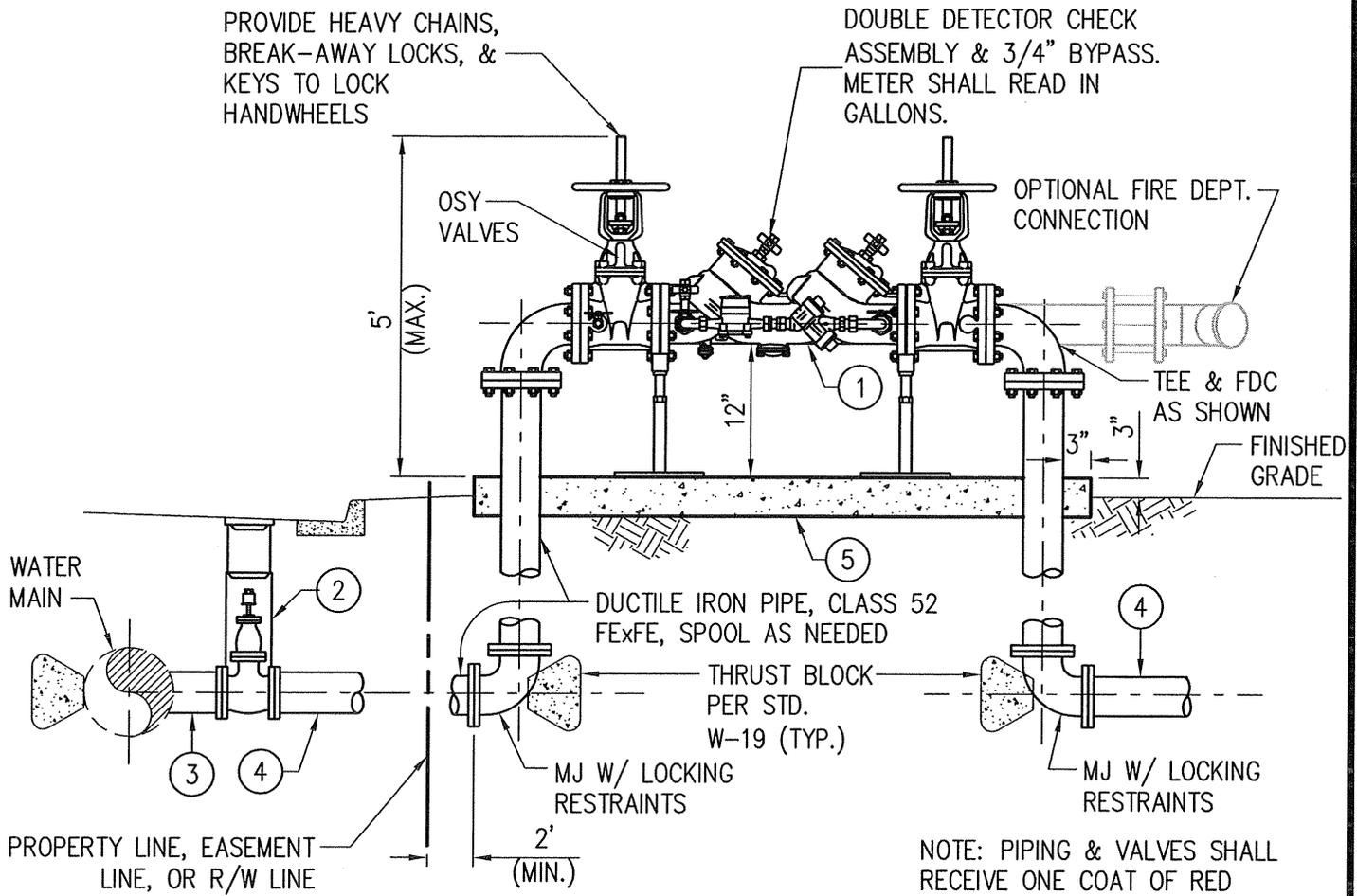
DEPARTMENT OF PUBLIC WORKS

**2" AIR/VACUUM RELEASE
VALVE ASSEMBLY
STEEL PIPE WATER MAIN**

APPROVED:

CITY OF LA VERNE *[Signature]* 4/4/11
 CITY UTILITY ENGINEER 43296 3/31/11
 RCE No. DATE

	BY	DATE
DESIGNED	R.D.H.	03/11
DRAWN	J.T.	03/11
CHECKED	W.D.B.	03/11
SCALE:	STD. DWG. NO.	
N.T.S.	W-10a	
DATE OF REVISION:	MARCH 2011	
	SHT. 2 OF 2	



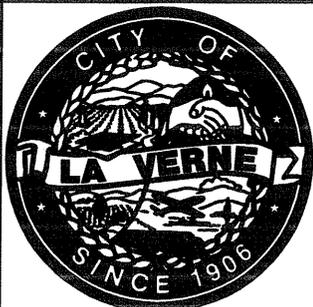
SECTION VIEW

CONSTRUCTION NOTES

- ① DOUBLE CHECK DETECTOR ASSEMBLY SHALL BE PER USC LIST OF APPROVED ASSEMBLIES VALVE SIZE TO BE DETERMINED BY THE DESIGN ENGINEER. (6" SHOWN).
- ② VALVE BOX AND COVER PER STANDARD DRAWING W-17.
- ③ CONNECTION ASSEMBLY SEE STD. W-14 OR W-14A.
- ④ DUCTILE IRON PIPE SIZE AND TYPE TO BE DETERMINED BY THE DESIGN ENGINEER.
- ⑤ 6" THICK CONCRETE PAD (520-C-2500 PCC PER SPPWC) FINAL LENGTH AND WIDTH BASED UPON SIZE OF DETECTOR CHECK.

GENERAL NOTES

- 1. CONNECTION TO MAIN SHALL BE PER STANDARD DETAIL W-14 OR W-14a.



DEPARTMENT OF PUBLIC WORKS

**3" TO 10"
DOUBLE CHECK DETECTOR
ASSEMBLY WITH OSY VALVES**

APPROVED:

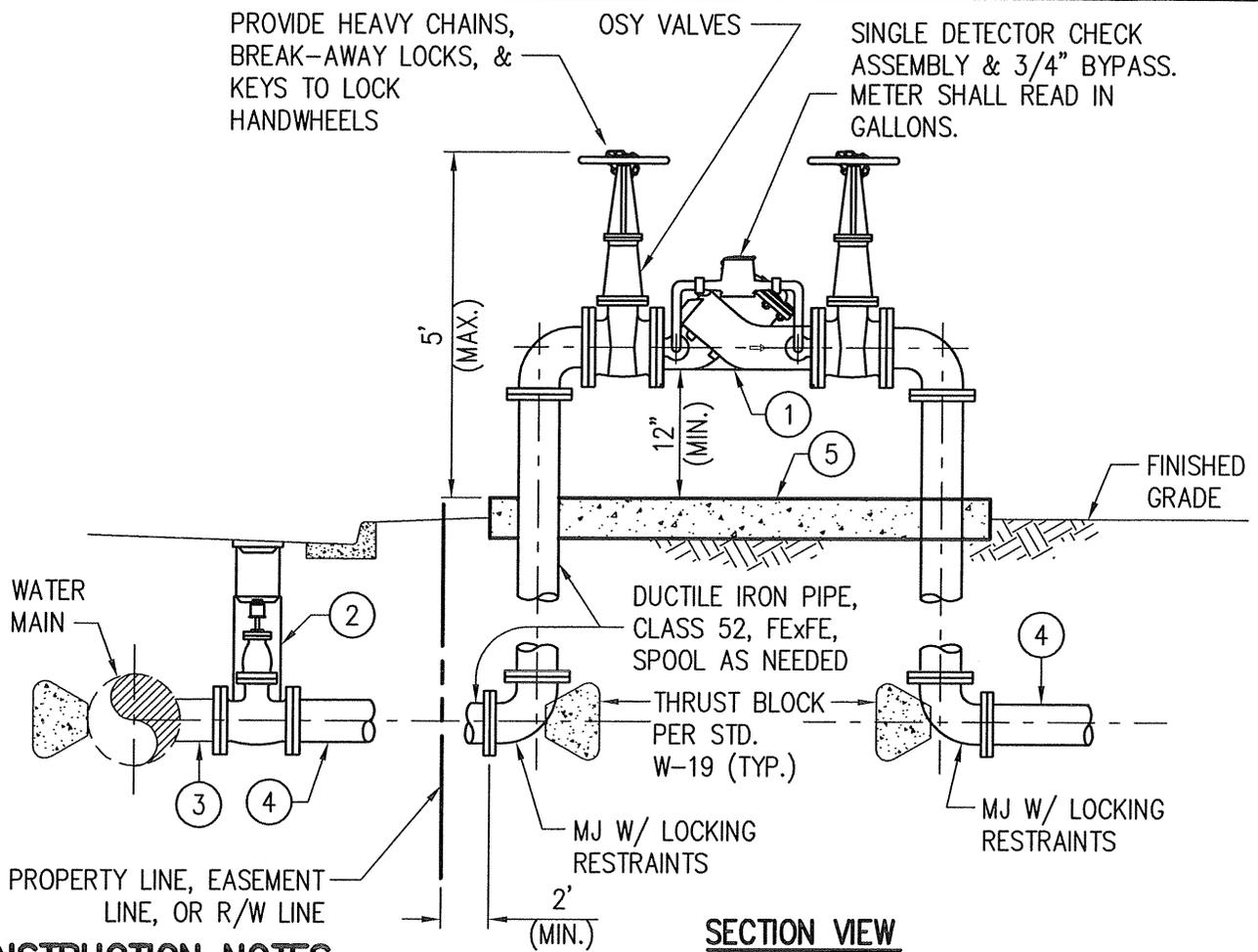
CITY OF LA VERNE

CITY UTILITY ENGINEER

43296
RCE No.

[Signature]
DATE 4/4/11
[Signature]
DATE 3/30/11

	BY	DATE
DESIGNED	R.D.H.	03/11
DRAWN	J.T.	03/11
CHECKED	W.D.B.	03/11
SCALE:	N.T.S.	
DATE OF REVISION:	MARCH 2011	
	STD. DWG. NO.	
	W-11	
	SHT. 1 OF 1	



CONSTRUCTION NOTES

- ① SINGLE CHECK DETECTOR ASSEMBLY SHALL BE PER USC LIST OF APPROVED ASSEMBLIES VALVE SIZE TO BE DETERMINED BY THE DESIGN ENGINEER. (6" SHOWN).
- ② VALVE BOX AND COVER PER STANDARD DRAWING W-17.
- ③ CONNECTION ASSEMBLY SEE STD. W-14 OR W-14A.
- ④ DUCTILE IRON PIPE SIZE AND TYPE TO BE DETERMINED BY THE DESIGN ENGINEER.
- ⑤ 6" THICK CONCRETE PAD (520-C-2500 PCC PER SPPWC) FINAL LENGTH AND WIDTH BASED UPON SIZE OF DETECTOR CHECK.

GENERAL NOTES

- 1. LOCATION OF VAULT & INDICATOR POST TO BE DETERMINED BY THE CITY ENGINEER.
- 2. ALL "BYPASS" ASSEMBLIES SHALL BE 5/8" X 3/4" BRONZE OR BRASS.
- 3. CONNECTION TO EXISTING MAINS SHALL BE PER STANDARD DETAIL W-14.



DEPARTMENT OF PUBLIC WORKS

**3" TO 10"
SINGLE CHECK DETECTOR
ASSEMBLY WITH OSY VALVES**

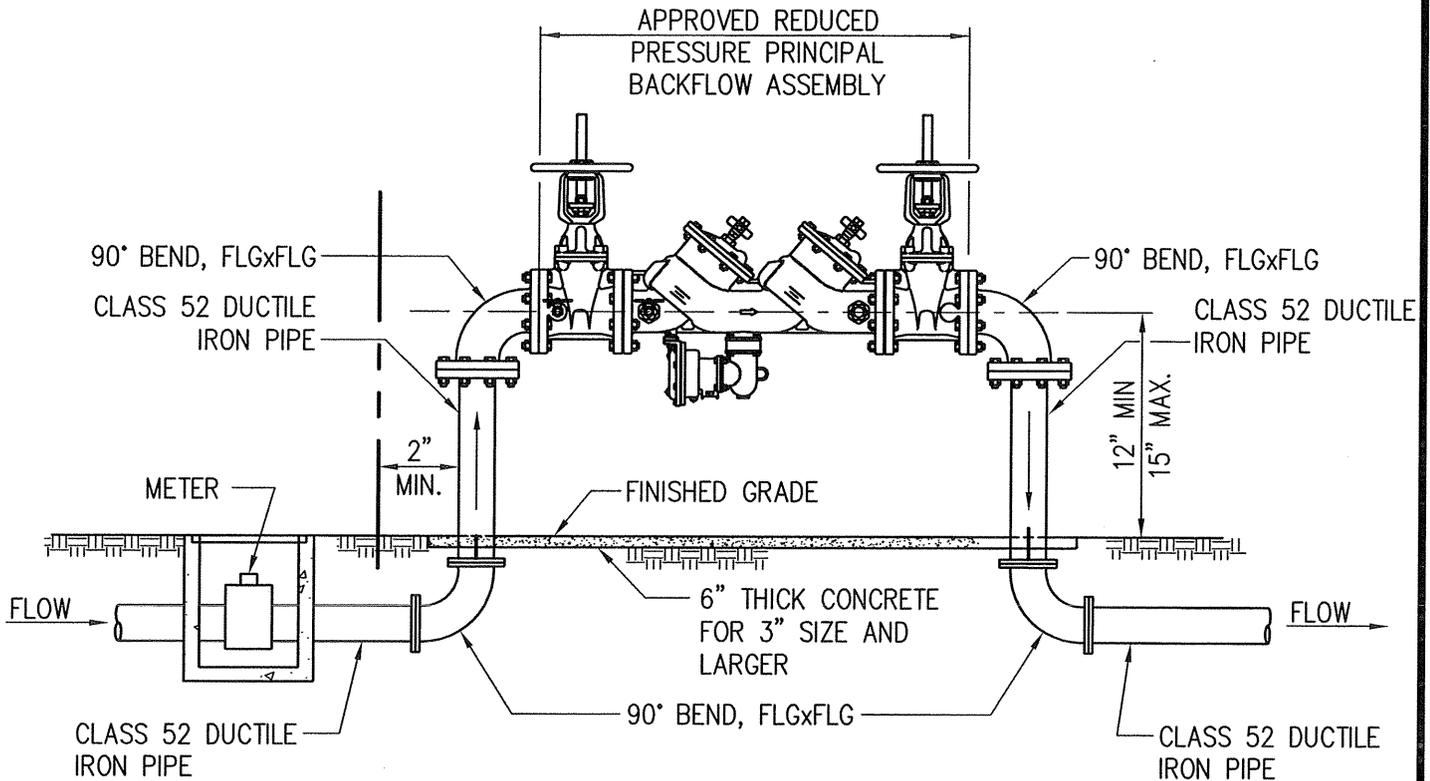
APPROVED:

[Signature]
CITY OF LA VERNE
CITY UTILITY ENGINEER

43296
RCE No.

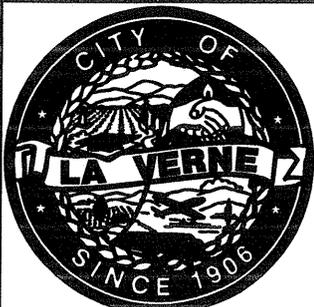
[Signature] 4/4/11
DATE
3/31/11
DATE

	BY	DATE
DESIGNED	R.D.H.	03/11
DRAWN	J.T.	03/11
CHECKED	W.D.B.	03/11
SCALE:	STD. DWG. NO.	
N.T.S.	W-12	
DATE OF REVISION:	MARCH 2011	
	SHT. 1 OF 1	



GENERAL NOTES

1. REDUCE PRESSURE PRINCIPAL DETECTOR ASSEMBLY SHALL BE PER USC LIST OF APPROVED ASSEMBLIES
2. NO CONNECTIONS SHALL BE MADE BETWEEN THE METER AND BACKFLOW PREVENTER.
3. WHEN INSTALLATION IS NEAR A BUILDING OR WALL, THE TEST COCKS SHALL BE LOCATED FOR EASY ACCESS.
4. PIPING MATERIALS SHALL BE BRASS OR GALVANIZED STANDARD WALL DUCTILE IRON PIPE FOR 3" DEVICES AND ABOVE AS APPROVED BY THE CITY ENGINEER. PIPING BELOW GRADE SHALL BE DUCTILE IRON PIPING ABOVE GRADE SHALL BE DUCTILE IRON
5. THE INSTALLATION WILL BE INSPECTED BY THE CITY PRIOR TO BEING PLACED IN SERVICE.
6. THE CONTRACTOR/OWNER SHALL HAVE THE DEVICE TESTED AND CERTIFIED BY A LICENSED TESTER.
7. WHEN MORE THAN ONE DEVICE IS INSTALLED ON THE SAME PROJECT, ALL DEVICES AND CONFIGURATIONS SHALL BE IDENTICAL IN EVERY WAY.



**2" TO 10"
REDUCE PRESSURE PRINCIPAL
DETECTOR ASSEMBLY**

APPROVED:

CITY OF LA VERNE

CITY UTILITY ENGINEER

43296

RCE No.

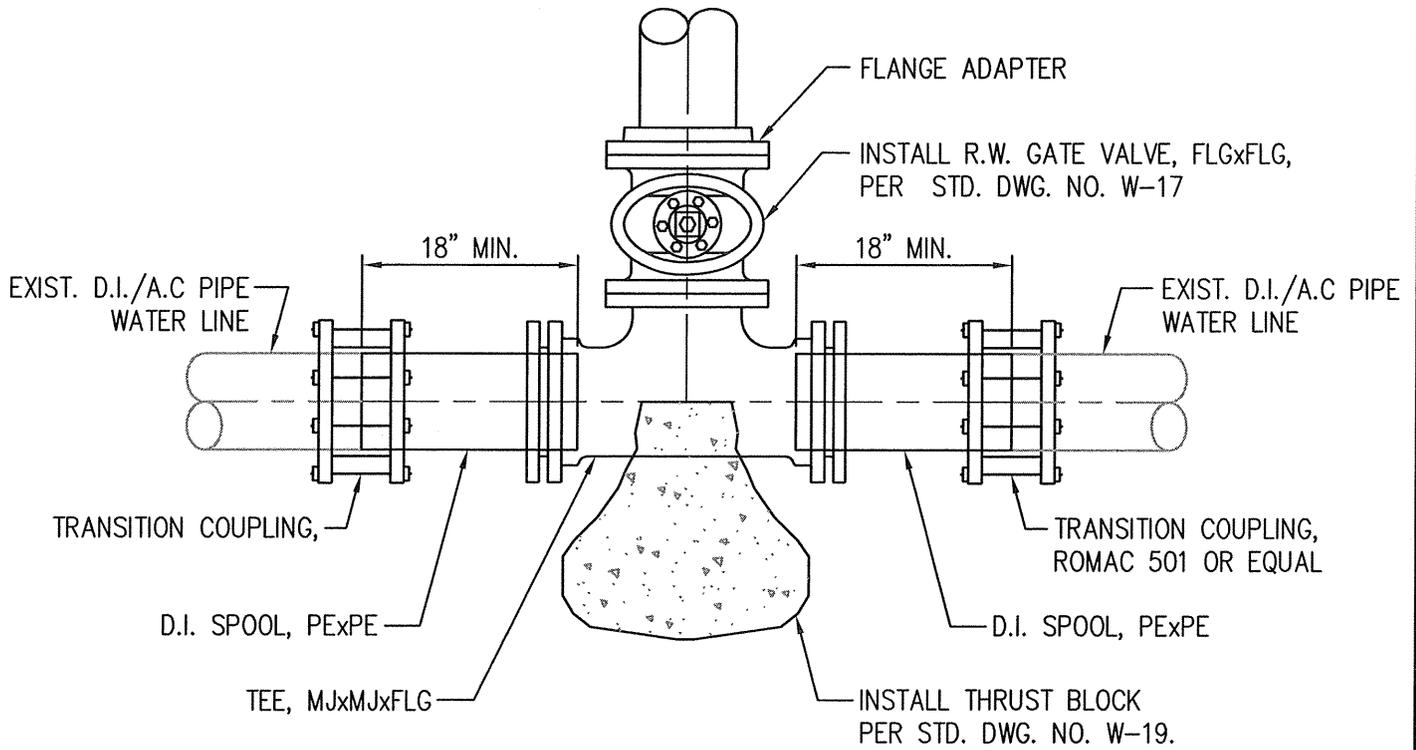
DATE

DATE

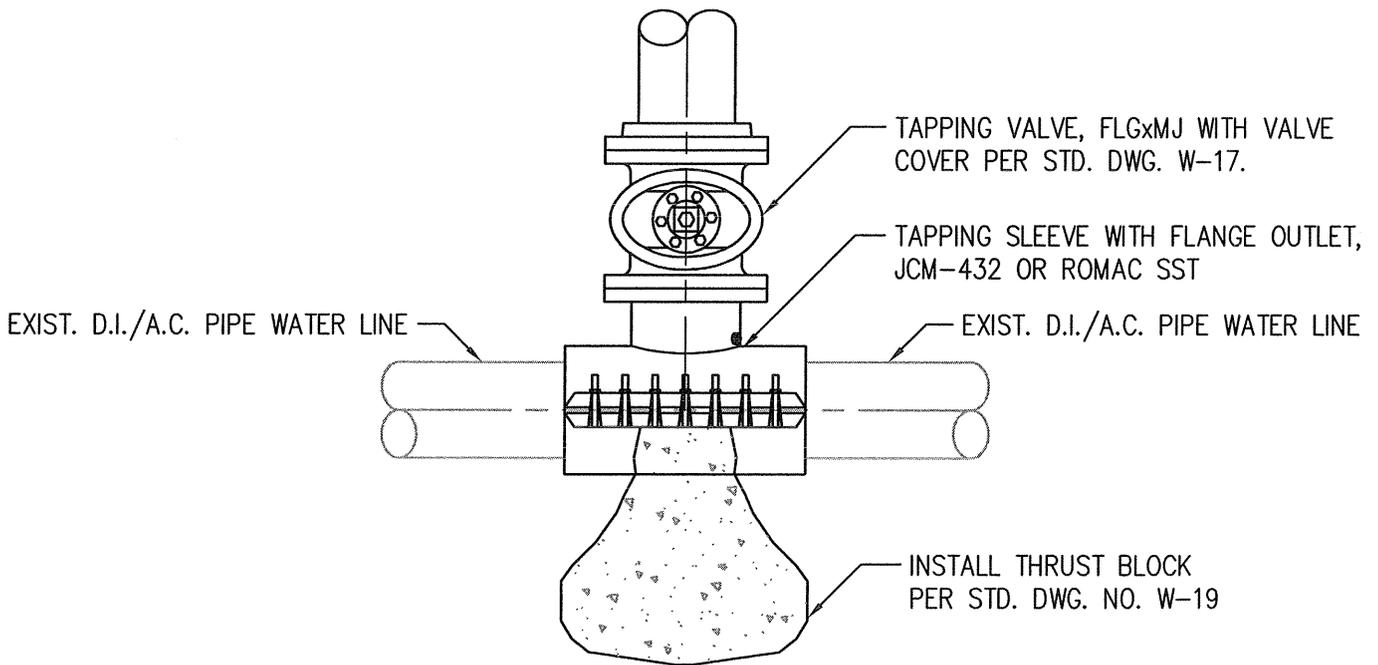
[Signature]
4/4/11

3/31/11

	BY	DATE
DESIGNED	R.D.H.	03/11
DRAWN	J.T.	03/11
CHECKED	W.D.B.	03/11
SCALE:	STD. DWG. NO.	
N.T.S.	W-13	
DATE OF REVISION:	MARCH 2011	
	SHT. 1 OF 1	



CUT-IN TEE CONNECTION DETAIL



TAPPING SLEEVE AND TAPPING VALVE CONNECTION DETAIL



DEPARTMENT OF PUBLIC WORKS

**CONNECTION TO EXISTING
DUCTILE IRON/A.C PIPE
WATER MAINS**

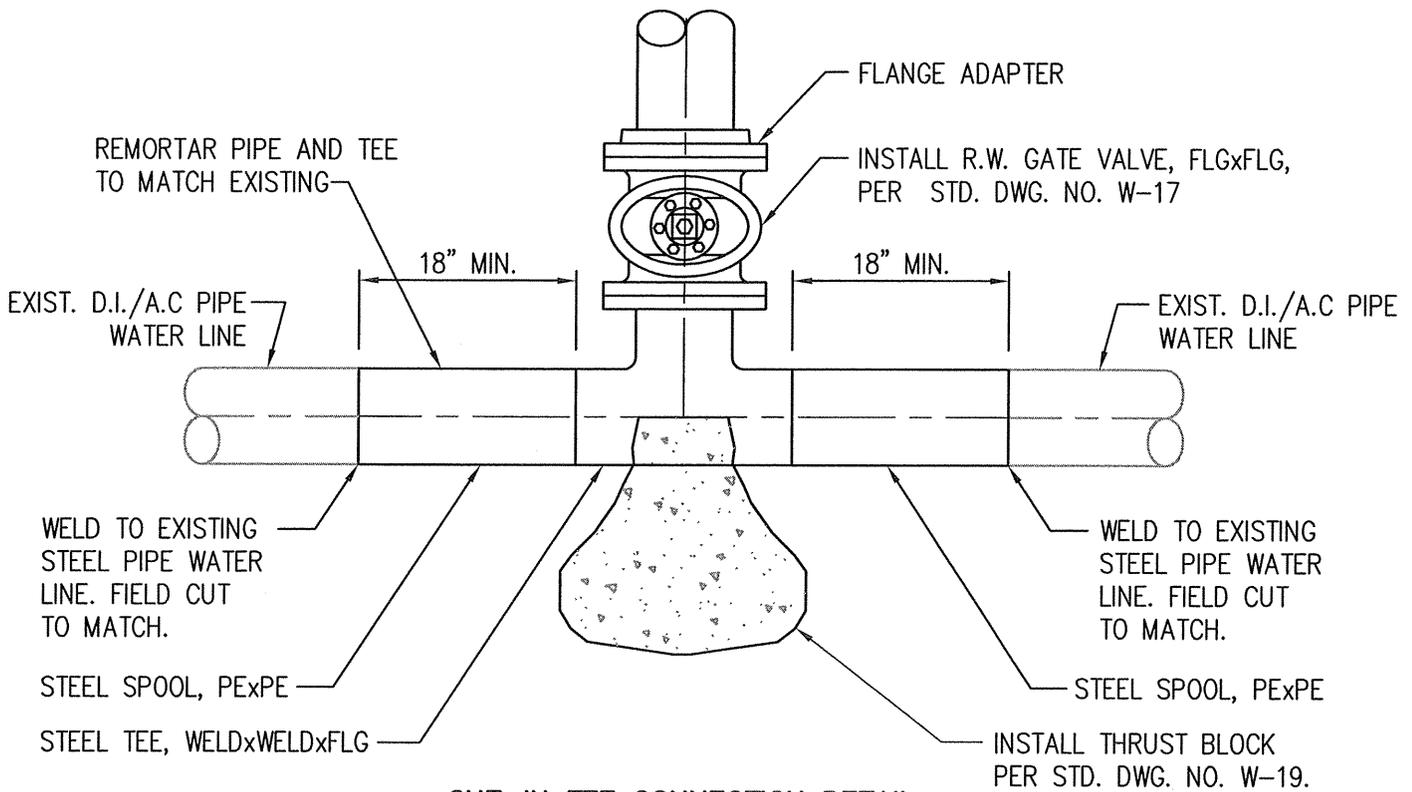
APPROVED:

[Signature]
CITY OF LA VERNE
CITY UTILITY ENGINEER

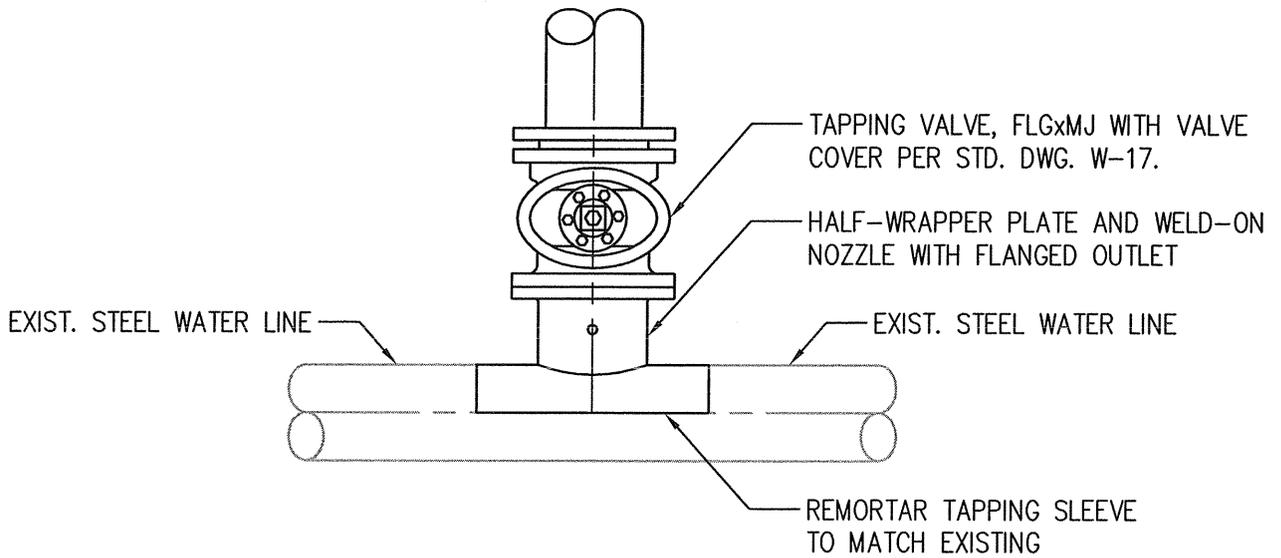
43296
RCE No.

[Signature] 4/4/11
DATE
3/31/11
DATE

	BY	DATE
DESIGNED	R.D.H.	03/11
DRAWN	J.T.	03/11
CHECKED	W.D.B	03/11
SCALE:	STD. DWG. NO.	
N.T.S.	W-14	
DATE OF REVISION:	MARCH 2011	
	SHT. 1 OF 1	



CUT-IN TEE CONNECTION DETAIL



TAPPING SLEEVE AND TAPPING VALVE CONNECTION DETAIL



DEPARTMENT OF PUBLIC WORKS

**CONNECTION TO EXISTING STEEL
PIPE WATER MAINS**

APPROVED:

CITY OF LA VERNE

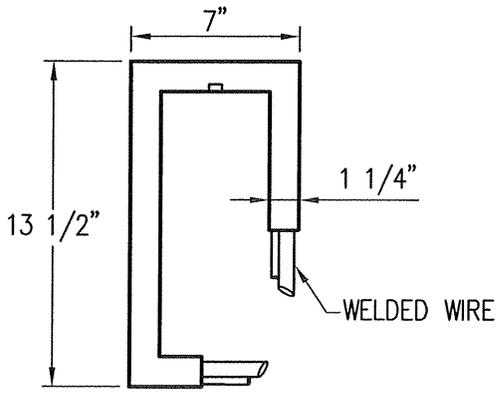
CITY UTILITY ENGINEER

[Signature]

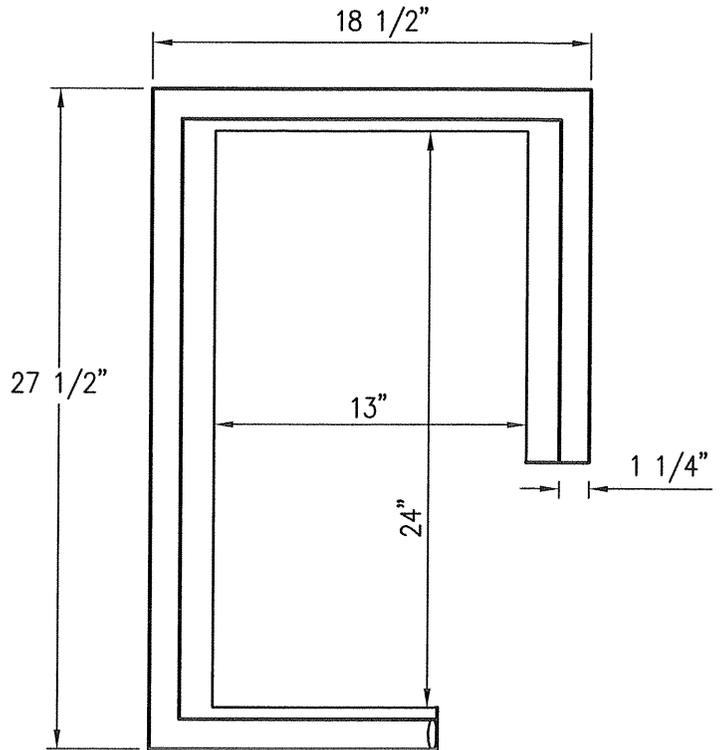
43296
RCE No.

4/4/11
DATE
3/31/11
DATE

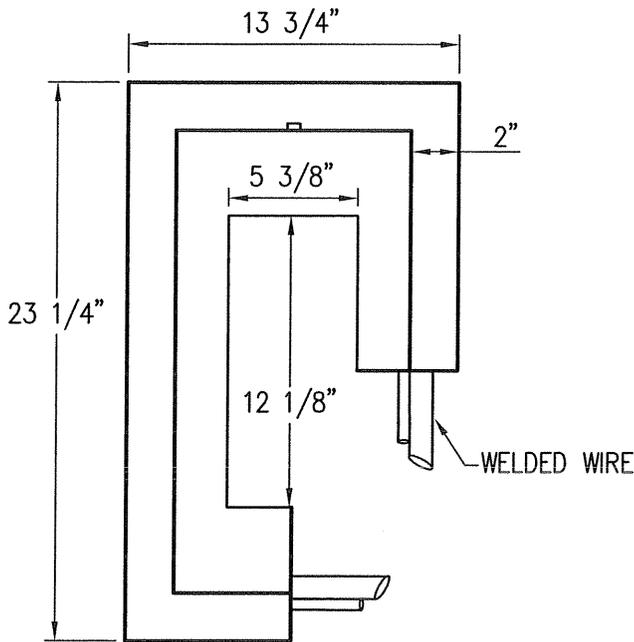
	BY	DATE
DESIGNED	R.D.H.	03/11
DRAWN	J.T.	03/11
CHECKED	W.D.B.	03/11
SCALE: N.T.S.	STD. DWG. NO. W-14a	
DATE OF REVISION: MARCH 2011	SHT. 1 OF 1	



LID (2-S)



METER BOX



COVER

GENERAL NOTE:

1. METER BOX IS TO BE BROOKS PRODUCTS NO. 38MB-EXTENSION, 12" DEEP.
2. LID IS TO BE BROOKS PRODUCTS NO. 38-S LID (2-S).
3. COVER IS TO BE BROOKS PRODUCTS NO. 38-S COVER.
4. INSTALL METER BOX ON 6" GRAVEL BED.



DEPARTMENT OF PUBLIC WORKS

**METER BOX
(FOR 1" WATER METER)**

APPROVED:

CITY OF LA VERNE

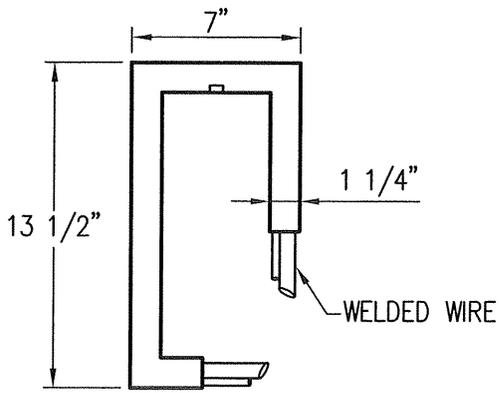
CITY UTILITY ENGINEER

[Handwritten Signature]

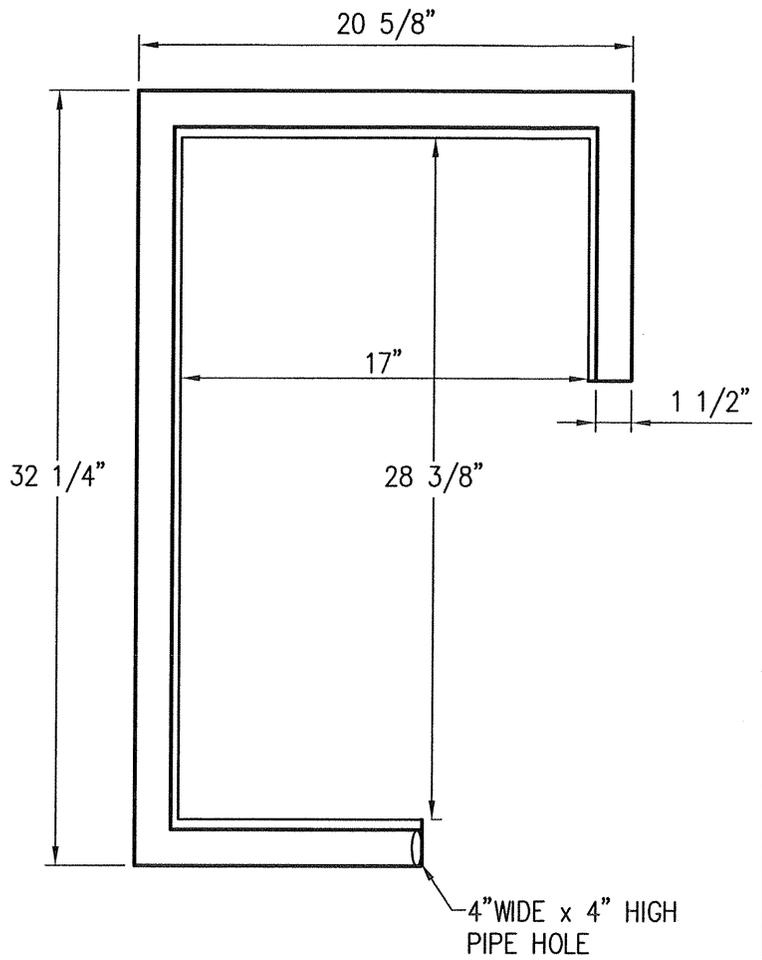
43296
RCE No.

4/4/11
DATE
3/30/11
DATE

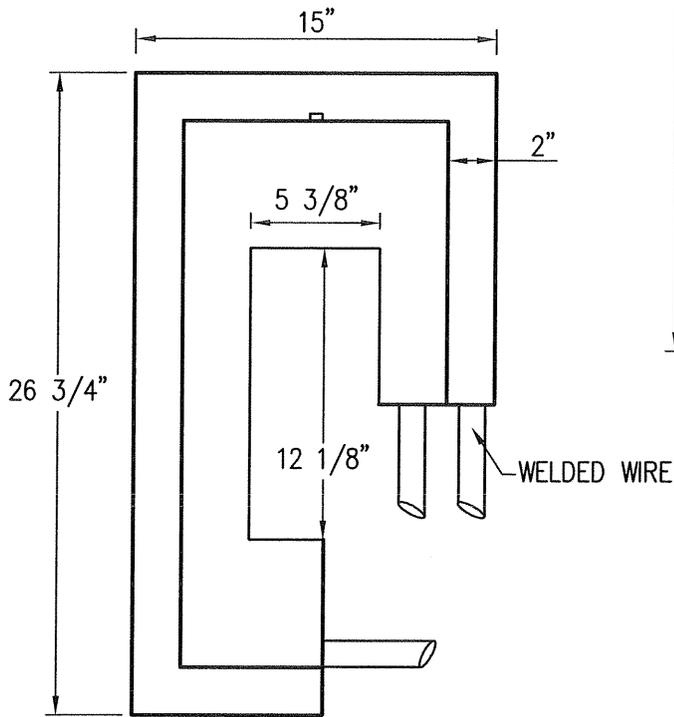
	BY	DATE
DESIGNED	R.D.H.	03/11
DRAWN	J.T.	03/11
CHECKED	W.D.B.	03/11
SCALE: N.T.S.	STD. DWG. NO.	
DATE OF REVISION: MARCH 2011	W-15	
	SHT. 1 OF 1	



LID (2-S)



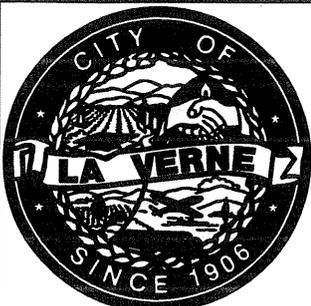
METER BOX



COVER

GENERAL NOTE:

1. METER BOX IS TO BE BROOKS PRODUCTS NO. 65MB-EXTENSION, 12" DEEP.
2. LID IS TO BE BROOKS PRODUCTS NO. 65-S LID (2-S).
3. COVER IS TO BE BROOKS PRODUCTS NO. 65-S COVER.
4. INTALL METER BOX ON 6" GRAVEL BED.



DEPARTMENT OF PUBLIC WORKS

**METER BOX
(FOR 2" WATER METER)**

APPROVED:

CITY OF LA VERNE

CITY UTILITY ENGINEER

43296

RCE No.

4/4/11
DATE

3/31/11
DATE

	BY	DATE
DESIGNED	R.D.H.	03/11
DRAWN	J.T.	03/11
CHECKED	W.D.B.	03/11

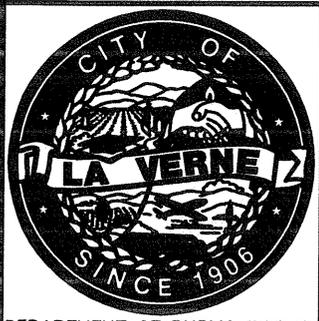
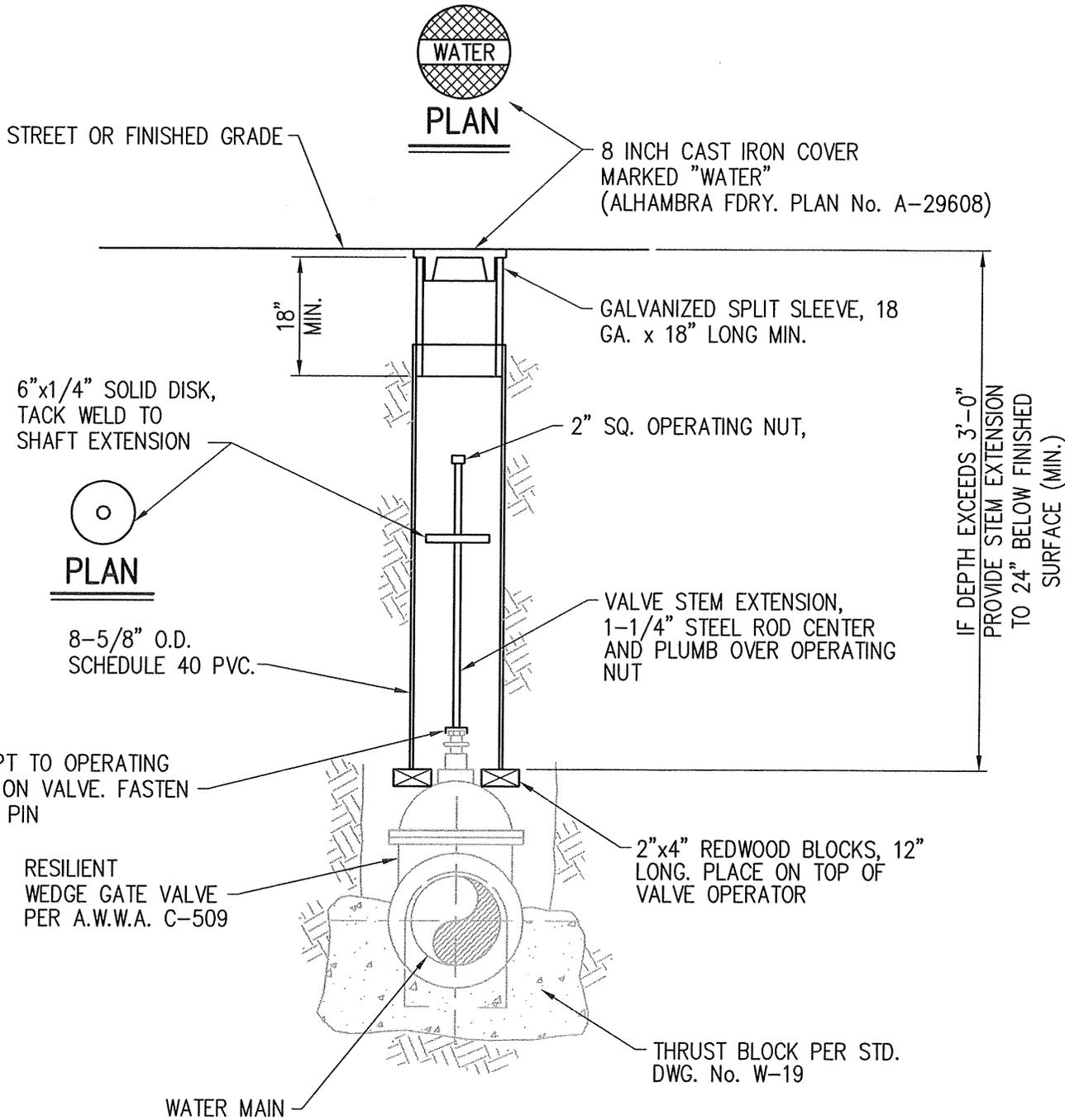
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DATE OF REVISION:

MARCH 2011

STD. DWG. NO.
W-16

SHT. 1 OF 1

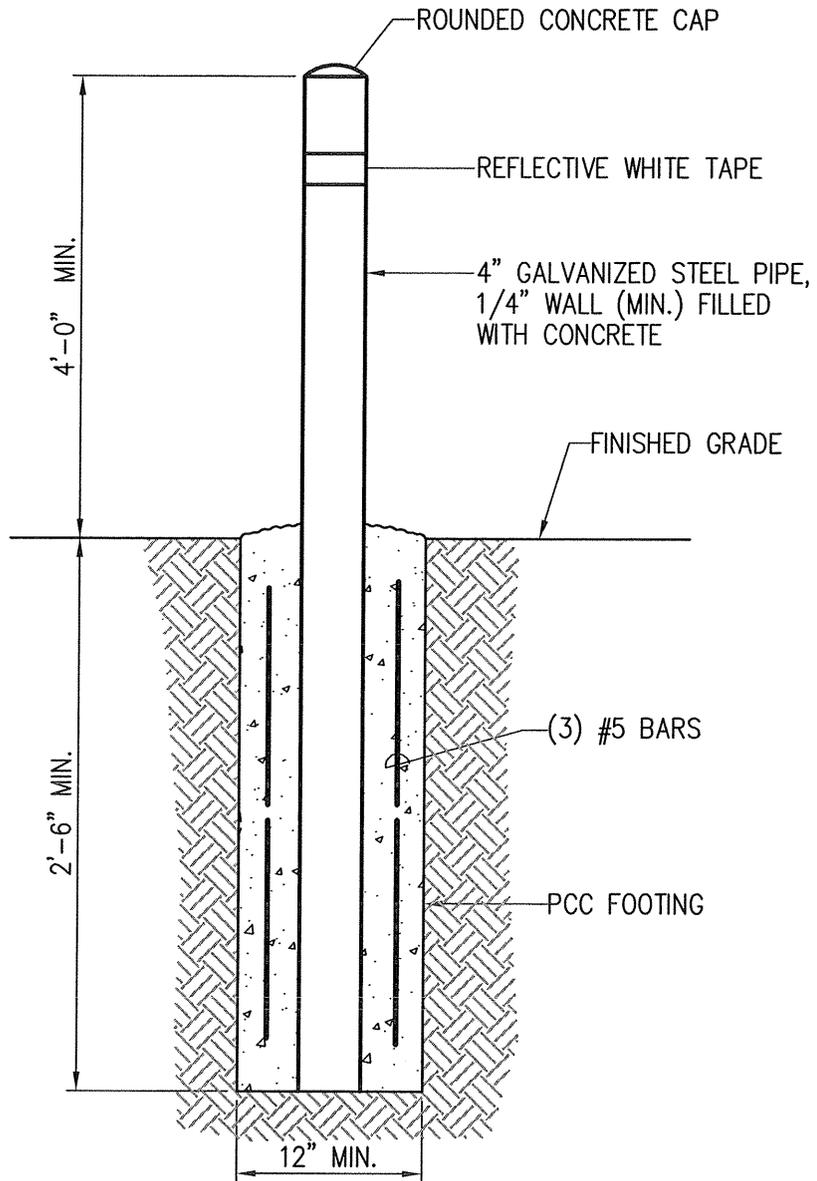


DEPARTMENT OF PUBLIC WORKS

VALVE COVER ASSEMBLY AND VALVE STEM EXTENSION

APPROVED:  DATE: 4/4/11
 CITY OF LA VERNE
 CITY UTILITY ENGINEER RCE No. 43296 DATE: 3/31/11

	BY	DATE
DESIGNED	R.D.H.	03/11
DRAWN	J.T.	03/11
CHECKED	W.D.B.	03/11
SCALE: N.T.S.	STD. DWG. NO.	
DATE OF REVISION: MARCH 2011	W-17	
	SHT. 1 OF 1	



NOTE:

PAINT THE PIPE BARRIERS YELLOW AND PROVIDE A REFLECTIVE WHITE TAPE STRIPE 6" BELOW TOP OF PIPE. PRIMER (1) COAT RED PRIMER RUST-O-LEUM NO. 769 AND FINISH WITH (2) COATS OF YELLOW RUST-O-LEUM NO. 659.



DEPARTMENT OF PUBLIC WORKS

GUARD POST

APPROVED:

CITY OF LA VERNE

CITY UTILITY ENGINEER

43296

RCE No.

[Signature] 4/4/11

DATE

[Signature] 3/3/11

DATE

SCALE:

N.T.S.

DATE OF REVISION:

MRACH 2011

BY DATE

DESIGNED R.D.H. 03/11

DRAWN J.T. 03/11

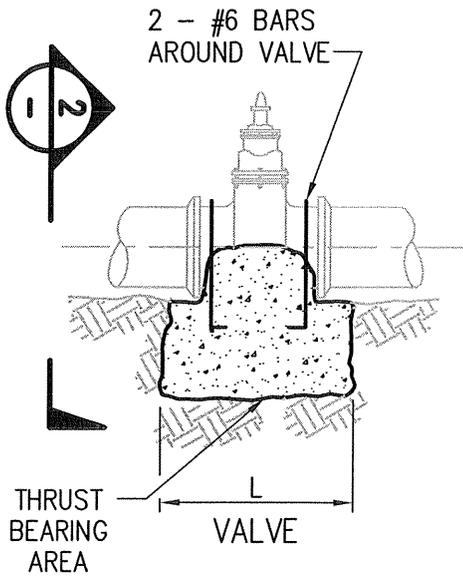
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W-18

SHT. 1 OF 1

THRUST BEARING AREA (SQUARE FEET)

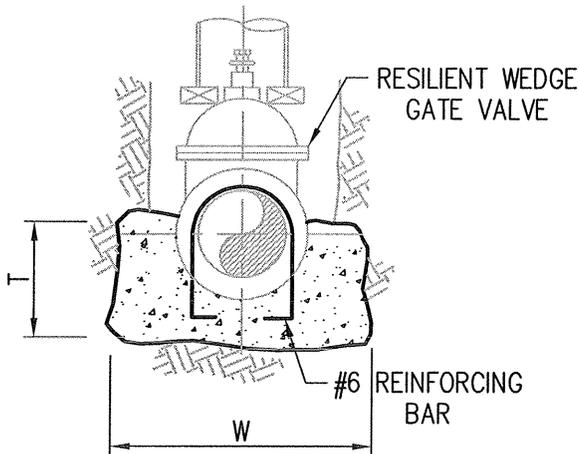


PIPE SIZE		6"	8"	10"	12"
TEST PRESSURE (PSI)		150	150	150	150
BENDS	90°	4.0	7.1	11.1	16.0
	45°	2.2	3.8	6.0	8.7
	22.5°	2.0	2.0	3.1	4.4
	11.25°	2.0	2.0	2.0	2.2
PLUG		5.7	10.1	15.7	22.6
TEE/VALVE		2.8	5.0	7.9	11.3
CROSS *		2.8	5.0	7.9	11.3
REDUCER		2.0	4.0	7.0	10.0

* WITH A VALVE

TABLE(S) BASED ON SOIL BEARING VALUE OF 1500 LB. PER SQUARE FOOT.

CALCULATIONS MUST BE SUBMITTED FOR OTHER SOIL BEARING VALUES OR OTHER TEST PRESSURE IN WATER MAIN.



SECTION 2

VERTICAL ANCHOR (CUBIC FEET OF P.C.C.)

PIPE SIZE		6"	8"	10"	12"
TEST PRESSURE (PSI)		150	150	150	150
BENDS	90°	62	111	173	249
	45°	44	78	122	176
	22.5°	24	42	66	95
	11.25°	12	22	34	49

NOTES:

1. THRUST BLOCKS MUST BEAR ON UNDISTURBED SOIL.
2. CONCRETE FOR THRUST & ANCHOR BLOCKS SHALL BE OF CLASS 480-C-2000 IN ACCORDANCE WITH S.S.P.W.C. IT SHALL BE POURED (12" THICK MIN.) AGAINST UNDISTURBED SOIL. P.C.C. SHALL BE KEPT CLEAR OF JOINTS & BOLTS.
3. WHEN BOLTED JOINTS ARE UTILIZED, SET FORMS TO SEPARATE BOLTS FROM P.C.C. TO ASSURE ACCESS TO BOLTS & JOINTS.
4. THRUST BLOCKS WILL BE INSPECTED BY CITY OF LA VERNE INSPECTOR.

VALVE AND PIPE SIZE	(L) LENGTH	(W) WIDTH	(T) THICKNESS
6"	2'	2'-0"	12"
8"	3'	2'-2"	14"
10"	3'	2'-4"	14"
12"	4'	2'-6"	15"



DEPARTMENT OF PUBLIC WORKS

THRUST BLOCKS

APPROVED:

CITY OF LA VERNE

CITY UTILITY ENGINEER

43296

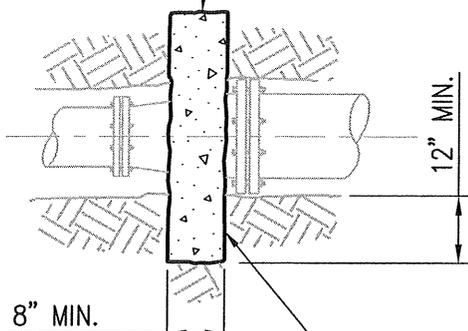
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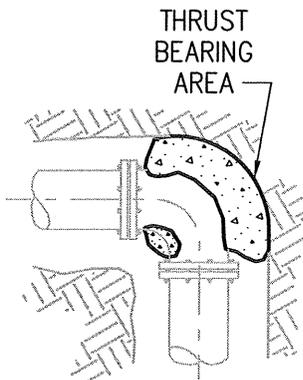
	BY	DATE
DESIGNED	R.D.H.	03/11
DRAWN	J.T.	03/11
CHECKED	W.D.B.	03/11
SCALE:	N.T.S.	
DATE OF REVISION:	MARCH 2011	
STD. DWG. NO.	W-19	
SHT. 1 OF 2		

CONSTRUCT SYMMETRICAL AROUND PIPE

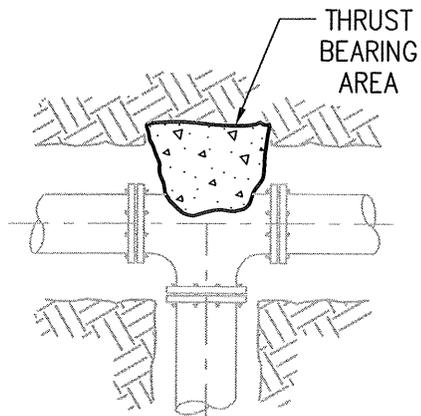


REDUCER PLAN

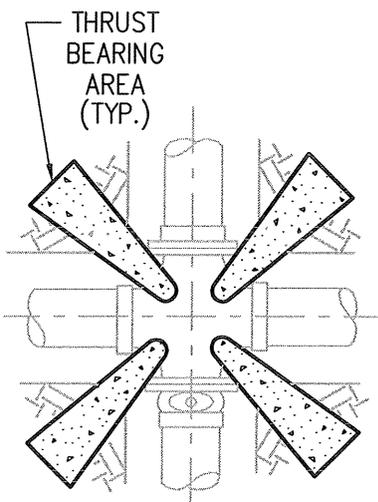
THRUST BEARING AREA



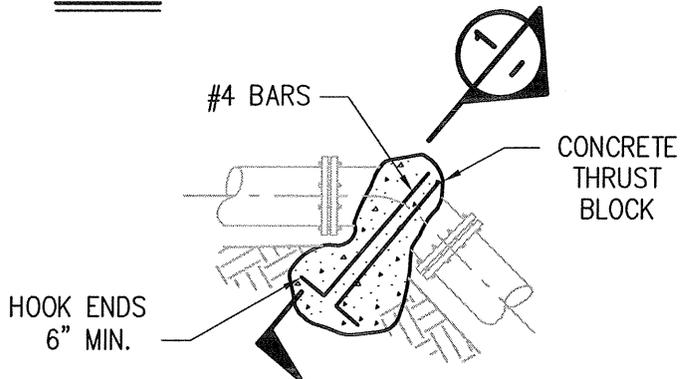
BEND PLAN



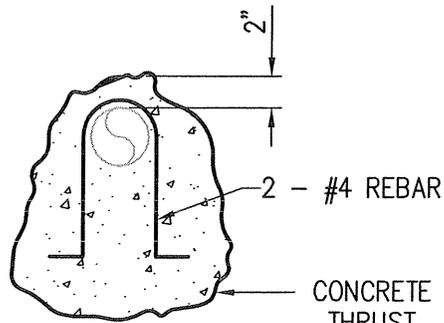
TEE OR PLUG PLAN



CROSS WITH VALVE PLAN



VERTICAL BEND



SECTION

1



DEPARTMENT OF PUBLIC WORKS

THRUST BLOCKS

APPROVED:

CITY OF LA VERNE

CITY UTILITY ENGINEER

43296
RCE No.

4/4/11
DATE
3/31/11
DATE

SCALE:

N.T.S.

DATE OF REVISION:

MARCH 2011

BY DATE

DESIGNED R.D.H. 03/11

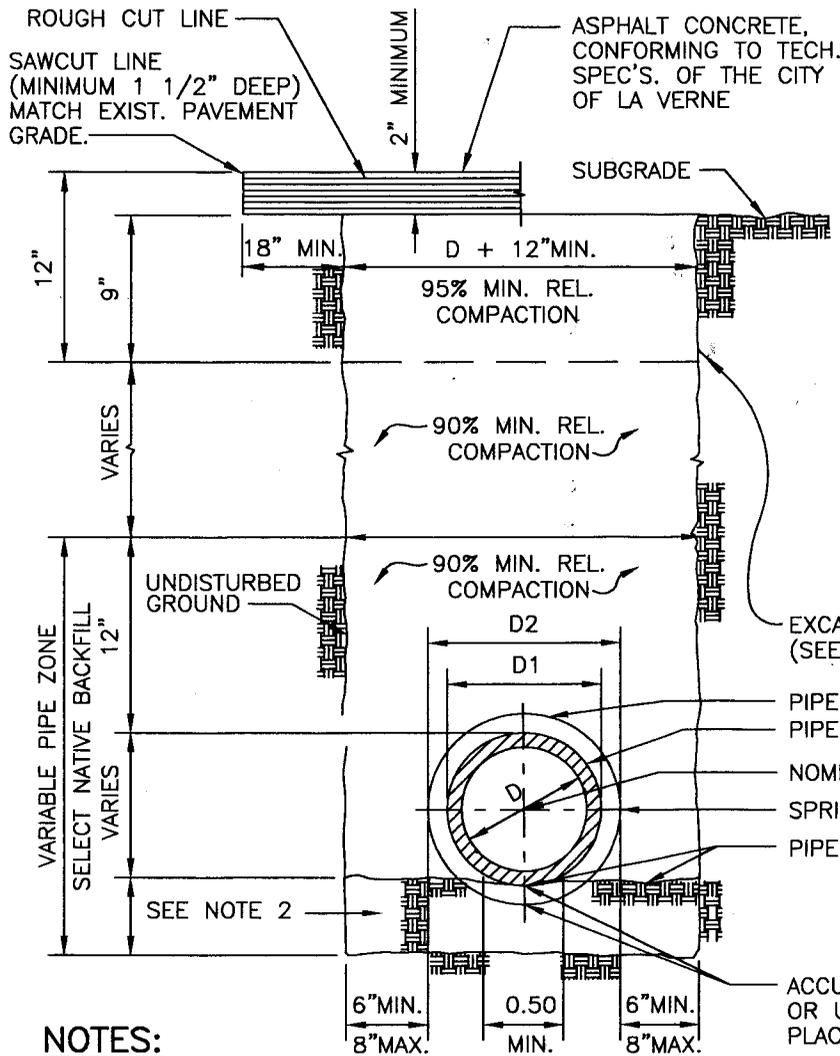
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STD. DWG. NO.

W-19

SHT. 2 OF 2



PAVEMENT SHALL BE ROUGH CUT AND REMOVED FROM SITE PRIOR TO EXCAVATION. UPON COMPLETION OF BACKFILL & COMPACTION, AND IMMEDIATELY PRIOR TO PAVING, PAVEMENT SHALL BE SAWCUT PARALLEL WITH, OR AT RIGHT ANGLES TO, THE TRUE CENTERLINE OF THE TRENCH. SAWCUTS SHALL BE DONE TO EXACT LINES SNAPPED WITH A CHALKLINE. EXCESS PAVEMENT REMOVED BEYOND THE MINIMUM ESTABLISHED LINES, SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

IMMEDIATELY PRIOR TO PAVING, A TACK COAT SHALL BE EVENLY APPLIED TO ALL VERTICAL FACES. NEW PAVEMENT SHALL BE LAID BY A SELF-PROPELLED PAVER, UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.

ALL PERTINENT DATA, (CALCULATIONS, DIAGRAMS, ETC.), SHALL BE SUBMITTED BY THE CONTRACTOR FOR CHECKING, COMPLIANCE AND APPROVAL TO THE CITY ENGINEER PRIOR TO CONSTRUCTION.

MAXIMUM LIFT THICKNESS FOR BEDDING AND BACKFILL SHALL BE 8-INCHES (0.67') BEFORE COMPACTION. NO PONDING OR JETTING WILL BE ALLOWED WITHOUT THE APPROVAL OF THE CITY ENGINEER.

NOTES:

1. TRENCHES 5- FEET OR MORE IN DEPTH MUST BE PROTECTED BY A SHORING SYSTEM, SLOPING OF THE GROUND OR OTHER EQUIVALENT MEANS. ALTERNATE SHORING OR EQUIVALENT MEANS. ALTERNATE SHORING OR SLOPING SYSTEMS MAY BE USED WHEN DESIGNED BY A CIVIL ENGINEER LICENSED IN THE STATE OF CALIFORNIA; (CALIFORNIA ADMINISTRATION CODE, TITLE 8, INDUSTRIAL SAFETY ORDERS, SECTIONS 1500-1937).
2. WHEN HARDPAN, ROCKS OR OTHER NON-SELECT SOILS ARE ENCOUNTERED, OVER-EXCAVATE A MINIMUM OF 4-INCHES, OR AS DIRECTED, AND REPLACED WITH COMPACTED NATIVE (90% MINIMUM RELATIVE COMPACTION), TO PIPE SUBGRADE.
3. WHEN GROUND WATER IS ENCOUNTERED, CRUSHED ROCK (1/4-INCH MINIMUM, 3/4-INCH MAXIMUM) SHALL BE USED IN THE PIPE ZONE. THE SAME PERTAINS TO ANY UNSTABLE SOIL CONDITIONS.
4. SIX INCHES OF CRUSHED AGGREGATE BASE SHALL BE PLACED UNDER THE REQUIRED ASPHALT SECTION IN ALL CASES.
5. ASPHALT SHALL BE REPLACED AS 1-INCH THICKER THAN EXISTING.
6. ALL TRENCHES 30-INCHES IN WIDTH OR LESS SHALL BE BACKFILLED WITH CRUSHED AGGREGATE BASE MATERIAL OR 2 SACK CEMENT-SAND SLURRY AS DIRECTED BY THE CITY. ALL TRENCHES PERPENDICULAR TO THE STREET CENTERLINE SHALL BE BACKFILLED WITH 2 SACK CEMENT-SLURRY AS DIRECTED BY THE CITY.
7. TRENCHES BACKFILLED WITH NATIVE MATERIAL SHALL HAVE COMPACTION TESTS PERFORMED AT THE EXPENSE OF THE CONTRACTOR TO VERIFY DENSITY ACHIEVED. WRITTEN TEST REPORTS SHALL BE PROVIDED TO THE CITY BEFORE WORK WILL BE ACCEPTED.
8. WHEN DISTANCE BETWEEN EDGE OF GUTTER OR CURB AND TRENCH WALL IS FIVE FEET OR LESS, ASPHALT PAVING SHALL BE REMOVED AND REPLACED TO EDGE OF GUTTER OR CURB.



DEPARTMENT OF PUBLIC WORKS

STANDARD DRAWING:

TRENCH EXCAVATION AND BACKFILL

APPROVED:

Ben B... 4/30/87
CITY OF LA VERNE

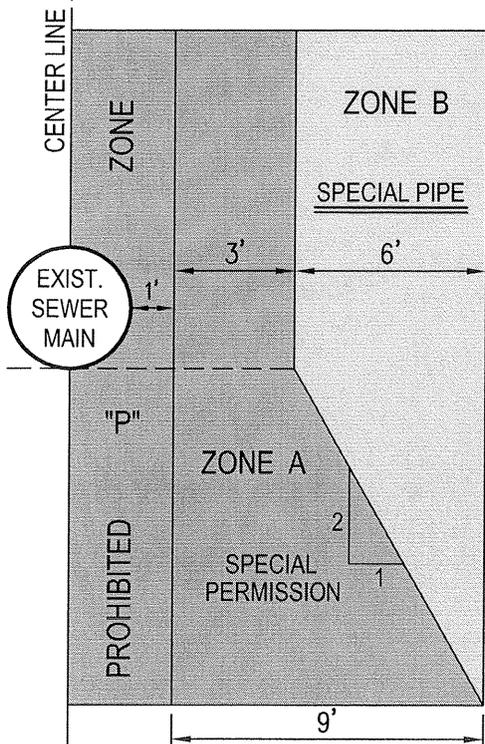
W. David ... 4/15/97
ENGINEER

43296
RCE No.

4/30/87 DATE
4/15/97 DATE

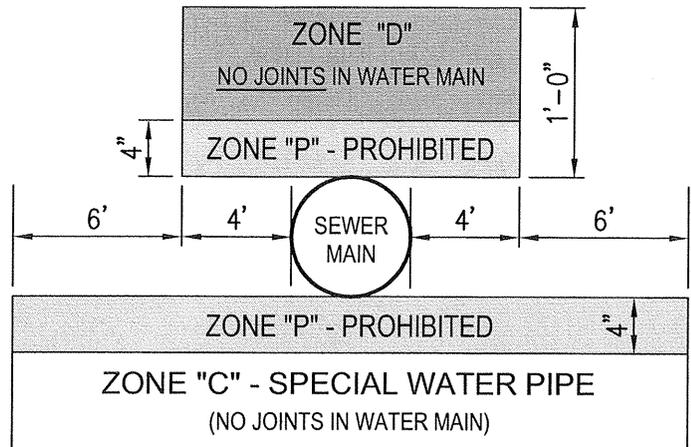
	BY	DATE
DESIGNED	W.D.B.	4/97
DRAWN	C.G.	4/97
CHECKED	W.D.B.	4/97
SCALE:	DWG. No.	
AS SHOWN	W-20	
DATE OF REVISION:		
APRIL 1997	SHT. 1 OF 1	

PARALLEL CONSTRUCTION



NOTE: ZONE IDENTICAL ON EITHER SIDE OF CENTER LINES.

PERPENDICULAR CONSTRUCTION

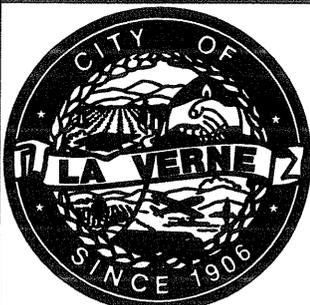


ZONE SPECIAL CONSTRUCTION REQUIRED FOR WATER MAIN

- A** NO WATER MAINS PARALLEL TO SANITARY SEWER MAINS SHALL BE CONSTRUCTED WITHOUT PRIOR WRITTEN APPROVAL FROM THE DEPARTMENT OF PUBLIC HEALTH SERVICES AND THE CITY OF LA VERNE.
- B** THE WATER MAIN SHOULD BE CONSTRUCTED OF ONE OF THE FOLLOWING
- DUCTILE IRON PIPE WITH HOT DIP BITUMINOUS COATING;
 - HDPE PIPE WITH FUSION WELDED JOINTS (PER AWWA C906-LATEST EDITION);
 - DIPPED AND WRAPPED 1/4" THICK WELDED STEEL PIPE;
 - CLASS 200 PRESSURE RATED PVC WATER PIPE (DR 14 PER AWWA C900-LATEST EDITION);
 - REINFORCED CONCRETE PRESSURE PIPE, STEEL CYLINDER, PER AWWA (C300 OR C302 OR C303 - LATEST EDITION).
- C** THE WATER MAIN SHOULD HAVE NO JOINTS IN ZONE C AND BE CONSTRUCTED OF ONE OF THE FOLLOWING:
- DUCTILE IRON PIPE WITH HOT DIP BITUMINOUS COATING;
 - HDPE PIPE WITH FUSION WELDED JOINTS (PER AWWA C906-LATEST EDITION);
 - DIPPED AND WRAPPED 1/4" THICK WELDED STEEL PIPE;
 - CLASS 200 PRESSURE RATED PVC WATER PIPE (DR 14 PER AWWA C900-LATEST EDITION);
 - REINFORCED CONCRETE PRESSURE PIPE, STEEL CYLINDER, PER AWWA (C300 OR C302 OR C303 - LATEST EDITION).
- D** THE WATER MAIN SHOULD HAVE NO JOINTS WITHIN 4' FROM EITHER SIDE OF THE SANITARY SEWER MAIN AND SHOULD BE CONSTRUCTED AS FOR ZONE C.
- P** IS A PROHIBITED ZONE, SECTION 64630 (e) (2) CALIFORNIA ADMINISTRATIVE CODE, TITLE 22.

ADDITIONAL NOTES:

- WATER MAINS AND SEWER LINES MUST NOT BE INSTALLED IN THE SAME TRENCH.
- SEPARATION DISTANCES SPECIFIED SHALL BE MEASURED FROM THE NEAREST EDGE OF FACILITIES.



DEPARTMENT OF PUBLIC WORKS

DESIGN REQUIREMENTS FOR NEW WATER MAINS IN THE VICINITY OF SANITARY SEWERS

APPROVED:

CITY OF LA VERNE

CITY UTILITY ENGINEER

43296
RCE No.

[Signature]
DATE
4/4/11
[Signature]
DATE
3/31/11

SCALE:

N.T.S.

DATE OF REVISION:

MARCH 2011

BY DATE

DESIGNED R.D.H. 03/11

DRAWN J.T. 03/11

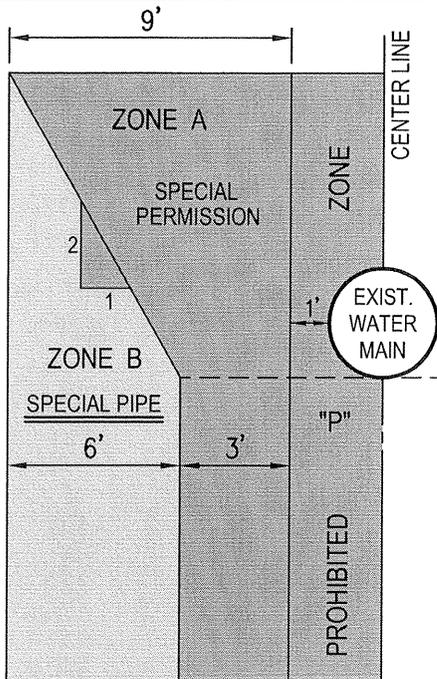
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STD. DWG. NO.

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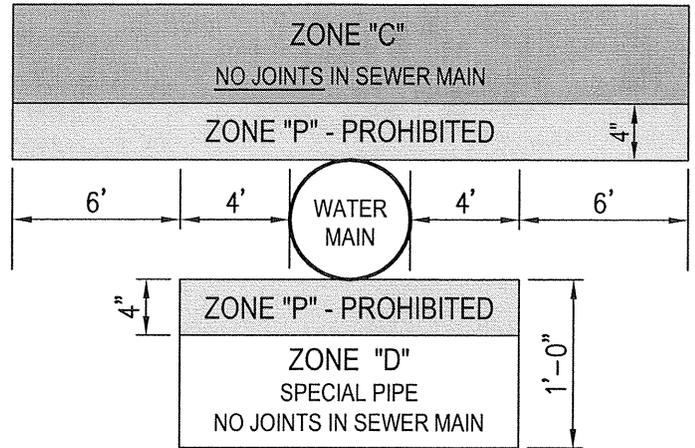
SHT. 1 OF 1

PARALLEL CONSTRUCTION



NOTE: ZONES IDENTICAL ON EITHER SIDE OF CENTER LINES

PERPENDICULAR CONSTRUCTION



ZONE SPECIAL CONSTRUCTION REQUIRED FOR WATER MAIN

- A SANITARY SEWER MAINS PARALLEL TO WATER MAINS SHALL NOT BE PERMITTED IN THIS ZONE WITHOUT PRIOR WRITTEN APPROVAL FROM THE DEPARTMENT OF PUBLIC HEALTH AND THE CITY OF LA VERNE.
- B THE SANITARY SEWER MAIN SHOULD BE CONSTRUCTED OF ONE OF THE FOLLOWING:
 - a) HIGH-DENSITY-POLYETHYLENE (HDPE) PIPE WITH FUSION WELDED JOINTS (PER AWWA C906-LATEST EDITION);
 - b) EXTRA STRENGTH VITRIFIED CLAY PIPE WITH COMPRESSION JOINTS;
 - c) PVC SEWER PIPE WITH RUBBER RING JOINTS (PER ASTM D3034) OR EQUIVALENT;
 - d) CAST OR DUCTILE IRON PIPE WITH COMPRESSION JOINTS; OR
 - e) REINFORCED CONCRETE PRESSURE PIPE WITH COMPRESSION JOINTS (PER AWWA C302-LATEST EDITION).
- C THE SANITARY SEWER MAIN SHOULD HAVE NO JOINTS IN ZONE C AND BE CONSTRUCTED OF ONE OF THE FOLLOWING:
 - a) HDPE PIPE WITH FUSION-WELDED JOINTS (PER AWWA C906-LATEST EDITION);
 - b) DUCTILE IRON PIPE WITH HOT DIP BITUMINOUS COATING AND MECHANICAL JOINTS (GASKETED, BOLTED JOINTS);
 - c) A CONTINUOUS SECTION OF CLASS 200 (DR 14 PER AWWA C900-LATEST EDITION) PVC PIPE OR EQUIVALENT, CENTERED OVER THE PIPE BEING CROSSED;
 - d) A CONTINUOUS SECTION OF REINFORCED CONCRETE PRESSURE PIPE (PER AWWA C302-LATEST EDITION) CENTERED OVER THE PIPE BEING CROSSED; OR
 - e) ANY SANITARY SEWER MAIN WITHIN A CONTINUOUS SLEEVE.
- D THE SANITARY SEWER MAIN SHOULD HAVE NO JOINTS WITHIN FOUR FEET FROM EITHER SIDE OF THE WATER MAIN AND SHOULD BE CONSTRUCTED OF ONE OF THE FOLLOWING:
 - a) A CONTINUOUS SECTION OF DUCTILE IRON PIPE WITH HOT DIP BITUMINOUS COATING; OR
 - b) ONE OF THE ZONE C OPTIONS a), c), d), OR e) ABOVE.
- P ZONES "P" IS A PROHIBITED ZONE, SECTION 64630 (e) (2) CALIFORNIA ADMINISTRATIVE CODE, TITLE 22.

ADDITIONAL NOTES:

1. WATER MAINS AND SEWER LINES MUST NOT BE INSTALLED IN THE SAME TRENCH.
2. SEPARATION DISTANCES SPECIFIED SHALL BE MEASURED FROM THE NEAREST EDGE OF FACILITIES.



DEPARTMENT OF PUBLIC WORKS

DESIGN REQUIREMENTS FOR NEW SANITARY SEWERS IN THE VICINITY OF WATER MAINS

APPROVED:

CITY OF LA VERNE

CITY UTILITY ENGINEER

43296
RCE No.

DATE
DATE

SCALE:

N.T.S.

DATE OF REVISION:

MARCH 2011

BY DATE

DESIGNED R.D.H. 03/11

DRAWN J.T. 03/11

CHECKED W.D.B. 03/11

STD. DWG. NO.

W-22

SHT. 1 OF 1