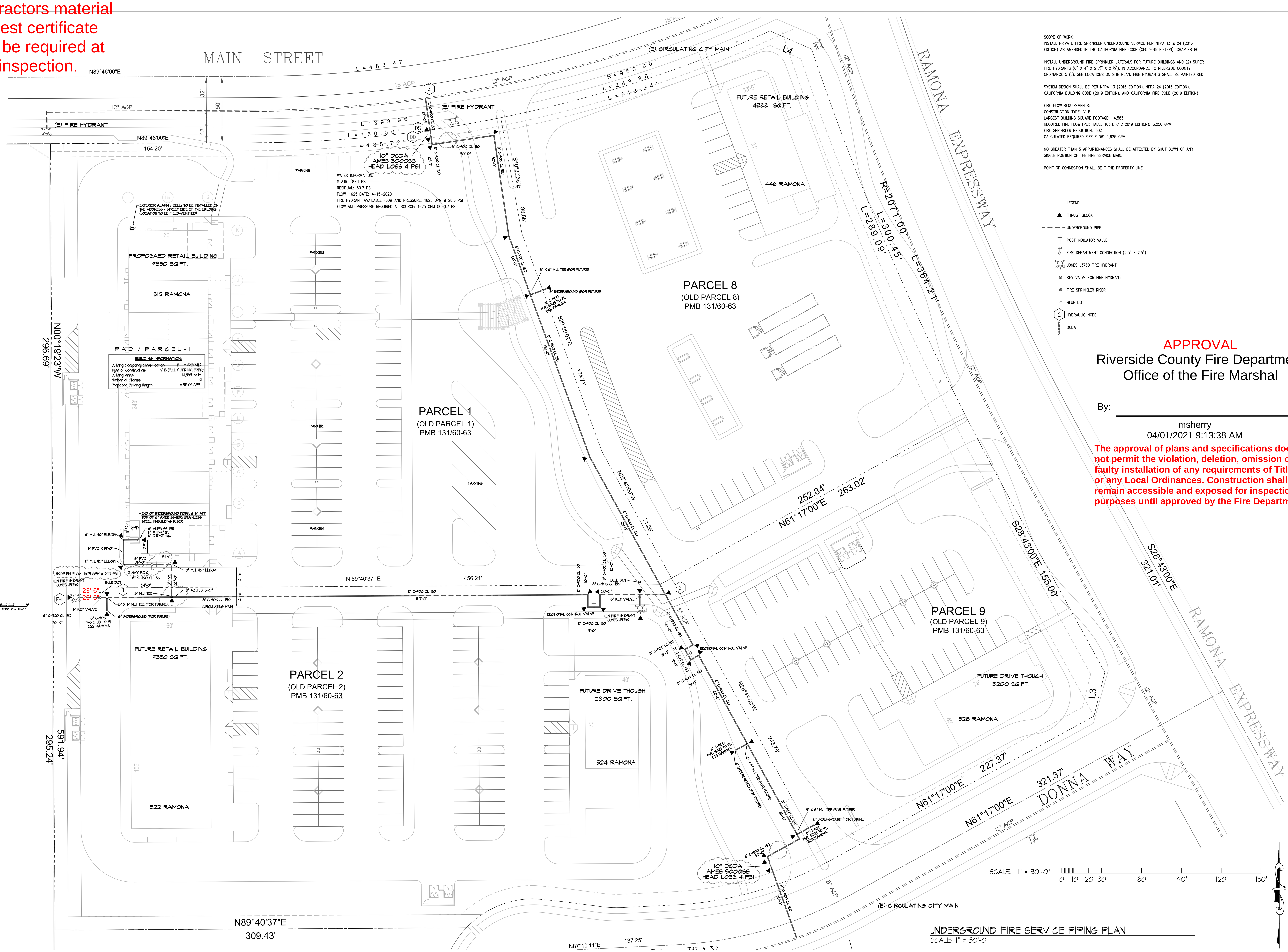
Contractors material and test certificate shall be required at final inspection.



UNDERGROUND FIRE SERVICE PIPING PLAN

SCALE: 1" = 30'-0"

SCOPE OF WORK:
INSTALL PRIVATE FIRE SPRINKLER UNDERGROUND SERVICE PER NFPA 13 & 24 (2016 EDITION) AS AMENDED IN THE CALIFORNIA FIRE CODE (CFC 2019 EDITION), CHAPTER 80.

INSTALL UNDERGROUND FIRE SPRINKLER LATERALS FOR FUTURE BUILDINGS AND (2) SUPER FIRE HYDRANTS (6" X 4" X 2 ½" X 2 ½"), IN ACCORDANCE TO RIVERSIDE COUNTY ORDINANCE 5 (J), SEE LOCATIONS ON SITE PLAN. FIRE HYDRANTS SHALL BE PAINTED RED

SYSTEM DESIGN SHALL BE PER NFPA 13 (2016 EDITION), NFPA 24 (2016 EDITION), CALIFORNIA BUILDING CODE (2019 EDITION), AND CALIFORNIA FIRE CODE (2019 EDITION)

FIRE FLOW REQUIREMENTS:
CONSTRUCTION TYPE: V-B
LARGEST BUILDING SQUARE FOOTAGE: 14,583
REQUIRED FIRE FLOW (PER TABLE 105.1, CFC 2019 EDITION): 3,250 GPM
FIRE SPRINKLER REDUCTION: 50%
CALCULATED REQUIRED FIRE FLOW: 1,625 GPM

NO GREATER THAN 5 APPURTENANCES SHALL BE AFFECTED BY SHUT DOWN OF ANY SINGLE PORTION OF THE FIRE SERVICE MAIN.

POINT OF CONNECTION SHALL BE T THE PROPERTY LINE

LEGEND:
- THRUST BLOCK
- UNDERGROUND PIPE
- POST INDICATOR VALVE
- FIRE DEPARTMENT CONNECTION (2.5" X 2.5")
- JONES J3760 FIRE HYDRANT
- KEY VALVE FOR FIRE HYDRANT
- FIRE SPRINKLER RISER
- BLUE DOT
- HYDRAULIC NODE
- DCDA

APPROVAL
Riverside County Fire Department
Office of the Fire Marshal

By:

msherry
04/01/2021 9:13:38 AM

The approval of plans and specifications does not permit the violation, deletion, omission or faulty installation of any requirements of Title 24 or any Local Ordinances. Construction shall remain accessible and exposed for inspection purposes until approved by the Fire Department.

UNDERGROUND

REV.	DATE	BY	REVISIONS
1	2-11-2021	RD	RE: PLAN CHECK COMMENTS
2	3-19-2021	RD	RE: PLAN CHECK COMMENTS

APPROVALS / APPLICABLE CODES:
RIVERSIDE COUNTY FIRE DEPT.
NFPA 13, 2016 Edition
NFPA 24, 2016 Edition
2016 CALIFORNIA FIRE CODE
2016 CALIFORNIA BUILDING CODE

APN: 433-160-024, 027, 028, 029, 032, 033 & 034

OWNER:
LUISENO VILLAGE
PAD 1
S.E.C. HWY 79 AND MAIN STREET
SAN JACINTO, CA 92583

ALL SPECKS, INC.
10073 VALLEY VIEW #101
CYPRESS, CA 90630, (714) 606-9141
CALIFORNIA STATE LIC. # C-16, 595397

FU-1

DRAWN BY:	CK
DATE:	11-18-2020
SCALE:	AS NOTED
JOB #:	19-1902
SHEET #:	1 OF 2

PRINT: #1 "PRELIMINARY UNDERGROUND PLAN" - PRINT DATE: 09-27-2019

FPUWP2000113

RE: NFPA 13, 2016 Edition

10.4.2* Protection of Piping. [24:10.4.2]

10.4.2.2 Protection from Mechanical Damage. The depth of cover for private fire service mains and their appurtenances to protect against mechanical damage shall be in accordance with 10.4.2.2.3. [24:10.4.2.2]

10.4.2.2.3 Private fire service mains installed under driveways or roadways shall be buried at a minimum depth of 3ft (900mm) [24:10.4.2.2.3]

10.4.3 Private Fire Service Mains Under Buildings. Except as allowed by 10.4.3, private fire service mains shall not be allowed to run under buildings. [24:10.4.3]

10.4.3.1* Private fire service mains supplying fire protection systems within the building shall be permitted to extend no more than 10 ft. (3m), as measured from the outside of the building, under the building to the riser location. [24:10.4.3.1]

10.4.3.1.1* Pipe joints shall not be located directly under foundation fittings. [24:10.4.3.1.1]

10.4.3.1.2* Piping shall be installed a minimum of 12 in. (300mm) below the bottom of building foundations or footers. [24: 10.4.3.1.2]

10.4.3.2.3 All joints shall be mechanically restrained. [24:10.4.3.2.3]

ON SITE FIRE HYDRANT DETAIL

ON-SITE FIRE HYDRANT DETAIL 903

AMES IN BUILDING RISER (IBR) IBR

ALL MATERIALS INSTALLED SHALL BE NEW UL AND / OR FM APPROVED FOR FIRE PROTECTION USE WHERE SUCH LISTINGS ARE APPLICABLE.

FITTINGS SHALL BE CLASS 250 DUCTILE IRON WITH FLANGED OR MECHANICAL JOINT ENDS.

MINIMUM PIPE COVER SHALL BE 36" OVER TRAFFIC ZONES – 30" OVER PEDESTRIAN ZONES.

ALL PIPE AND FITTINGS SHALL BE WRAPPED AND/ OR COATED AGAINST CORROSION IN ACCORDANCE WITH FIRE AND WATER DEPARTMENT REQUIREMENTS (IF APPLICABLE.)

PIPE SHALL BE INSTALLED WITH SAND OR EQUIVALENT MATERIAL SURROUNDING PIPE ZONE AS REQUIRED BY AUTHORITY HAVING JURISDICTION.

ALL PIPE PENETRATING CONCRETE OR MASONRY WALLS AND FLOOR SLABS SHALL BE PROVIDED WITH A 2" CLEAR SPACE AROUND THE OUTSIDE DIAMETER OF PIPE. HOLES FOR PENETRATIONS SHALL BE EITHER FILLED WITH APPROVED FLEXIBLE FIRE RESISTIVE MATERIAL OR SLEEVE IN ACCORDANCE WITH THE REQUIREMENTS OF THE AUTHORITIES HAVING JURISDICTION.

ALL PIPING, HYDROSTATIC TESTING AND FLUSHING OF SYSTEM ARE TO WITNESSED AND/ OR INSPECTED AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION PRIOR TO BEING BACKFILLED.

UNDERGROUND NOTES 605

AMES MODEL 3000 IN-LINE
Double Check Assembly
Outdoor Instlation –OS&Y Gates

AMES 3000 DCDA DETAIL 553

SYSTEM DESIGN SHALL CONFORM TO NFPA 13 & 24 (2016 EDITION) AND CITY ORANGE FIRE DEPARTMENT REQUIREMENTS.

DEPTH OF BURY:
UNDER ROADWAY: 36"
ALL OTHER AREAS: 30"

BACK FILL DETAIL 001

THRUST BLOCK BEARING AREA IN SQUARE FEET

PIPE SIZE	CONDITION							
	I	II	III	IV	V	VI	VII	VIII
<3"	2.0	2.9	2.0	280.0	280.0	480.6	2.0	280.6
6"	4.3	4.0	4.3	284.3	284.3	480.3	4.3	280.3
8"	7.4	10.6	7.4	287.4	287.4	480.7	7.4	285.7
10"	12.1	17.1	12.1	292.1	292.1	480.3	12.1	280.3
12"	17.2	24.1	17.2	297.2	297.2	480.2	17.2	283.2

NOTE:
1. THRUST BLOCK AREAS BASED ON 225 PSI AND 2,000 PSF SOIL PRESSURE WITH 2½ FEET OF COVER MINIMUM.
2. THRUST BLOCK BEARING FACES SHALL BE PLACED AGAINST UNDISTURBED SOIL, APPROVED COMPACTED BACKFILL, OR CLASS 100-E-100 SLURRY.
3. THRUST BLOCKS SHALL BE CLASS 560-C-3250 CONCRETE, UNLESS SPECIFIED OTHERWISE.
4. TO FACILITATE FUTURE REMOVAL OF THRUST BLOCKS AND LINE EXTENSION:
   INSTALL ¾" BENT ROD HANDLES.
   USE CARDBOARD SEPRATORS BETWEEN BLOCK, IF NEEDED.

THRUST BLOCK DETAIL 900

VICINITY MAP
NTS

FIRE PROTECTION C-16 948947 CONTRACTOR STATE OF CALIFORNIA

UNDERGROUND

REVISIONS

REV.	DATE	BY
1	2-11-2021	VM
2	3-14-2021	RD

APPROVALS / APPLICABLE CODES:

OWNER:	
RIVERSIDE COUNTY FIRE DEPT.	NFPA 13, 2016 Edition
	NFPA 24, 2016 Edition
	2016 CALIFORNIA FIRE CODE
	2016 CALIFORNIA BUILDING CODE

APN: 433-160-024, 027, 028, 029, 032, 033 & 034

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CYPRESS, CA 90630, (714) 606-4141
CALIFORNIA STATE LIC. # C-16, 948947

FU-2

DRAWN BY:	CK
DATE:	11-18-2020
SCALE:	AS NOTED
JOB #:	19-1402
SHEET #:	1 OF 2

PRINT: # THRELIMINARY UNDERGROUND PLAN - PRINT DATE: 04-27-2021

FPUWP2000113

Job Name _____ Contractor _____

Job Location _____ Approval _____

Engineer _____ Contractor's P.O. No. _____

Approval _____ Representative _____

Series 3000SS

Double Check Detector Assemblies

Sizes: 2½" – 12" (65 – 300mm)

Features

- Cam-Check Assembly valve provides low head loss
- Short lay length is ideally suited for retrofit installations
- Stainless Steel body is half the weight of competitive designs reducing installation and shipping cost
- Stainless steel construction provides long term corrosion protection and maximum strength
- Single top access cover with two-bolt grooved style coupling for ease of maintenance
- No special tools required for servicing
- Compact construction allows for smaller vaults and enclosures
- Furnished with ⅝" x ¾" bronze meter (gpm or cfm)
- Detects underground leaks and unauthorized water use
- Maybe installed horizontal or vertical "flow up" position (ASSE Only)

Available Models

Suffix:

LG	– less shutoff valves
OSY	– UL/FM outside stem and yoke resilient seated gate valves
OSY FxG	– flanged inlet gate connection and grooved outlet gate connection
OSY GxF	– grooved inlet gate connection and flanged outlet gate connection
OSY GxG	– grooved inlet gate connection and grooved outlet gate connection
CFM	– cubic feet per minute
GPM	– gallons per minute meter

Post indicator plate and operating nut available – consult factory

*The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.

Series 3000SS Double Check Detector Assemblies are designed for use in accordance with water utility non-health hazard containment requirements. It is mandatory to prevent the reverse flow of fire protection system substances, i.e., glycerin wetting agents, stagnant water and water of non-potable quality from being pumped or siphoned into the potable water supply.

Specifications

A Double Check Detector Assembly shall be installed on fire protection systems when connected to a drinking water supply. Degree of hazard present is determined by the local authority having jurisdiction. The main valve body shall be manufactured from 300 Series stainless steel to provide corrosion resistance, 100% lead free* through the waterway. The double check detector assembly consists of two independently operating, spring loaded check valves, two UL, FM, OSY resilient seated gate valves, and bypass assembly. The bypass assembly consists of a meter (cubic ft. or gallons), a double check including shutoff valves and required test cocks. Each cam-check shall be internally loaded and provide a positive drip tight closure against reverse flow. Cam-check includes a stainless steel cam arm and spring, rubber faced disc and a replaceable seat. There shall be no brass or bronze parts used within the cam-check valve assembly. The check valve seats shall be of molded thermoplastic construction. The use of seat screws as a retention method is prohibited. All internal parts shall be accessible through a single cover on the valve assembly. The valve cover shall be held in place through the use of a single grooved style two-bolt coupling. The bypass line shall be hydraulically sized to accurately measure low flow. The bypass line shall consist of a meter, a small diameter double check assembly with test cocks and isolation valves. The bypass line double check valve shall have two independently operating modular poppet check valves, and top mounted test cocks. The assembly shall be an Ames Fire & Waterworks 3000SS.

Materials

All internal metal parts: 300 Series stainless steel, Main valve body: 300 Series stainless steel, Check assembly: Noryl® Flange dimension in accordance with AWWA Class D. Noryl® is a registered trademark of General Electric Company.

⚠ WARNING

It is illegal to use this product in any plumbing system providing water for human consumption, such as drinking or dishwashing, in the United States. Before installing standard material product, consult your local water authority, building and plumbing codes.

AMES FIRE & WATERWORKS

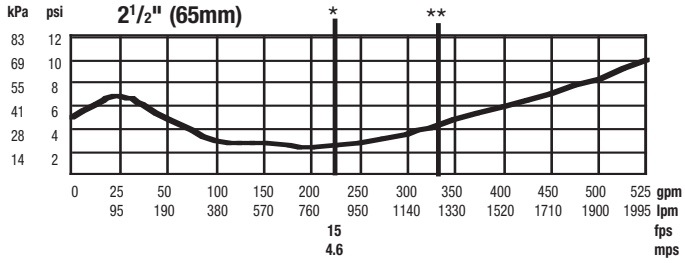
A WATTS Brand

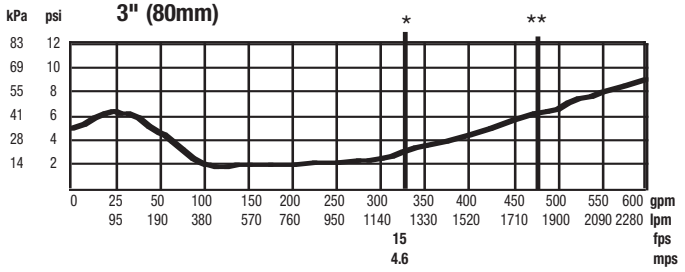
Pressure — Temperature

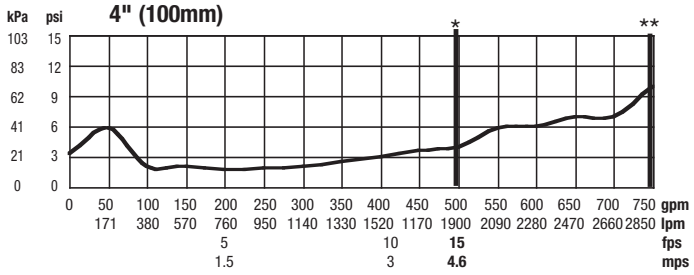
Temperature Range: 33°F – 110°F (0.5°C – 43°C)
Maximum Working Pressure: 175psi (12 bar)

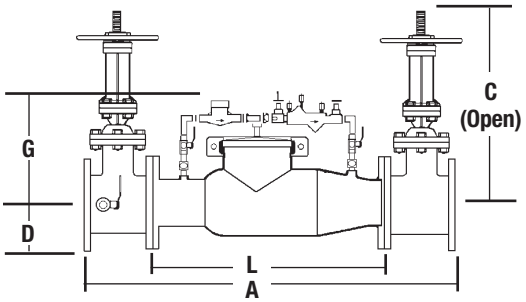
Capacity

Flow curves as tested by Underwriters Laboratory per UL 1469, 1996. * Rated flow **UL Tested







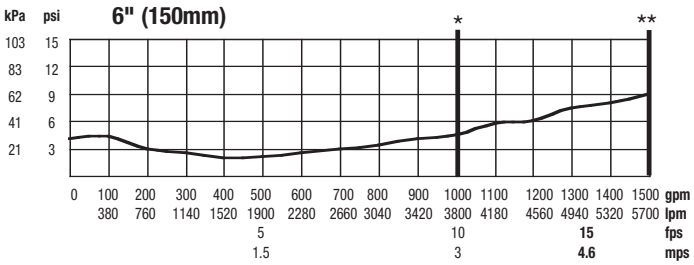


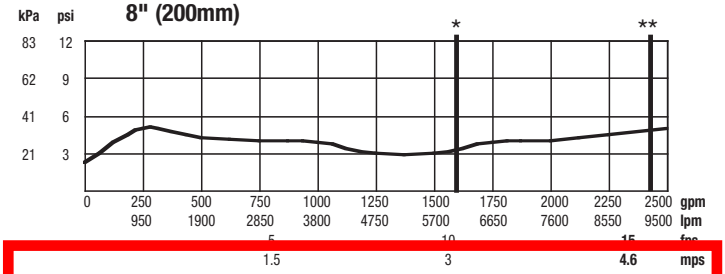
Standards

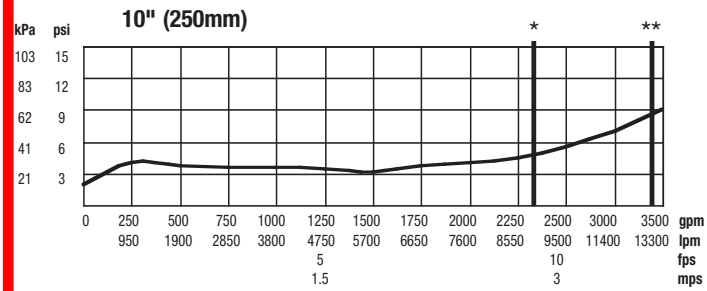
ASSE 1048, AWWA C510-92, CSA B64.5, UL 1469

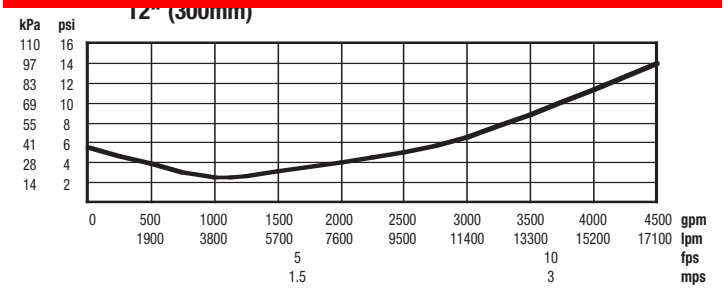
Approvals

UL Classified (OSY only), FM (sizes 2½" – 10", OSY only)









SIZE (DN)		DIMENSIONS												NET WEIGHT		NET WEIGHT	
		A		C (OSY)		D		G		L		P		w/Gates		w/o Gates	
in.	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lb.*	*kg.*	*lb.*	*kg.*
2½	65	37	965	16⅜	416	3½	89	10	250	22	559	12½	318	155	70	68	31
3	80	38	965	18⅞	479	3¾	95	10	250	22	559	13	330	230	104	70	32
4	100	40	1016	22¾	578	4½	114	10	250	22	559	14½	368	240	109	73	33
6	150	48½	1232	30⅛	765	5½	140	15	381	27½	699	15½	394	390	177	120	54
8	200	52½	1334	37¾	959	6¾	171	15	381	29½	749	18½	464	572	259	180	82
10	250	55½	1410	45¾	1162	8	200	15	381	29½	749	19½	495	774	351	190	86
12	300	57½	1461	53⅛	1349	9½	241	15	381	29½	749	21	533	1044	474	220	100

AMES
FIRE & WATERWORKS

A **WATTS** *Brand*

USA: Backflow Tel: (978) 689-6066 • Fax: (978) 975-8350 • AmesFireWater.com
USA: Control Valves Tel: (713) 943-0688 • Fax: (713) 944-9445 • AmesFireWater.com
Canada: Tel: (905) 332-4090 • Fax: (905) 332-7068 • AmesFireWater.ca
Latin America: Tel: (52) 81-1001-8600 • AmesFireWater.com