

ES-A-C500/C500N/C500Z

Colt™ Series C500, C500N, C500Z

Reduced Pressure Detector Assemblies
Size: 2 1/2" - 10" (65 - 250mm)



Features

- Extremely Compact Design
- 70% Lighter than Traditional Design
- 304 (Schedule 40) Stainless Steel Housing & Sleeve
- Groove Flanges Allow Integral Pipe Adjustment
- Patented Link Check Provides Lowest Pressure Loss
- Unmatched Ease of Serviceability
- Replaceable Check Disc Rubber
- Available with Grooved Butterfly Valve Shutoffs
- Bottom Mounted Cast Stainless Steel Relief Valve
- Meets Design to Detect Leakage or Theft of Water from the Fire Sprinkler System

Specifications

The Colt C500, C500N, C500Z Reduced Pressure Detector Assemblies shall consist of two independent Link Check modules, a differential pressure relief valve located between and below the two modules, two grip tight shut-off valves, and required test cocks. Link Check modules and relief valve shall be contained within a sleeve accessible single housing constructed from 304 (Schedule 40) stainless steel pipe with groove and connections. Link Checks shall have reversible stainless steel check and 3" operating pressure differential. The bypass assembly consists of a meter regulating either gallon or cubic measurements, a reduced pressure zone assembly and required test cocks. Assembly shall be Colt C500, C500N, C500Z as manufactured by the Ames Company.

NOTICE

The information contained herein is not intended to replace the full product installation and safety information available on the experience of a trained product installer. You are required to thoroughly read all installation instructions and product safety information before beginning the installation of this product.

WARNING

Do not use this product in any jurisdiction where it is prohibited by law or where it is not approved by the local authority having jurisdiction. Do not use this product in any jurisdiction where it is not approved by the local authority having jurisdiction. Do not use this product in any jurisdiction where it is not approved by the local authority having jurisdiction.

Job Name: _____ Contractor: _____
 Job Location: _____ Approved: _____
 Engineer: _____ Contractor's P.O. No.: _____
 Approver: _____ Representative: _____

Configurations

- Horizontal
- 2" (vertical horizontal)
- 4" (vertical horizontal)

Available Models

Suffix:

- ULFM outside stem and yoke resilient seated gate valve
- ULFM grooved gear operated butterfly valve w/ change handle
- FLG Flanged inlet gate connection and grooved outlet gate connection
- OSY OSY - Flanged inlet gate connection and flanged outlet gate connection
- OSY OSY - Grooved inlet gate connection and grooved outlet gate connection

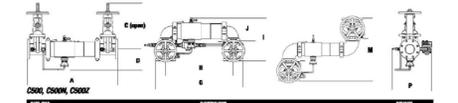
Materials

- Housing & Sleeve: 304 (Schedule 40) Stainless Steel
- Link Check: EPDM, Silicone and Buna N
- Link Check: Nylon™, Stainless Steel
- Check Check: Invertible Silicone or EPDM
- Test Cocks: Bronze Body Nickel Plated
- Fire & Fasteners: 300 Series Stainless Steel
- Spring: Stainless Steel

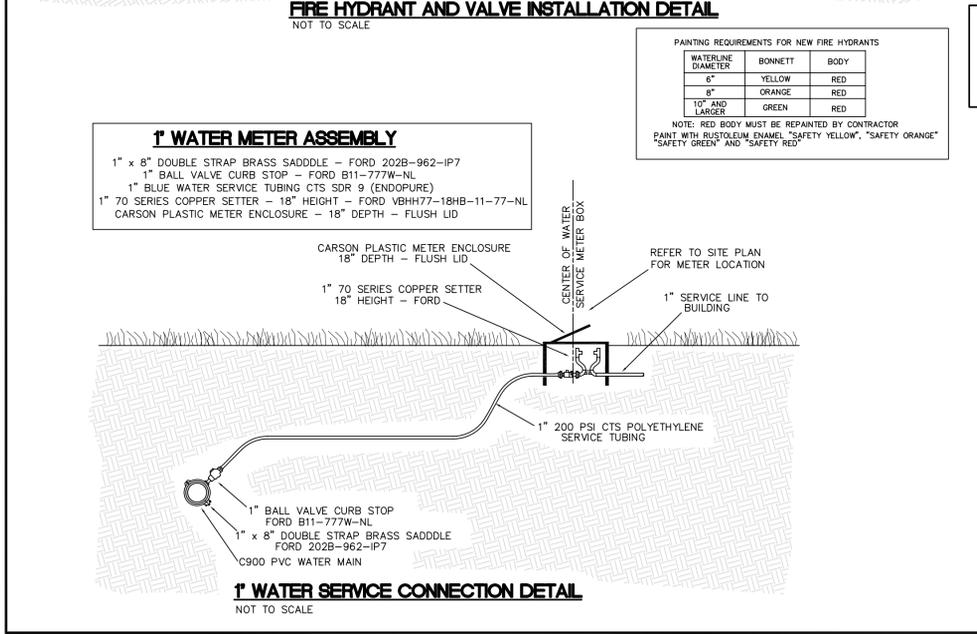
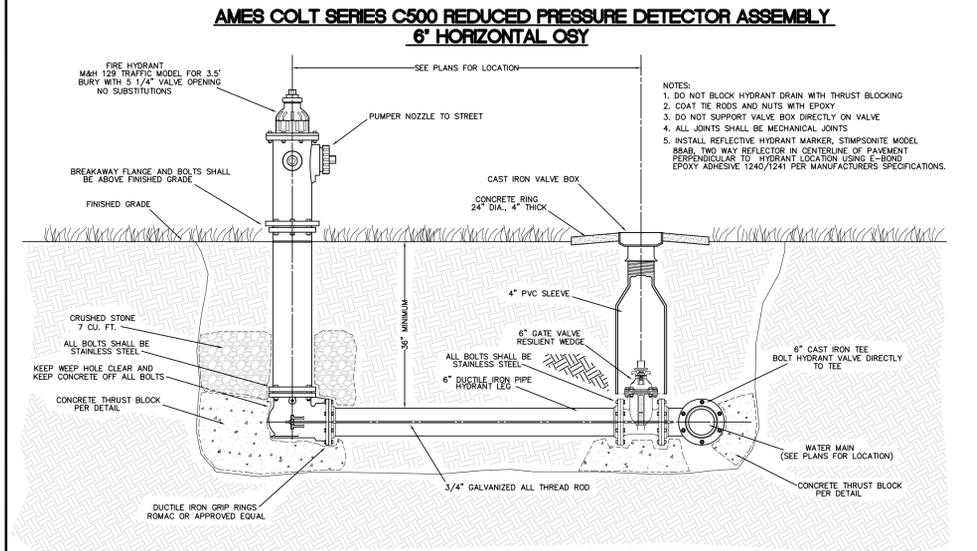
Pressure — Temperature

Temperature Range: 27°F - 147°F (0°C - 60°C)
 Maximum Working Pressure: 175 PSI (12.1 bar)

Dimensions — Weights



SIZE (IN)	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
2 1/2"	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
3"	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
4"	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
6"	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
8"	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
10"	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00



BERUMDA BAY WATERLINE MATERIAL STANDARDS

PART C. WATERLINE MATERIALS

Section C.1. Generally.

All water system and water line materials used shall conform to the specifications set out in this division and any changes shall be submitted in writing to and approved by the Project Engineer.

Section C.2. Pipe standards.

(a) PVC: Except for 2" diameter pipe, PVC pipe shall conform to all requirements of AWWA Specification C900, latest edition, and AWWA C905, latest edition, for sizes larger than 12". PVC pipe and fittings shall be pressure rated at one hundred fifty (150) psi (pounds per square inch) with a standard dimension ratio (SDR) of eighteen (18) for both barrel and bell dimensions. 2" diameter pipe shall be 2" Schedule 80 PVC, iron Pipe Size (IPS). Pipe shall bear the National Sanitation Foundation seal of approval and shall comply with the requirements for Type 1, Grade 1 (PVC 1120) of the ASTM resin Specification D-1784.

(1) Joints. PVC pipe shall have push-on joints, incorporating a rubber ring bell joint which shall be an integral and homogeneous part of the pipe barrel. Solvent-welded joints shall not be used, except for 2" pipe.

(2) Fittings shall be the same as for ductile iron pipe as set forth below.

(b) Ductile Iron: Ductile Iron Pipe shall be furnished in 18 or 20-foot laying lengths, with push-on type joints, except where mechanical joint or pipe installed for on the Drawings. Ductile iron pipe shall conform to the requirements of AWWA C151. Flanged ductile iron pipe shall comply with the requirements of AWWA C115.

(3) Thickness Class of the pipe shall be Pressure Class 350 as required by the pipe size, bedding type and depth. The pipe shall be round and gaged throughout its entire length. Ungaged pipe will not be accepted.

(4) Lining - All pipe shall be single coat cement lined and sealed coated in accordance with AWWA C104.

(5) Joints shall be either mechanical, push on, or flanged conforming to AWWA C111 (ANSI A21.11) or AWWA C115 (ANSI A21.15) as applicable. All flanges and glands for pipes and fittings shall be made of ductile iron.

(6) Fittings shall be manufactured in accordance with AWWA C110 (ANSI A21.10) or AWWA C153 (ANSI A21.53), and shall be ductile iron. The minimum acceptable pressure rating shall be 350 psi. All fittings shall be lined in the same manner as ductile iron pipe.

(7) Coating shall be provided on the exterior of all ductile iron pipe, joints and fittings as required by AWWA C110, C111, C115, C151, or C153 as applicable. All pipes, joints and fittings shall be examined before and after laying to determine if the coating has been damaged. Any damaged areas and all joints shall be coated with approximately 1 mil of a bituminous coating, such as Koppers No. 50 or Intertal No. 45.

(8) Polyethylene Wrap, where indicated on Drawings, shall conform to the requirements of AWWA C105.

(9) Retainer Glands, or other joint restraint devices, shall be cast from high strength ductile iron. Restraint devices shall be rated to perform their restraining function at the full rated pressure of the pipe itself. Devices used on mechanical joint pipe shall be compatible with mechanical joint connectors meeting requirements of AWWA C111. Acceptable types:

(a) For PVC Pipe: Only devices which apply pressure around the full circumference of the pipe. Devices which use radial screws to press pads against only a portion of the pipe's circumference are not acceptable. Acceptable devices include Romac "GripRing" for PVC and Romac 600 Series, and EBAA Iron's 1600 and 2800 series where a bell restraint is appropriate.

(b) For Ductile Iron Pipe: Acceptable devices shall be Romac "GripRing", "RomaGrip" and 600 Series, and EBAA Iron's "Megalug", Series 110"

ld for directional-bored or jack-bored lines.

BERUMDA BAY VALVE AND VALVE BOX STANDARDS

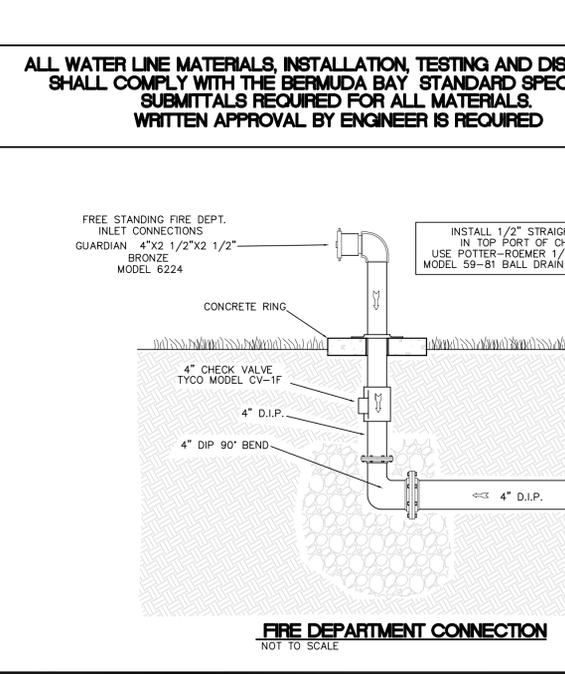
PART C. WATERLINE MATERIALS

Section C.3. Valves.

(a) Resilient wedge gate valves. All resilient wedge gate valves shall conform in all respects to latest AWWA Specification C500 and shall be American Flow Control, Mueller "O" ring and M&H, or approved equal. Resilient wedge gate valves shall be vertical, shall open counterclockwise, and shall be of the non-rising stem type with mechanical joint ends and two (2) inch square operating nut. Resilient wedge valves shall be iron body, double disc, parallel seat, fully bronze mounted. Resilient wedge valves shall be designed for a working pressure of two hundred (200) psi

(b) Valve boxes. Valve boxes shall have the following characteristics:

- Valve boxes shall be of close-grained, gray cast iron, in three (3) pieces consisting of
 - a lower base piece which shall be flanged at the bottom to fit around the stuffing gland and rest on the valve bonnet.
 - an upper part which shall also be flanged on the lower end, of such size so as to telescope over the lower part and the upper end being constructed in the form of a socket to receive the cover.
 - the centerpiece shall be minimum five (5) inches inside diameter.
- The valve box shall be Dewey Brothers, Inc., VBX-TE-3B or approved equal.
- The cover shall have cast on the upper surface in raised letters the word "WATER." Valve boxes shall be painted prior to shipment with a coat of protective asphaltum paint and contain a cement collar.



BERUMDA BAY HYDRANT STANDARDS

PART C. WATERLINE MATERIALS

Section C.4. Hydrants.

(a) Fire hydrants shall be AWWA Specification C502, of the compression type and designed for a minimum working pressure of one hundred fifty (150) psi and a hydrostatic test pressure of three hundred (300) psi with the valve in both open and closed positions.

(b) The hydrant valve opening shall be a minimum of four and one-half (4 1/2) inches. Hydrants shall be equipped with two (2) two and one-half (2 1/2) inch hose nozzles, and one (1) four and one-half (4 1/2) inch pumper nozzle. All nozzles shall have N.P.T. threads. Nozzles shall be bronze with cast iron caps secured thereto with suitable steel chain. A drain outlet shall be provided.

(c) The upper hydrant operating stem within the bonnet shall be sealed and lubricated by means of an oil or grease bath. The operating nut shall be standard pentagon type measuring one and one-half (1 1/2) inches from point to flat. Hydrants shall open counterclockwise.

(d) The hydrant shoe shall be six (6) inches in size, of the mechanical joint type.

(e) Hydrants shall be of the safety type so that if the upper barrel is broken off, the hydrant valve will remain closed and reasonably tight.

(f) All hydrants shall be furnished with barrel and stem extensions as required for the final field location. The nominal minimum bury shall be three (3) feet

(g) Hydrants shall be M & H or approved equivalent.

GENERAL REQUIREMENTS - WATER

- A pre-construction meeting shall be held to discuss progress schedules, to establish procedures for handling shop drawings and other items submitted in accordance with this chapter, and to establish an understanding between the parties as to the project. The developer, Contractor, utility companies and other interested parties may attend.
- Install Sediment Fencing as depicted on Sheet SR prior to land disturbing activities.
- Contractor shall notify Engineer and the Town of Kill Devil Hill Public Services prior to beginning construction of water improvements.
- All abandoned water materials shall be removed entirely and disposed of off site.
- Engineer shall periodically observe construction of water improvements. Contractor shall notify Engineer at least 24 hours before a critical inspection is expected.
- Project engineer shall be responsible for periodic construction inspections, pressure testing, observation of line disinfect ion, observation of flushing and observation of bacteriological sampling collection.
- The existing water supply and fire protection systems shall not be disturbed, except as absolutely necessary, by construction activities. Special care shall be exercised where pipes are being removed and replaced with new lines. The contractor shall carefully plan his/her work in order to avoid contamination and lengthy shutdowns of existing water lines.

BERUMDA BAY TESTING STANDARDS

PART F. TEST AND CLEANUP

Section F.1. Testing and Inspections.

(a) The Engineer shall monitor all testing and inspect all lines as construction progresses. All testing shall be completed before connecting to existing water lines. The Contractor or developer shall notify the Engineer twenty-four (24) hours in advance when he/she will be ready for inspection and testing and shall protect before notifying the Engineer.

(b) After the pipe has been laid and backfilled as specified, all newly laid pipe, or any valve section thereof, shall be subjected to a pressure of not less than one hundred fifty (150) psi. Air or air-water methods of applying pressure are prohibited. The duration of the pressure test shall be at least four (4) hours, for which time the Contractor shall fill the line slowly, expelling air at the high points, and bring it up to required pressure.

(c) The only lines not required to be pressure tested are short (not longer than 25' unless approved by the Engineer) connection sections used to tie new mains into existing lines.

(d) The Engineer shall inspect the entire line and appurtenances for leaks and movement. Any leaks or defects shall be repaired and the test repeated until acceptable.

(e) A leakage test shall be conducted after a pressure test has been satisfactorily completed. The average pressure range shall be one hundred fifty (150) psi and be held for four (4) hours, provided that the Engineer may, at his discretion, allow this time to be reduced to (2) hours. The lines shall be filled as for the pressure test or the Contractor shall continue to maintain the pressure from the test. A source of makeup water shall be provided that can be measured. The test will be made to determine the leakage, or the amount of water required to maintain test pressure.

(f) The allowable leakage, as determined by measuring the amount of makeup water added, is less than the value computed by the formula:

$$Q = \frac{LD\sqrt{P}}{148,000}$$

Where,
 Q = Leakage in gallons per hour
 L = Length of pipe in feet
 D = Nominal pipe diameter in inches
 P = Average test pressure, psi (gauge)

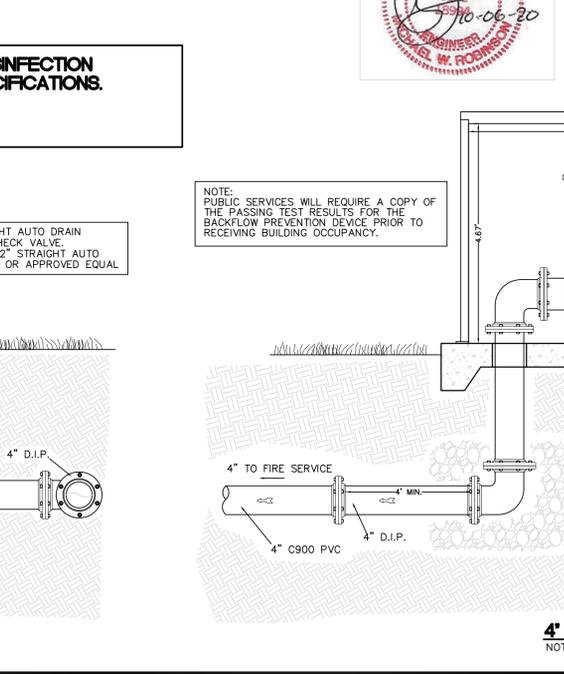
Should any test of pipe disclose leakage greater than that specified above, the Contractor shall locate and repair defective joints until the leakage is within the specified allowance.

(g) The Contractor shall maintain pressure on the line and close each valve progressively, starting from the far end of the system, and vent extreme ends of the line. Allowable pressure drop shall be less than ten (10) psi in five (5) minutes with test pump off.

Section F.2. Adjustment and cleaning.

(a) Flushing. The water shall be flushed by providing taps in sufficient size or number to provide a velocity of two and one-half (2 1/2) feet per second in the line flushed. Hydrants may be used provided the requirements listed below are met

- The Contractor shall submit to the Engineer a procedure schedule outlining the method he proposes to use for flushing water lines. Lines shall be flushed at a maximum of one fourth (1/4) mile intervals.
- Flushing may be done prior to pressure testing or following pressure testing but, in any case, prior to chlorination of the water line.
- Disinfection. All newly-laid lines shall be disinfected. The Contractor shall furnish all necessary equipment and materials and furnish all necessary assistance for effective disinfection of the water lines. Disinfection of waterlines shall comply with Section 4.4.3 (the Continuous Feed Method) of AWWA C651 and 15A NCAC 18C.1003 (Disinfection of Storage Tanks and Distribution Systems).
- After the water line has been pressure tested and flushed, the Contractor shall pump a chlorine solution into the water line in such a manner and at such strength that the residual free chlorine shall be not less than fifty (50) ppm (parts per million) at the end of each line tested.
- Using high test calcium hypochlorite, or approved equal, the Contractor shall prepare a ten thousand (10,000) ppm solution in water and pump at a constant rate into the water line while bleeding off the water at the extreme end. The bleed rate will determine the feed rate of the chlorine in order to arrive at fifty (50) ppm solution in the water line.
- Liquid chlorine may be applied to the water line much the same way as the hypochlorite solution. The liquid must be mixed with water before pumping into the water line. The rate of application will have to be adjusted for the degree of concentration of the liquid chlorine.
- Chlorine gas shall not be used to chlorinate the water line.
- The chlorinating agent shall be applied at the supply end of the line through a corporation valve. The water for injecting the chlorine into the new line shall be taken from an isolated container and injected by utilizing a pressure pump. Care shall be exercised to prevent any of the chlorine solution from entering an existing water line.
- The chlorinated water shall be retained in the new water line for a period of twenty-four (24) hours with a chlorine residual of 10 ppm. While the chlorine solution is in the line, the Contractor shall operate valves in the chlorinated section to ensure the complete disinfection thereof.
- Chlorinated water shall be flushed from the line at the end of the retention time so that the entire line is clear of any residual chlorine. Chlorinated water shall be wasted in accordance with C651 of the AWWA standards. A sample will be taken from the line twenty (24) hours AFTER the line is flushed. Samples shall be analyzed by a State Certified lab. The number of bacteriological samples and locations will be determined by the Engineer but no less than one every one thousand two hundred (1,200) feet. Engineer shall monitor all sampling. If the water does not pass the bacteriological test, the test procedure outlined above shall be repeated until the quality of the water is substantially the same as that being delivered from the existing distribution system.
- Pressure test and chlorinating report forms. All information relative to pressure tests and chlorinating procedures shall be witnessed and verified in writing by the project engineer and the results shall be reported on standard forms. These reports shall be submitted immediately upon completion of such tests and disinfection.



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DETAIL SHEET 1

NOT RELEASED FOR CONSTRUCTION

REVISIONS

NO.	DATE	DESCRIPTION
1	10-06-20	TECH 2 - REVISIONS

PROJECT: BERUMDA BAY - SOMERSET

LOCATION: NORTH CAROLINA

COUNTY: DARE COUNTY

TOWN: KILL DEVIL HILLS

PROJECT: BUILDING 201 AND 202 - KDH REVIEW PLAN

DATE: 10-06-20 SCALE: N.T.S.
 DESIGNED: MWR DRAWN: MWR
 SHEET: S9 OF 11
 CAD FILE: 382500B1.DWG
 PROJECT NO: 3825