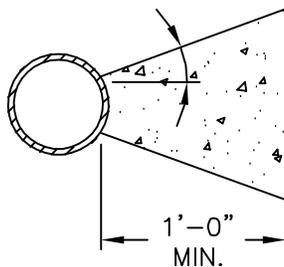


TYPICAL THRUST BLOCK BEND

TYPICAL THRUST BLOCK TEE OUTLET

TYPICAL THRUST BLOCK DEAD END

45° MAX. (TYP. FOR ALL ANGLES).



TYPICAL SECTION THRU THRUST BLOCK

NOTES:

1. ALL THRUST BLOCKS SHALL BE POURED AGAINST UNDISTURBED SOIL.
2. RESTRAINT SYSTEM FOR VERTICAL PIPE BENDS SHALL BE APPROVED BY THE CITY ENGINEER.
3. THRUST RESTRAINT SYSTEMS FOR PIPES LARGER THAN 12" SHALL BE DESIGNED ON A CASE BY CASE BASIS AND SHALL BE APPROVED BY THE CITY ENGINEER.

THRUST BLOCK AREA REQUIRED		
FITTINGS	ALLOWABLE SOIL BEARING VALUE	
	1000 LBS. PER SQ. FT.	
6" LINE OR SMALLER	"A"	"B"
22 1/2"	1'-6"	1'-6"
45°	2'-0"	2'-0"
90°	3'-0"	2'-6"
TEE OUTLET	2'-6"	2'-0"
DEAD END	2'-6"	2'-0"
8" LINE		
22 1/2"	2'-0"	2'-0"
45°	3'-0"	2'-6"
90°	4'-0"	3'-0"
TEE OUTLET	3'-0"	3'-0"
DEAD END	3'-0"	3'-0"
10" LINE		
22 1/2"	3'-0"	2'-0"
45°	3'-6"	3'-0"
90°	5'-0"	4'-0"
TEE OUTLET	4'-0"	3'-6"
DEAD END	4'-0"	3'-6"
12" LINE		
22 1/2"	3'-0"	3'-0"
45°	4'-0"	4'-0"
90°	7'-0"	4'-0"
TEE OUTLET	5'-0"	4'-0"
DEAD END	5'-0"	4'-0"

REV. NO.	REV. DATE	REV. BY
3	10/7/93	SA
DIGITIZED		1/1/92
DWG. BY	RC	SCALE
CK. BY		NONE

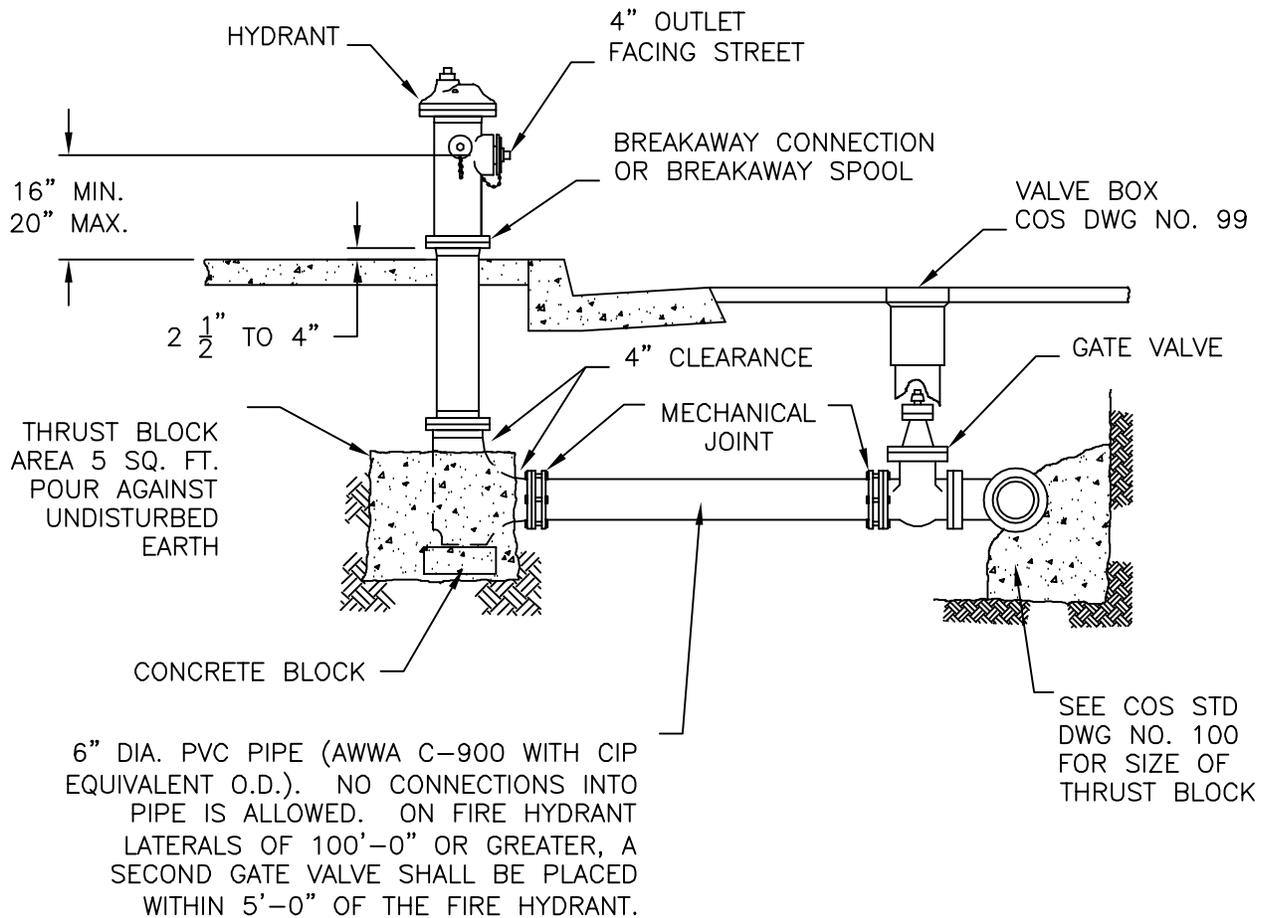
THRUST BLOCK DETAILS

CITY OF STOCKTON
DEPARTMENT OF PUBLIC WORKS

REVISION APPROVED BY CITY ENGINEER
Finbar J. O'Regan
DATE: 01/09/02

SUPERCEDES
DWG. DATED
7/1/89

DRAWING NO.
100



HYDRANTS

CLOW "MEDALLION" AMERICAN DARLING MODEL B-62B, KENNEDY GUARDIAN K81A MUELLER "CENTURION", "MODERN CENTURION" M&H VALVE CO. STYLE 129 WATEROUS PACER. (2) 2-1/2" AND (1) 4" NST OUTLETS (OPEN COUNTERCLOCKWISE). 1-1/4" PENTAGON OPERATING AND CAP NUTS. DRIP PLUGS, IF ANY, SHALL BE PLUGGED. HYDRANTS SHALL BE LOCATED AT P/L EXTENSION, AT END OF CURB RETURN, 3' MIN. FROM DRIVEWAYS OR AS SHOWN ON PLANS.

HYDRANT "T" TO DUCTILE IRON PIPE OR PVC C-900 FOR NEW DEVELOPMENT

CITY WATER SYSTEM:
RING TITE BY RING TITE BY FLANGE.
CALIFORNIA WATER SERVICE CO.:
GRIP TITE BY GRIP TITE BY FLANGE.

CONTACT RESPECTIVE WATER SYSTEM REGARDING CONNECTION TO PIPE BY OTHER MATERIAL.

GATE VALVES

CLOW "RESILIENT WEDGE"
MUELLER "RESILIENT SEAT"
AMERICAN DARLING
KENNEDY RESILIENT
WATEROUS SERIES 500

REV. NO.	REV. DATE	REV. BY
3	6/1/2000	HLE/RH
DIGITIZED		7/1/90
DWG. BY	RC	SCALE
CK. BY		NONE

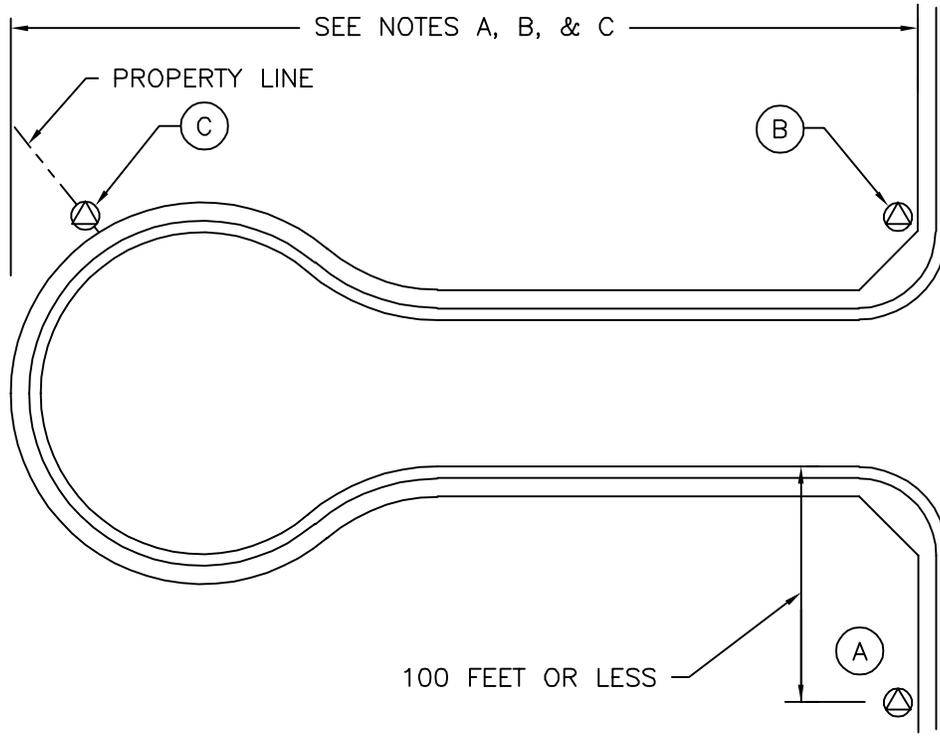
FIRE HYDRANT

CITY OF STOCKTON
DEPARTMENT OF PUBLIC WORKS

REVISION APPROVED BY CITY ENGINEER
Finbar J. O'Regan
DATE: 01/09/02
SUPERCEDES
DWG. DATED
10/7/93
DRAWING NO.
101

IF THE LENGTH OF THE CUL-DE-SAC IS:

- A. LESS THAN 250'-0",
THEN THE FIRE HYDRANT SHALL BE PLACED WITHIN 100'-0" OF THE CUL-DE-SAC ENTRANCE AND NO FIRE HYDRANT SHALL BE PLACED IN THE CUL-DE-SAC (SEE LOCATION A, BELOW).
- B. GREATER THAN 250'-0" BUT LESS THAN 400'-0",
THEN THE FIRE HYDRANT SHALL BE PLACED AT THE CUL-DE-SAC ENTRANCE AND NO FIRE HYDRANT SHALL BE PLACED IN THE CUL-DE-SAC (SEE LOCATION B, BELOW).
- C. GREATER THAN 400'-0",
THEN THE FIRE HYDRANT SHALL BE PLACED AT THE PROPERTY LINE (SEE LOCATION C BELOW).

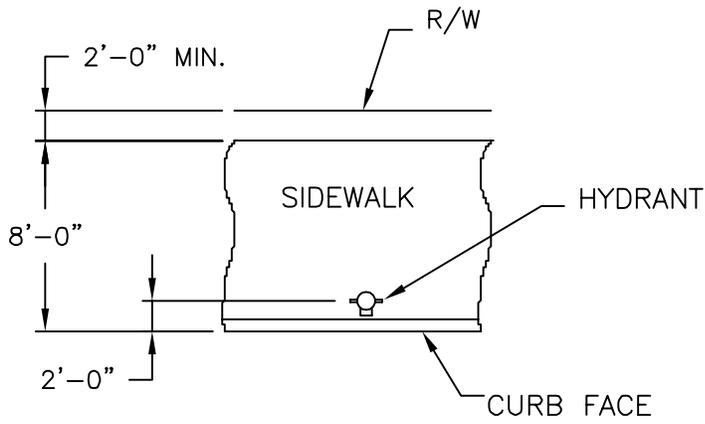


FIRE HYDRANT LOCATION ON CUL-DE-SACS

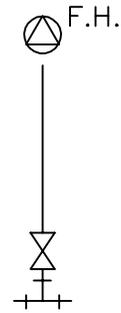
NOTES:

1. FIRE HYDRANTS SHALL BE LOCATED ON ALL REQUIRED ACCESS ROADWAYS AND CITY STREETS ACCORDING TO THE FOLLOWING REQUIREMENTS:
 - a) 300'-0" ON CENTER FOR ALL COMMERCIAL/INDUSTRIAL PROPERTIES.
 - b) 400'-0" ON CENTER FOR GROUP R-1 OCCUPANCIES AS DEFINED IN THE UBC (UNIFORM BUILDING CODE).
 - c) 600'-0" ON CENTER FOR GROUP R-3 OCCUPANCIES AS DEFINED IN THE UBC (UNIFORM BUILDING CODE).
2. DOG-LEGGED CUL-DE-SACS REQUIRE FIRE HYDRANT(S) TO BE LOCATED BY THE FIRE MARSHAL.

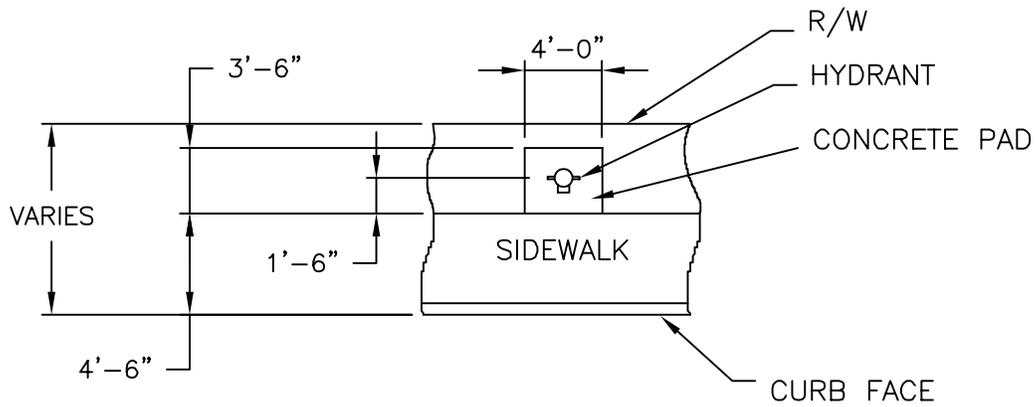
REV. NO.	REV. DATE	REV. BY	FIRE HYDRANT SPACING	DIGITIZED VERSION APPROVED BY CITY ENGINEER <i>Finbar J. O'Regan</i> DATE: 01/09/02
2	6/1/2000	HLE/RH		
DWG. BY	RC	SCALE	CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SUPERCEDES DWG. DATED 2/23/95
CK. BY	NS	NONE		



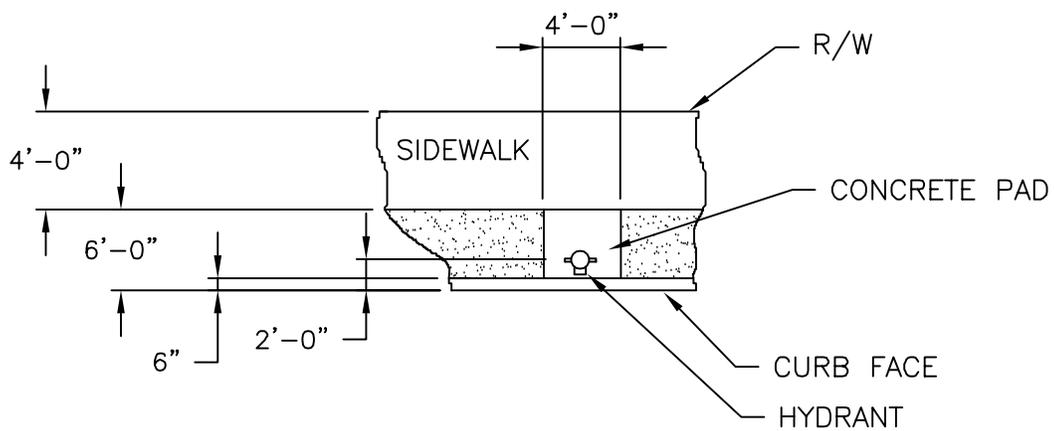
COMMERCIAL



SYMBOL ON PLANS



WITHOUT PLANTER STRIP



WITH PLANTER STRIP

REV. NO.	REV. DATE	REV. BY
4	6/1/2003	HL/EA
DIGITIZED		7/1/90
DWG. BY	RC	SCALE
CK. BY		NONE

FIRE HYDRANT LOCATION

CITY OF STOCKTON
DEPARTMENT OF PUBLIC WORKS

REVISION APPROVED BY CITY ENGINEER
Finbar J. O'Regan
DATE: 11/25/03

SUPERCEDES
DWG. DATED
01/09/02

DRAWING NO.
101B

STANDARDS FOR FIRE PROTECTION SYSTEMS

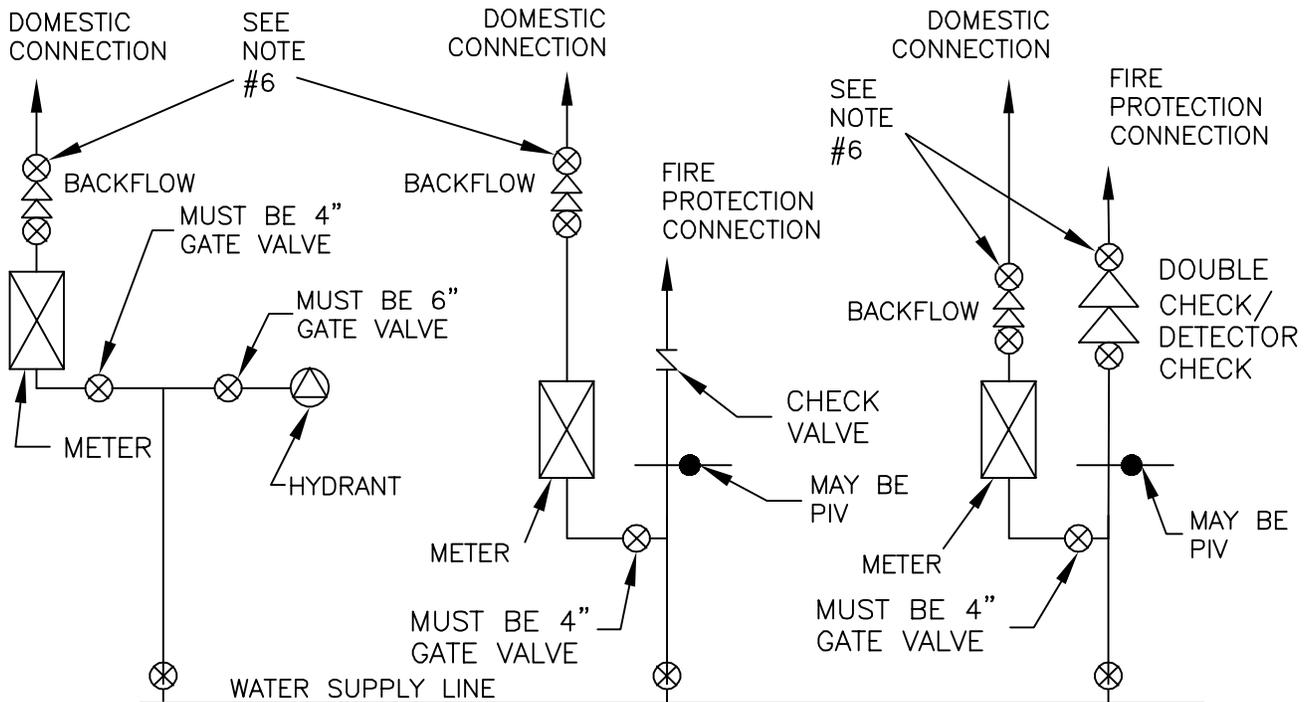
GENERAL:

1. ALL PRIVATE UNDERGROUND FIRE SYSTEMS, INCLUDING HYDRANT SYSTEMS AND UNDERGROUND MAINS FOR SPRINKLER SYSTEMS AND FIRE PUMPS SERVING SPRINKLER SYSTEMS, CROSS-CONNECTED TO UNAPPROVED WATER SOURCES AND CONNECTED TO DOMESTIC WATER MAINS SHALL HAVE BACKFLOW PREVENTION AS REQUIRED BY AWWA M-14 FOR CLASSES III, IV, V AND VI FIRE SYSTEMS.
2. PLANS SHALL BE SUBMITTED FOR APPROVAL BY THE FIRE DEPARTMENT AND CITY MUNICIPAL UTILITIES DEPARTMENT PRIOR TO CONSTRUCTION. "AS BUILT" DRAWINGS SHALL BE PROVIDED PRIOR TO CONSTRUCTION TO THE PUBLIC WATER SYSTEM. (THE SAME PLAN SUBMITTAL REQUIREMENTS APPLY TO INSTALLATIONS CONNECTED TO CALIFORNIA WATER SERVICE COMPANY MAINS.)
3. ALL UNDERGROUND FIRE PROTECTION SYSTEMS SHALL BE DISINFECTED PRIOR TO CONNECTING TO PUBLIC WATER SYSTEM IN ACCORDANCE WITH CITY OF STOCKTON STANDARD SPECIFICATION SECTION 76.
4. WITHIN THE CITY WATER SERVICE AREA, ALL ON-SITE FIRE HYDRANT SYSTEMS 300'-0" OR MORE FROM THE PROPERTY LINE SHALL HAVE A DETECTOR CHECK LOCATED AT THE PROPERTY LINE IMMEDIATELY DOWN-STREAM OF THE MAIN SHUT OFF VALVE. PLANS AND SPECIFICATIONS SHALL BE SUBMITTED FOR APPROVAL BY THE MUNICIPAL UTILITIES DEPARTMENT.
5. SYSTEM DESIGN SHALL BE BASED ON THE CALIFORNIA FIRE CODE, APPLICABLE PROVISION OF NATIONAL FIRE PROTECTION ASSOCIATION STANDARDS 13 AND 24, AND REQUIREMENTS OF THE STOCKTON FIRE DEPARTMENT. NOTE: CALIFORNIA WATER SERVICE COMPANY MAY HAVE OTHER REQUIREMENTS WHEN CONNECTION TO THEIR MAINS. THRUST BLOCK LOCATION AND THRUST BLOCK SIZE, HYDRANT SPACING, PIPE SIZES AND LENGTHS AND OTHER RELEVANT INFORMATION IS REQUIRED ON THE PLANS. PLANS MUST CLEARLY SHOW THAT BOLTS AND TIE RODS WILL BE COATED WITH A BITUMINOUS MATERIAL AND WRAPPED PRIOR TO COVERING.
6. THE STOCKTON FIRE DEPARTMENT REQUIRES CLASS 200 C-900 PIPE FOR PRESSURIZED UNDERGROUND MAINS. POST INDICATOR VALVES AND FIRE DEPARTMENT CONNECTIONS FOR SPRINKLER SYSTEMS SHALL BE AT LEAST 40 FEET FROM BUILDINGS. SECTIONAL VALVES SHALL BE UL LISTED FIRE PROTECTION VALVES. ALL VALVES CONTROLLING WATER SUPPLIES TO SPRINKLER SYSTEMS SHALL BE MONITORED BY A UL LISTED CENTRAL STATION. THIS REQUIRES THE CONTRACTOR TO PROVIDE PVC PIPE FOR LOW VOLTAGE CONNECTION OF THE VALVE'S TAMPER SWITCH TO THE FIRE ALARM PANEL NORMALLY LOCATED IN THE BUILDING. THIS REQUIREMENT IS MANDATORY, REGARDLESS IF THE BUILDING CONTAINS LESS THAN 100 SPRINKLER HEADS. TRACER WIRE IS REQUIRED FOR ALL UNDERGROUND MAINS FOR BOTH HYDRANT AND SPRINKLER SYSTEMS.

<i>REV. NO.</i>	<i>REV. DATE</i>	<i>REV. BY</i>	FIRE PROTECTION SYSTEM STANDARDS	<i>REVISION APPROVED BY CITY ENGINEER</i> <i>Finbar J. O'Regan</i>
3	6/1/2000	HLE/RH		DATE: 01/09/02
<i>DIGITIZED</i>	1/1/92		CITY OF STOCKTON	<i>SUPERCEDES DWG. DATED</i>
<i>DWG. BY</i>	RC	<i>SCALE</i>	DEPARTMENT OF PUBLIC WORKS	<i>DRAWING NO.</i>
<i>CK. BY</i>		NONE		102

(CONT'D FROM DWG. 102)

STANDARDS FOR FIRE PROTECTION SYSTEMS

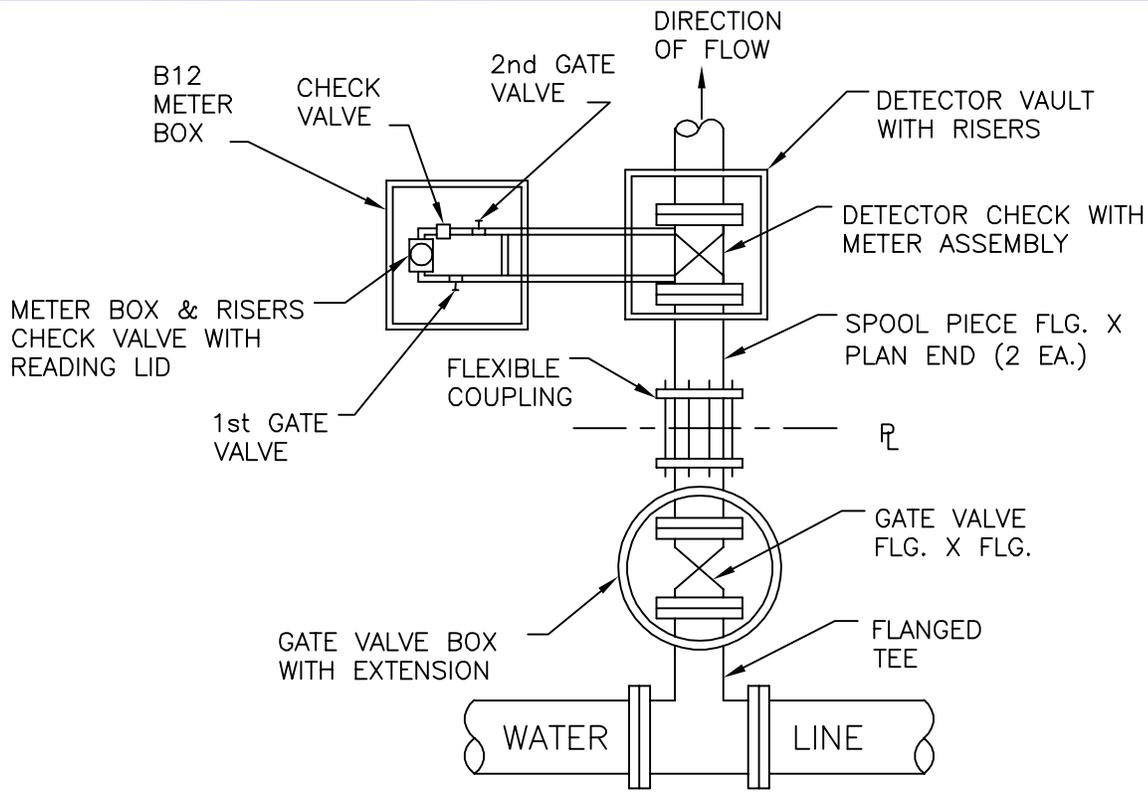


PIV = POST INDICATOR VALVE

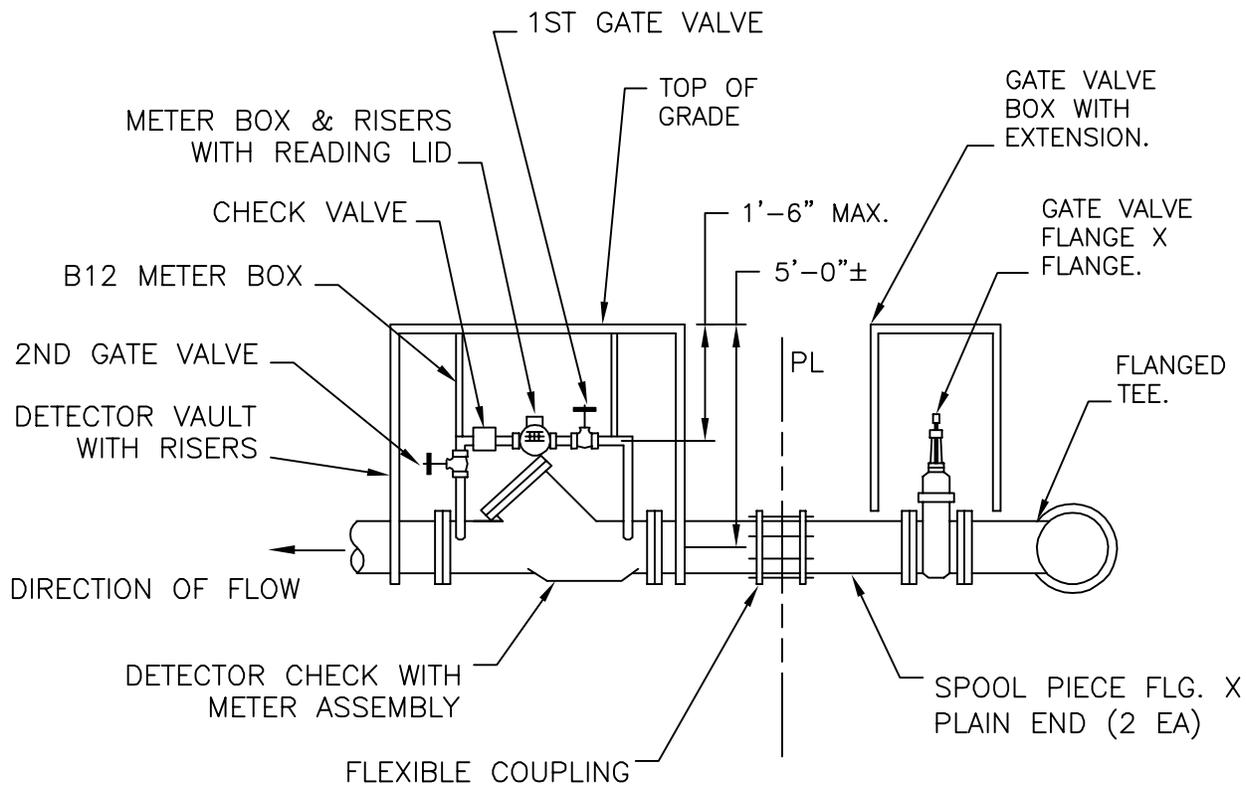
INSTALLATION AND INSPECTION REQUIREMENTS:

1. FIRE HYDRANTS, ON-STREET AND/OR ON SITE, SHALL BE INSTALLED IN ACCORDANCE WITH CITY OF STOCKTON STANDARD SPECIFICATIONS. INSPECTION APPROVAL BY FIRE DEPARTMENT IS REQUIRED PRIOR TO ANY BACKFILL.
2. A MATERIALS INSPECTION IS REQUIRED BEFORE ASSEMBLING UNDERGROUND FIRE PROTECTION SYSTEMS. STOCKTON FIRE DEPARTMENT PLAN APPROVAL IS REQUIRED PRIOR TO CONSTRUCTION.
3. A PRESSURE TEST AT 200 P.S.I. FOR 2 HOURS WITNESSED BY THE STOCKTON FIRE DEPARTMENT IS REQUIRED FOR ALL SYSTEMS. PLEASE NOTE THAT THE UNDERGROUND FIRE PROTECTION SYSTEM CAN ONLY BE FILLED USING A JUMPER EQUIPPED WITH A BACKFLOW PREVENTION DEVICE ACCORDING TO CITY OF STOCKTON STANDARDS. PIPE MAY BE CENTER LOADED FOR THIS INSPECTION, HOWEVER, ALL THRUST BLOCKS AND JOINTS MUST BE EXPOSED. PLEASE ALSO NOTE THAT COATING AND WRAPPING OF BOLTS AND TIE RODS, IF REQUIRED, MUST BE COMPLETED BEFORE CALLING FOR AN INSPECTION.
4. A SUCCESSFUL BACTERIAL TEST AND FLUSHING WITNESSED BY THE STOCKTON FIRE DEPARTMENT IS REQUIRED BEFORE CONNECTING TO THE PUBLIC MAIN IS PERMITTED.
5. SEPARATE SUBMITTALS TO THE STOCKTON FIRE DEPARTMENT ARE REQUIRED FOR ABOVE GROUND FIRE PROTECTION SYSTEMS.
6. VALVES ON BACKFLOW DEVICES ARE NOT TO BE USED TO SUBSTITUTE FOR VALVES SHOWN ON DIAGRAM. BACKFLOW DEVICES MUST REMAIN IN ORIGINAL CONFIGURATION AS PURCHASED FROM MANUFACTURER.

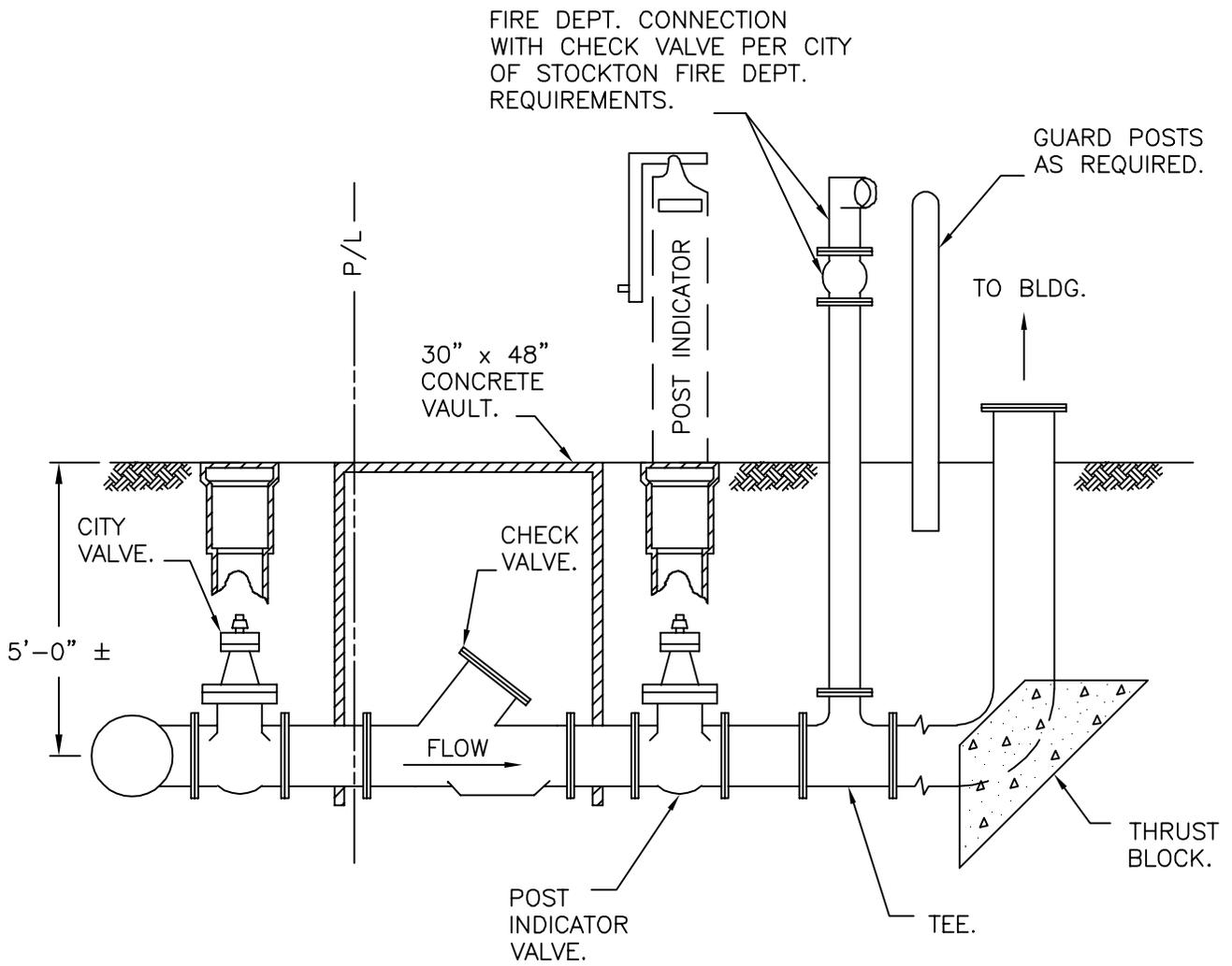
REV. NO.	REV. DATE	REV. BY	FIRE PROTECTION	<i>REVISION APPROVED BY CITY ENGINEER</i>
4	6/1/2003	HL/EA	SYSTEM STANDARDS	
DIGITIZED	1/1/92		CITY OF STOCKTON	DATE:
DWG. BY	RC	SCALE	DEPARTMENT OF PUBLIC WORKS	SUPERCEDES DWG. DATED
CK. BY		NONE		01/09/02
				102A



PLAN VIEW



REV. NO.	REV. DATE	REV. BY	DETECTOR CHECK METER ASSEMBLY	REVISION APPROVED BY CITY ENGINEER <i>Finbar J. O'Regan</i> DATE: 01/09/02	
4	6/1/2000	HLE/RH		CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	
DIGITIZED		1/1/92	SUPERCEDES DWG. DATED 6/1/94		DRAWING NO. 103
DWG. BY	RC	SCALE			
CK. BY		NONE			



REV. NO.	REV. DATE	REV. BY
2	6/1/2000	CHL/RH
DIGITIZED		7/1/91
DWG. BY	RC	SCALE
CK. BY		NONE

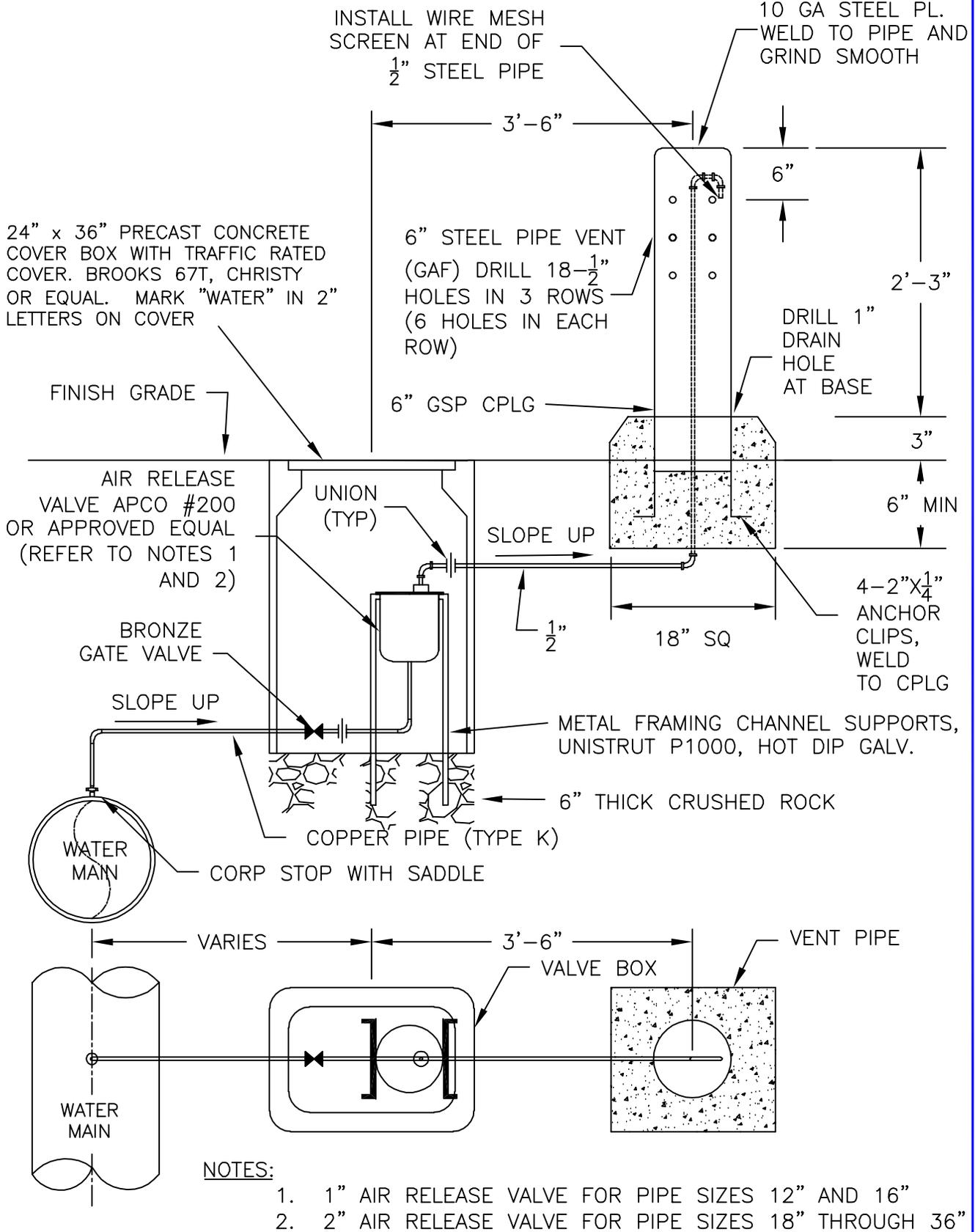
TYPICAL FIRE SPRINKLER LINE WITH POST INDICATOR VALVE

CITY OF STOCKTON
DEPARTMENT OF PUBLIC WORKS

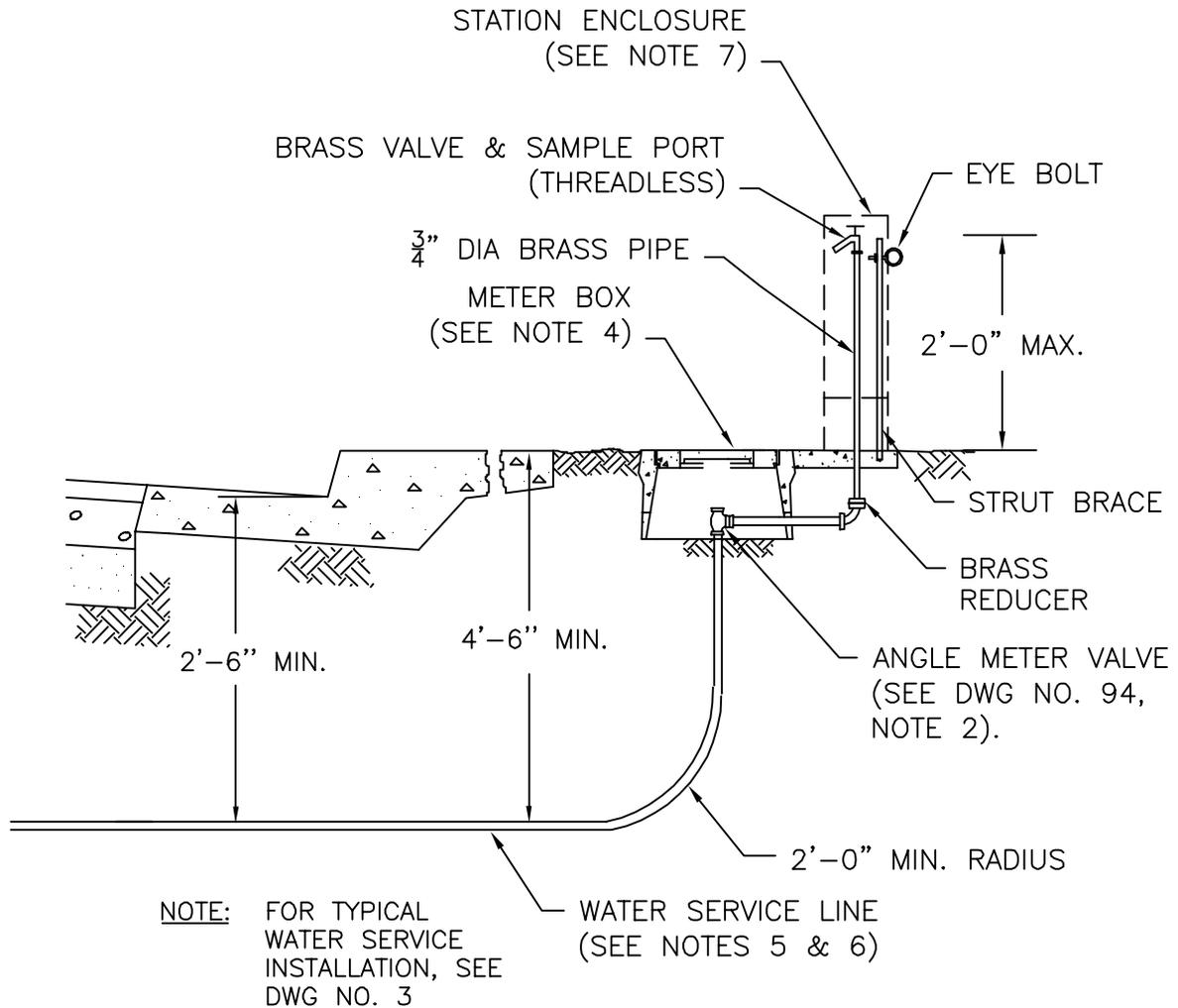
REVISION APPROVED BY CITY ENGINEER
Finbar J. O'Regan
DATE: 01/09/02

SUPERCEDES
DWG. DATED
10/7/93

DRAWING NO.
103A



REV. NO.	REV. DATE	REV. BY	AIR RELEASE VALVE	REVISION APPROVED BY CITY ENGINEER
				WATER MAINS 12" - 36" DIAMETER
DIGITIZED	03/20/03		CITY OF STOCKTON	DATE: 11/25/03
DWG. BY	AST	SCALE	DEPARTMENT OF PUBLIC WORKS	SUPERCEDES DWG. DATED
CK. BY		NONE		DRAWING NO. 104



NOTES:

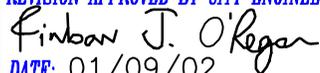
1. SEE DWG NO. 94 AND 94A FOR FITTINGS.
2. SERVICE LINE SHALL BE A DEDICATED LINE FOR THE SAMPLING STATION UNLESS PRIOR APPROVAL OF MUNICIPAL UTILITIES DEPARTMENT.
3. SAMPLING STATION MAY BE PLACED ADJACENT TO PROPERTY OR EASEMENT LINE WITH PRIOR APPROVAL OF MUNICIPAL UTILITIES DEPARTMENT.
4. SEE DWG NO. 94, NOTES 4 & 5, FOR METER BOX & LID TYPE.
5. PLASTIC SERVICE PIPE TO BE CONTINUOUS WITH NO SPLICING ALLOWED.
6. 1" DIAMETER MINIMUM LINE FOR EACH STATION.
7. STATION ENCLOSURE SHALL BE PROVIDED BY CITY OF STOCKTON.

REV. NO.	REV. DATE	REV. BY	WATER SAMPLING STATION	REVISION APPROVED BY CITY ENGINEER	
				Finbar J. O'Regan DATE: 11/25/03	
DIGITIZED		3/03	CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SUPERCEDES	
DWG. BY	BB	SCALE		DWG. DATED	
CK. BY		NONE		DRAWING NO. 105	

ELECTRICAL IMPROVEMENT PLAN STANDARDS

ALL IMPROVEMENT PLANS INVOLVING THE INSTALLATION OR RELOCATION OF A STREET LIGHTING SYSTEM SHALL INCLUDE THE FOLLOWING DETAILED INFORMATION:

1. LOCATION OF ALL UNDERGROUND CONDUITS.
2. THE SIZE AND TYPE OF ALL CONDUITS.
3. THE NUMBER, SIZE AND TYPE OF ALL CONDUCTORS IN EACH CONDUIT.
4. THE SERVICE LOCATION OF THE P.G.&E. POWER SOURCE, TO INCLUDE THE POLE QUADRANT (SEE DWG. NO. 115).
5. THE LOCATION OF EACH STREET LIGHT FIXTURE.
6. THE LOCATION OF EACH PULLBOX.
7. THE VOLTAGE FOR EACH CIRCUIT AND THE WATTAGE OF EACH LUMINAIRE.
8. THE WIRE SIZE CALCULATIONS WHERE MULTIPLE CIRCUITS ARE USED.
9. A SUBDIVISION MASTER PLAN SHOWING ALL STREET LIGHTS SHALL BE REQUIRED FOR DEVELOPMENTS HAVING MORE THAN ONE FINAL MAP OR AS REQUIRED BY THE CITY ENGINEER.

REV. NO.	REV. DATE	REV. BY	PLAN REQUIREMENTS FOR STREET LIGHTING WORK	REVISION APPROVED BY CITY ENGINEER	
4	6/1/2000	HLE/RH		 DATE: 01/09/02	
DIGITIZED		7/1/91	CITY OF STOCKTON DEPARTMENT OF PUBLIC WORKS	SUPERCEDES DWG. DATED	DRAWING NO.
DWG. BY	RC	SCALE		10/7/93	109
CK. BY		NONE			