DATE 13 APR 2000

PWSID D467047

WELL # 220

WELL NAME Courthouse Bay 220

BLDG. BB220

CODE Ground

AVAILABILITY Permanent

LOCATION Horn Road CH13(2)

NC 172

LATITUDE 34° 35 min 15.473N

LONGITUDE 077° 21 34.964W

WELL DIAMETER 8"

WELL DEPTH 150'

SCREEN INTERVAL 55' to 70'

85' to 95' 130' to 145'

YIELD 172 gpm

STATIC LEVEL 33'

PUMPING LEVEL 41'

PUMP TYPE Verticle turbine

MOTOR HP 10

INTAKE DEPTH 51'

DESIGN CAPACITY 150 gpm

ACTUAL GPM 100 gpm

SIZE OF CONCRETE SLAB

16x16

HEIGHT OF CASING 55'

1ST SCREEN 55 - 75.6 FT

LENGTH OF MOTOR SHAFT

~~AUSTIN~~

6 X 4 FLANGE

9" LONG

DATE 13 APR 2000

PWSID 0467047

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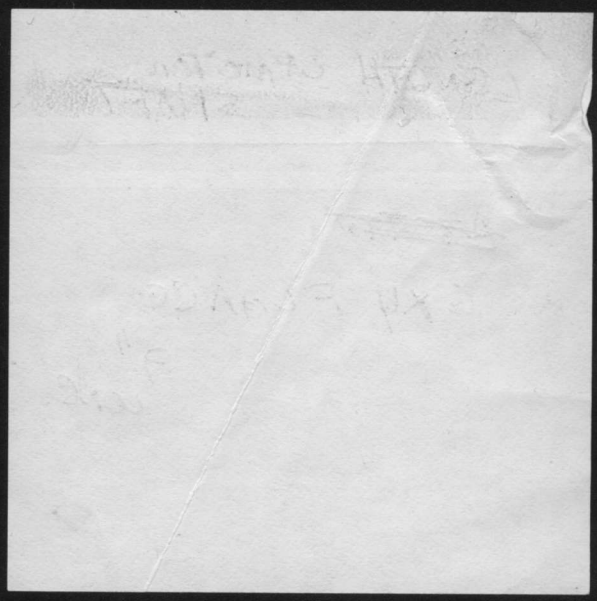


WELL # 220

DATE	LENGTH OF AIR LINE	STATIC LEVEL	PUMPING LEVEL	DRAW DOWN	DISCHARGE PRESSURE	CAP. PER FOOT OF DRAW DOWN 2 1/2" MS	TOTAL CAP.
9/14/81	75'	36'	40'	4'	22 LBS	1'	
			45'	9'	19 LBS	111	
			47'	11'	16 LBS	130	
			49'	13'	13 LBS	143	

REMARKS: pump is holding at line pressure 20 LBS the pressure can't be dropped ~~any~~ lbs

DEPTH OF WELL:
AIRLINE
ELEVATION: + -
DATE INSTALLED:

Well L20 4-16-86

A/L	S-L	P-L	D-D	Psi	GPM	Time
50'	20'	24	4	40	104	0830
		26	6	36	128	0845
		28	8	30	180	0900
test set →		30	10	27	201	0915
				25	226	0930

Gould Pump installed 4-16-86
S/N ORT.86.077
Model 8JLO .4
Date 3-86

Charles R. Underwood, Inc.
Pete Lowe
Camp LeJeune, Well BB-220

Goulds Turbine Pump Selection ver: 6.042
06/18/02

PUMP DATA SHEET
Goulds Turbine 60 Hz

Selection file: (untitled)
Catalog: TURB60.MPC v 1.6.1

Curve: E3140

Design Point: Flow: 150 US gpm
Head: 80 ft

Pump: **TURBINE - 1800** **Size: 7CLC (4 stages)**
Speed: 1770 rpm Dia: 4.625 in

Limits: Temperature: --- °F Sphere size: 0.43 in
Pressure: 415 psi_g Power: --- bhp

Specific Speed: Ns: 2183 Nss: ---

Vertical Turbine: Bowl Size: 7.13 in Max Lateral: 0.5 in
Thrust K Factor: 3.5

Motor: 5 hp Speed: 1800 Frame: 184T
NEMA Standard ODP Enclosure
sized for Max Power on Design Curve

Fluid: Water Temperature: 60 °F
SG: 1
Viscosity: 1.122 cP
Vapor pressure: 0.2568 psi_a
Atm pressure: 14.7 psi_a

NPSHa: --- ft

Piping: System: ---
Suction: --- in
Discharge: --- in

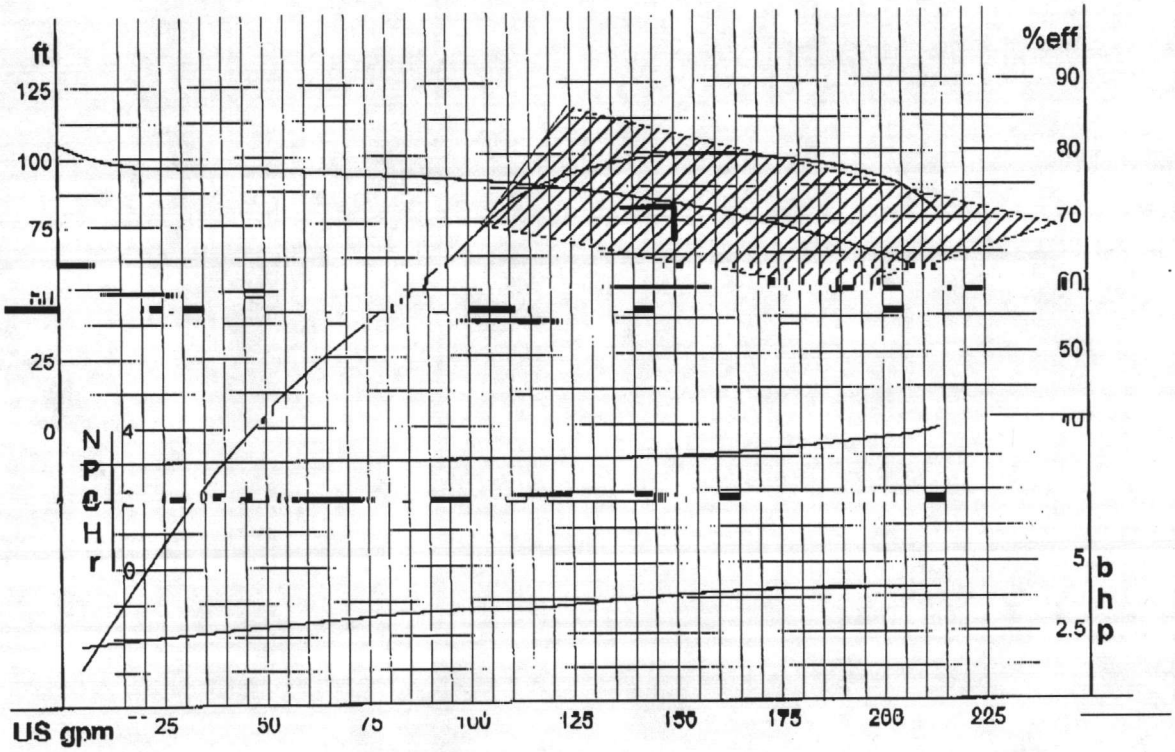
Ordered 6-26-02
for well BB220

Suction Size-5" Discharge Sizes-5",6"

---- Data Point ----
Flow: 150 US gpm
Head: 81.2 ft
Eff: 79.4%
Power: 3.86 bhp
NPSH: 3.05 ft

-- Shutoff Curve --
Shutoff Head: 105 ft
Shutoff dP: 45.6 psi
Min Flow: - US gpm
BEP: 79.8% eff
@ 161 US gpm
NOL Pwr: 4.1 bhp
@ 213 US gpm

-- Max Curve --
Max Pwr: 5.71 bhp
@ 240 US gpm



--- PERFORMANCE EVALUATION ---

Flow US gpm	Speed rpm	Head ft	Pump %eff	Power bhp	NPSHr ft	Motor %eff	Motor kW	Hrs/yr	Cost /kWh
150	1770	81.2	79.4	3.86	3.05	86.2	3.34	1500	0.08
120	1770	88.1	75.8	3.52	3	86.3	3.04	3000	0.08
90	1770	91.8	61.7	3.35	3	86.3	2.9	1000	0.06

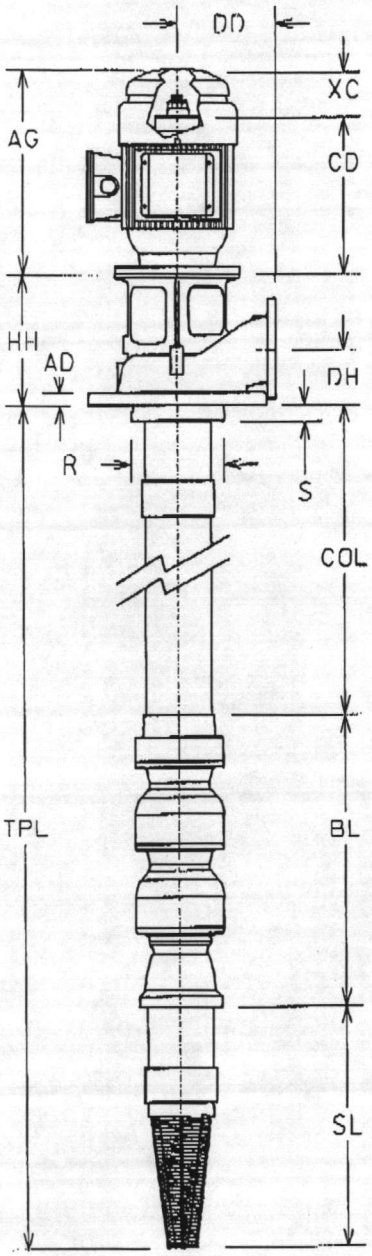
Total Annual Power Consumption: 17,039 kWh
Annual Operating Cost: $1,305

Prepared for Mr. Danny Hill

Charles R. Underwood, Inc.
Pete Lowe
Camp LeJeune, Well BB-220

HYDRAULIC ANALYSIS

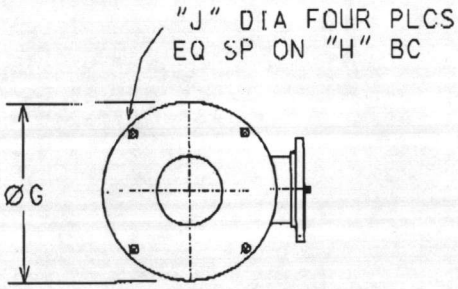
DWT-CATM
4 Stage 4x7CLC



AD:	0.75
AG:	21.25
BD:	10.0
BL:	33.75
CAN:	N/A
CD:	17.56
CL:	N/A
COL:	540.00
DD:	9.00
DH:	5.00
G:	16.50
H:	14.00
HH:	13.50
J:	0.63
R:	7.50
S:	1.81
SL:	133.00
TPL:	706.75
UG:	N/A
V:	0.75
W:	
X:	
XC:	3.34
Y:	
Z:	

Pump Data

Size:	7CLC
Stages:	4
Impellers:	Bronze
Bowl:	Cast Iron
Bearing:	Rubber
Strainer:	Cone
LineShaft Type:	Open
Column:	Steel
Column:	4" Threaded
Bearing Spacing:	10 feet
Section Length:	10 feet
Head:	A:Cast
Flange (Disch.):	4" 125#
Inlet:	
Coupling:	416SS
Seal:	Packing
LineShaft:	416SS 1"
SubBase:	None



DISC HEAD

Hydraulic Data

Flow (gpm):	150
Pump Head (ft):	44.6
TDH (ft):	81.2
Speed (rpm):	1770
Fluid:	Water
Temperature (F):	60
Viscosity:	1.122
Spec.Grav:	1

Miscellaneous

Thrust At Design:	409
Thrust At Shutoff:	493
Min Water Level(in):	420

Weight

Pump:	1039
Motor:	170
Total:	1209

Motor Data

Model:	B400
Make:	USEM
HP:	7.5
RPM:	1800
Type:	AUE
Efficiency:	90.2
Frame:	213TP
Ratchet:	SRC

Version: 2.26P

Prepared for Mr. Danny Hill

Date: 06-18-2002

Charles R. Underwood, Inc.
Pete Lowe
Camp LeJeune, Well BB-220

HYDRAULIC ANALYSIS

DWT-CATM
4 Stage 4x7CLC

Overall Pump Parameters

Size and Model:	7CLC	Pump Operating Speed, RPM:	1770
Capacity, GPM:	150	Total Dynamic Head, Ft.:	81.2
Total Pump Length, In.:	706.8	Impeller Trim, In.:	4.6
Pump Type:	Well	Head Type:	A:Cast
Pump K-Factor:	3.5	Number of Stages:	4
		Pumping Level, In.:	420.0

LineShaft-Related Data

Shaft Diameter, In.:	1	Shaft Limit, HP:	71
Shaft Material:	416SS	Matl Correction Fact:	1.18
LineShaft Length, In.:	540.00	Shaft Elongation, w/o Adder:	0.01
		LineShaft Type:	Open

Bowl Data

Total Bowl Length, In.:	33.75	Bowl Diameter, In.:	7.125
		Bowl Shaft Limit, HP:	125

Column Data

Column Diameter, In.:	4	Column Load, Lb.:	6.4
Wall Thickness, In:	0.237 inch	Column Elongation, In.:	0.00

HorsePower Data

Shaft Friction Loss, Hp.:	0.24	Thrust Load Loss, Hp.:	0.05
Bowl HP At Design, Hp.:	3.86	Motor HorsePower, Hp.:	7.5

Head Data

Column Loss, Ft.:	1.39	Discharge Head Loss, Ft.:	0.17
		Total Loss, Ft.:	1.56

Other Data

Hydraulic Thrust, Lb.:	284.2	Thrust at Design, Lb.:	409.0
Thrust at Shutoff, Lb.:	492.5	Design NPSH, Ft.:	3.1
Max Lateral, In.:	0.5	Min. Lateral Required, In.:	0.14
		Actual Head above Grade, Ft.:	44.64

Efficiency Data (Efficiencies estimated not guaranteed)

Bowl Efficiency:	79.40	Pump Efficiency:	72.38
Motor Efficiency:	90.20	Overall Efficiency:	65.29
		KWH/1000 gallons:	0.39

Component Weights

Bowl Weight, Lbs.:	169	Column Weight,Lbs.:	720
Head Weight, Lbs.:	150	Can Weight,Lbs.:	0
Motor Weight, Lbs.:	170	Total Pump Weight,Lbs.:	1209

Version: 2.26P Prepared for Mr. Danny Hill Date: 06-18-2002

Phone: 919-775-2463
Fax: 919-708-7232 THE SOURCE FOR PUMP SOLUTIONS

Charles Underwood, Inc.

Fax

To:	Mr. Danny Hill	**From:**	N. F. "Pete" Lowe
Fax	1-910-451-7195	**Date:**	June 18, 2002
Phone:			Five
Q	Well BB-220	**CC:**	

☐ **Urgent** ☐ **For Review** ☐ **Please Comment X Please Reply** ☐ **Please Recycle**

Comments: Following find price and data for revised pump for Well BB-220

Hard copy to follow via mail.

Thanks!!!!!!!!!!!!!!!!!!!!!!!!!!!!!! "Pete"

WELL NUMBER	BB-20	BY	STEVENSON/SACIAS	DATE	3-10-03	
AIR LINE	STATIC LEVEL	PUMPING LEVEL	DRAIN DOWN	DISCHARGE PRESSURE	GPM	START TIME
50	33	40	7	20	100	

REMARKS D/H 28

MANUFACTURER	STAGE	S.N.	TOTAL HEAD	SIZE

WELL NUMBER BB-220 BY Stevenson & Peterson DATE 1-28-99

AIR LINE	STATIC LEVEL	PUMPING LEVEL	DRAIN DOWN	DISCHARGE PRESSURE	GPM	START TIME
51	34	43	9	45	100	00

REMARKS

D/H-31 PSI

MANUFACTURER	STAGE	S.N.	TOTAL HEAD	SIZE

WELL NUMBER 220		BY Stevenson & King			DATE 4-29-94	
AIR LINE	STATIC LEVEL	PUMPING LEVEL	DRAIN DOWN	DISCHARGE PRESSURE	GPM	START TIME
51	33	41	8	25	~100	

REMARKS D/H 33 PSI

MANUFACTURER	STAGE	S.N.	TOTAL HEAD	SIZE

220 12-9-91

A/L	S/L	P/L	D/D	PSI	GPM
51	32	41	9	30	100
		42	10	25	130
		45	13	20	154
				15	172

throttled @ 25 PSI

Dead head 35

WELL NUMBER BB 220

DATE 8-24-90

AIR LINE	STATIC LEVEL	PUMPING LEVEL	DRAIN DOWN	DISCHARGE PRESSURE	GPM	START TIME
51	33	41	8	30	104	40
left to tat ⇒		46	13	25	119	50

REMARKS

34# dead head

MANUFACTURER	STAGE	S.N.	TOTAL HEAD	SIZE

North Carolina Department of Environment, Health, and Natural Resources
Division of Environmental Health, Public Water Supply Section

SOURCE INFORMATION
GROUND WATER

Date Form Completed: M M D D Y Y: 01 25 95

PWSID: 0467047

Owner Assigned Source Code: 220

Well Name (If purchase, name of system): COURTHOUSE BAY 220

Code: G (G=Ground, W=Purchase/G, Y=G w/direct influence, Z=W w/direct influence)

If Purchase, seller ID#:

Source Begin Date (M M Y Y):

Source exempt—SWTR? (Y/N):

Direct Influence Date (M M D D Y Y):

Availability: P (P=Permanent, E=Emergency, S=Seasonal, I=Interim, O=Other)

Location of well within the system (If purchase, location of master meter): HORN ROAD CHB @ WC 172

Latitude (N) Deg. Min. Sec.: 34 35 14 N

Longitude (W) Deg. Min. Sec.: 077 21 36 W

How Determined: O (G=GPS, M=Map, S=Surveyed)

GPS Data: Q# or DOP #

No. of Sats. Locked on: 5

(If purchase, use seller's primary source lat/long)

Vulnerable (VOCs) (Y/N):

Assessment Date (M M D D Y Y):

ENTRY POINT INFORMATION

Use Code: C (C=Ground/Permanent, D=Ground/non-permanent)

Availability: P (P=Year-round, S=Seasonal, E=Emergency, I=Interim, O=Other)

Owner Assigned Entry Point Code: 600

Entry Point Name: ~~BB 220~~ MCB COURTHOUSE BAY [illegible]

Location:

Well Site: Owned or controlled? Y (Y,N) Control Area (100' radius)? N (Y,N) If no, explain:

Sources of pollution/distance: 75' to Road

Surface water within 200'? N (Y/N) If yes, actual distance feet If yes, bact. samples collected? (Y,N)

Adequate slope? Y (Y,N) Flooding? ~~N~~ (Y,N) Maintenance: OK

Well House: Free of stored materials? Y (Y,N) Properly drained? Y (Y,N) Locked? Y (Y,N)

Condition of house: OK Type of freeze protection: Elec Heat

Well: Diameter: 8" Type: GRAVEL PACKED Yield (gpm): 172 ~~[illegible]~~ Properly sealed? Y (Y,N)

Properly vented? N (Y,N) Casing depth: 55 ft. (If unknown, put 'UNK') Well depth: 150 Meter available? NO (Y,N)

Concrete slab adequate? (Y,N) If no, explain: Size: ~~7BX6~~

Size of blow-off: 4" Sample tap: Before treatment? Y (Y,N) After treatment? (Y,N)

Pumps: Capacity: GPM: 150 ~~[illegible]~~ HP: 10 Pump intake depth: 51 Auxiliary Power? N (Y,N)

Type pump: VERTICAL TURBINE Height above floor (pump/casing): 12" /

Storage at well site: Elev: Hydro: Ground:

If hydroautomatic, air volume control? (Y,N) Safety valves? (Y,N) Coded? (Y,N)

High service pumps: 1. gpm hp 2. gpm hp 3. gpm hp Auxiliary Power? (Y,N)

Is the water treated at this well? N (Y/N) If yes, complete back of form.

If other wells are treated here, which ones? If treated elsewhere, where? CHB PLANT

If purchase, retreat? (Y/N) If yes, complete back of form.

① No vent
② Replace sample tap
③ Seal pump pedestal

BR 220 4-17-86

A-L	S-L	P-L	D-D	PSi	GPm	Time
51'	29	41	12	30	100	0845
		44	15	26	125	0900
		46	19	23	140	0915

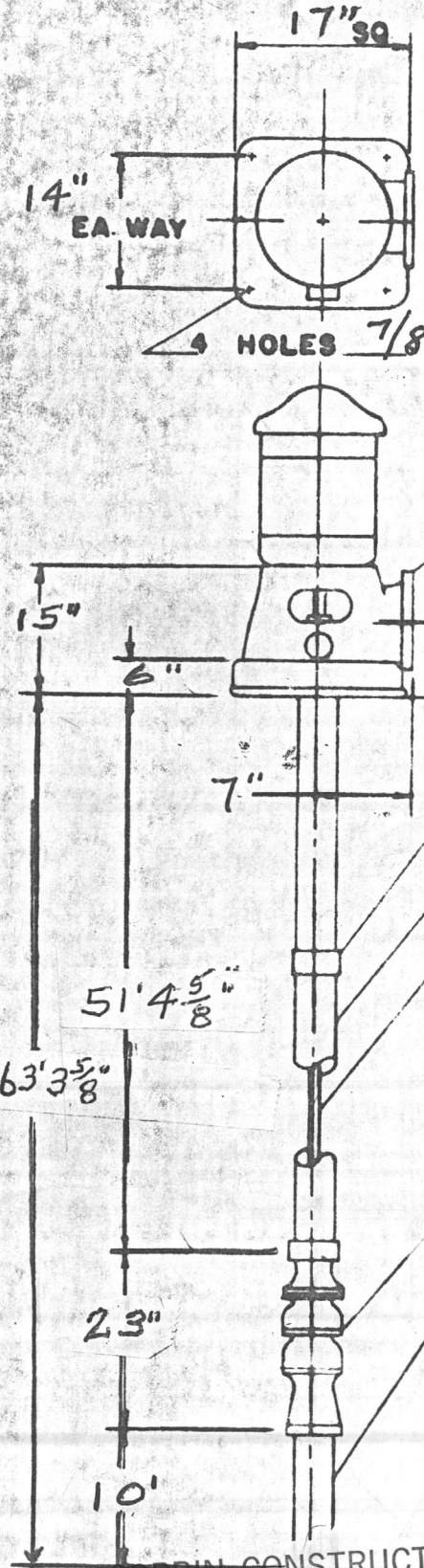
used altitude gage

BB 220
10-24-85

A-L	S-L	P-L	-	D-D	·	PSI	GPM	Time
51'	35	44		19		20	104	15

VERTI-LINE DEEP WELL PUMP

OPEN LINESHAFT CONSTRUCTION



10AC6 DISCHARGE HEAD

7 1/2 H.P. V.H.S. ELECTRIC MOTOR 230 460 V.

1740 R.P.M. 60 CYCLE 3 PHASE

WITH N.R.R., 1.15 SF

3 STAGE 8EDM BOWLS

1500 G.P.M. 78 FT. PER CURVE 807.1

DISCHARGE FLANGE 6" 125 LB. A.S.A.

6" PIPE COUPLING O.D. 7.39"

W/ BEARING RETAINER ASSEMBLY

6" GALV. COLUMN PIPE IN 10' LGTHS.

1" LINESHAFT IN 10' LGTHS.

TOTAL OVERALL COLUMN LGTH 63'3 5/8"

MAX. O.D. BOWL ASSEMBLY 7 1/2"

6" GALV. SUCTION PIPE IN 10' LGTHS.

CAROLINA WELL & PUMP CO.

LAYNE & BOWLER PUMP CO.

PROPOSAL FOR CAMP LEJUENE
COURTHOUSE WELL NO. 1

SPEC. WATER WELL ITEM PUMP 4-14-75 R4 6-10-74 1-20-75 R2

CERTIFIED

BY WHS L & B. NO. 4-4-75 R3

CORBIN CONSTRUCTION CO.
P. O. BOX 5004
NEW RIVER PLAZA STATION
JACKSONVILLE, N. C. 28540

DA 3415-A

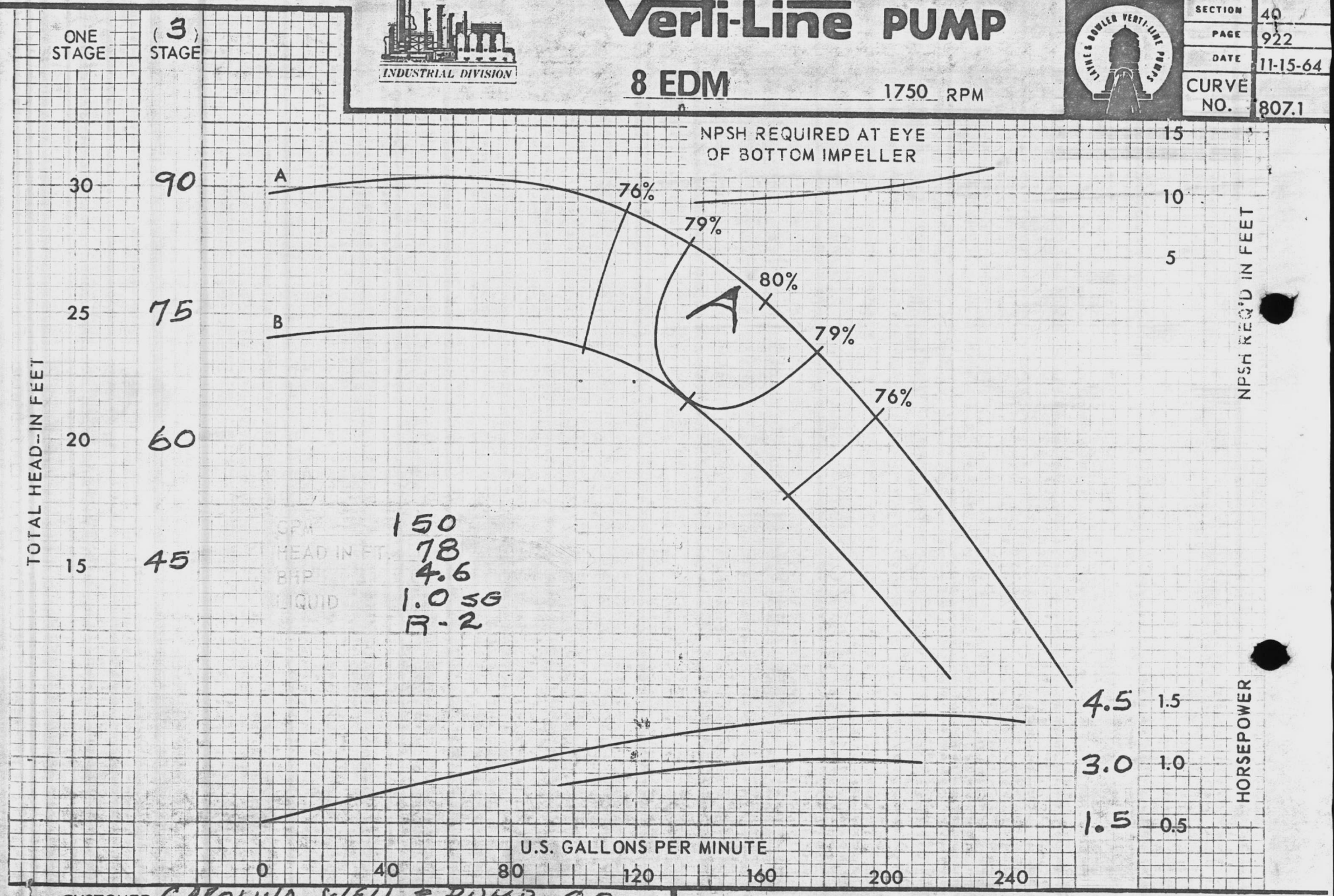
4/10/75

Verti-Line PUMP

INDUSTRIAL DIVISION

8 EDM 1750 RPM

SECTION	40
PAGE	922
DATE	11-15-64
CURVE NO.	807.1



CUSTOMER CAROLINA WELL & PUMP CO.
ADDRESS SANFORD, N.C.
JOB CAMP LEJUENE, COURTHOUSE
PROPOSAL # WELL PUMP NO. 1

LAYNE & BOWLER PUMP CO.

CITY OF INDUSTRY, CALIFORNIA – LOS ANGELES AREA

GOULD PUMP INSTALLED
4-16-86

S/N ORT.86.077

MODEL 3196 .4

CORBIN CONSTRUCTION COMPANY, INC.

GENERAL CONTRACTORS

POST OFFICE BOX 5004

JACKSONVILLE, NORTH CAROLINA 28540

ROUTING ORDR.	INT
1 80	7
2 520	
3 510	
4	
5	
ORIG	INT

July 30, 1974

Resident Officer in Charge of Construction
MCB, Building 1005
Camp Lejeune, N. C. 28542

Re: Contract N62470-74-C-1319
Additional Wells, Courthouse Bay
Camp Lejeune, N. C. 28542

Gentlemen:

In accordance with section 7B.3.7 of the contract specifications, we are making our recommendations for the two permanent wells. Both test wells were drilled to the 205-foot depth and the results of the drillers logs, electric logs and water analysis have been forwarded to your office for your own reference. From the information we have accumulated it is recommended that the appropriate depth of both wells should be 160 feet; each to have 50 feet of 18" pit casing and to be gravel-packed the entire bored depth.

BB 220 Well No. 1 should have a 20-foot section of 50-slot stainless steel screen set at the 55-75 foot depth; a 5-foot screen at the 93-98 foot depth; and a 15-foot screen set at the 130-145 foot depth. These settings are expected to produce 150 GPM, 50 GPM and 100 GPM respectively. The estimated quantity of water from the completed well is 300 GPM.

BB 221 Well No. 2 should have a 15-foot section of 50-slot stainless steel screen set at the 65-80 foot depth and a 20-foot section of screen set at the 135-155 foot depth. These settings are expected to produce 150 GPM and 125 GPM respectively. The estimated quantity of water from this completed well is 275 GPM.

We will appreciate you advising us of your decision as soon as possible in order for us to proceed with the permanent wells.

Yours very truly,

CORBIN CONSTRUCTION COMPANY, INC.

W. H. Myers

W. H. Myers

WHM/bm

... REQUIREMENTS OF CONTRACT N62470-74-C-1319
APPROVAL OF MATERIALS AND/OR EQUIPMENT INDICATES COMPLIANCE WITH SPECIFICATION REQUIREMENTS ONLY — THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING PROPER PHYSICAL DIMENSIONS & WEIGHTS, COORDINATION OF TRADES, ETC., AS REQUIRED.

A. W. WALTON, JR.
RADM, CEC, USN
COMLANTNAVFACENGCOM

Date 8/19/74

Wesley Lee Boren and Associates
Consulting Engineers

...d by [signature] 8/19/74

CORBIN CONSTRUCTION COMPANY, INC.
GENERAL CONTRACTORS
POST OFFICE BOX 5004
JACKSONVILLE, NORTH CAROLINA 28540

July 12, 1974

ROUTING ORDE:		INT
1	80	7
2	570	
3		
4		
5		
	FILE	INT

Resident Officer in Charge of Construction
MCB, Building 1005
Camp Lejeune, N. C. 28542

Re: Contract N62470-74-C-1319
Additional Water Wells
Camp Lejeune, N. C.

Gentlemen:

We are enclosing five copies each of Layne and Bowler Bulletin 100 Drawing HA-3415-A and test curve, page 40, covering the water lubricated pumps we propose to use on subject project. Please return two(2) copies "Approved" or "Approved as noted" for our files and reference.

We are also enclosing five copies of the following data for your use in determining the placement of the screens at each well.

Test Well No. 1 - Electric Log(with drillers log superimposed).
Test Well No. 2 - Electric Log(with drillers log superimposed).

In addition we offer the following laboratory analysis of the water samples taken by direction of your representative.

	Well No. 1		Well No. 2	
Sample No.	1	2	1	2
Depth	130-145	63-73	132-142	63-73
Total Hardness	198	104	213	128
Iron	0.9	0.5	0.5	0.3
P. H.	7.9	7.9	7.9	8.4
Total Disolved solids	241	166	247	182

Please advise us as soon as possible of your decision so we may proceed with this project.

Yours very truly,

CORBIN CONSTRUCTION COMPANY, INC.

W. H. Myers

WHM/bm
Enc.

4-014, 522

Bulletin No. 18

1,744,059

OFFICE OF THE
OFFICER IN CHARGE OF CONSTRUCTION
CAMP LEJEUNE, NORTH CAROLINA

APPROVED

SUBJECT TO CONTRACT REQUIREMENTS

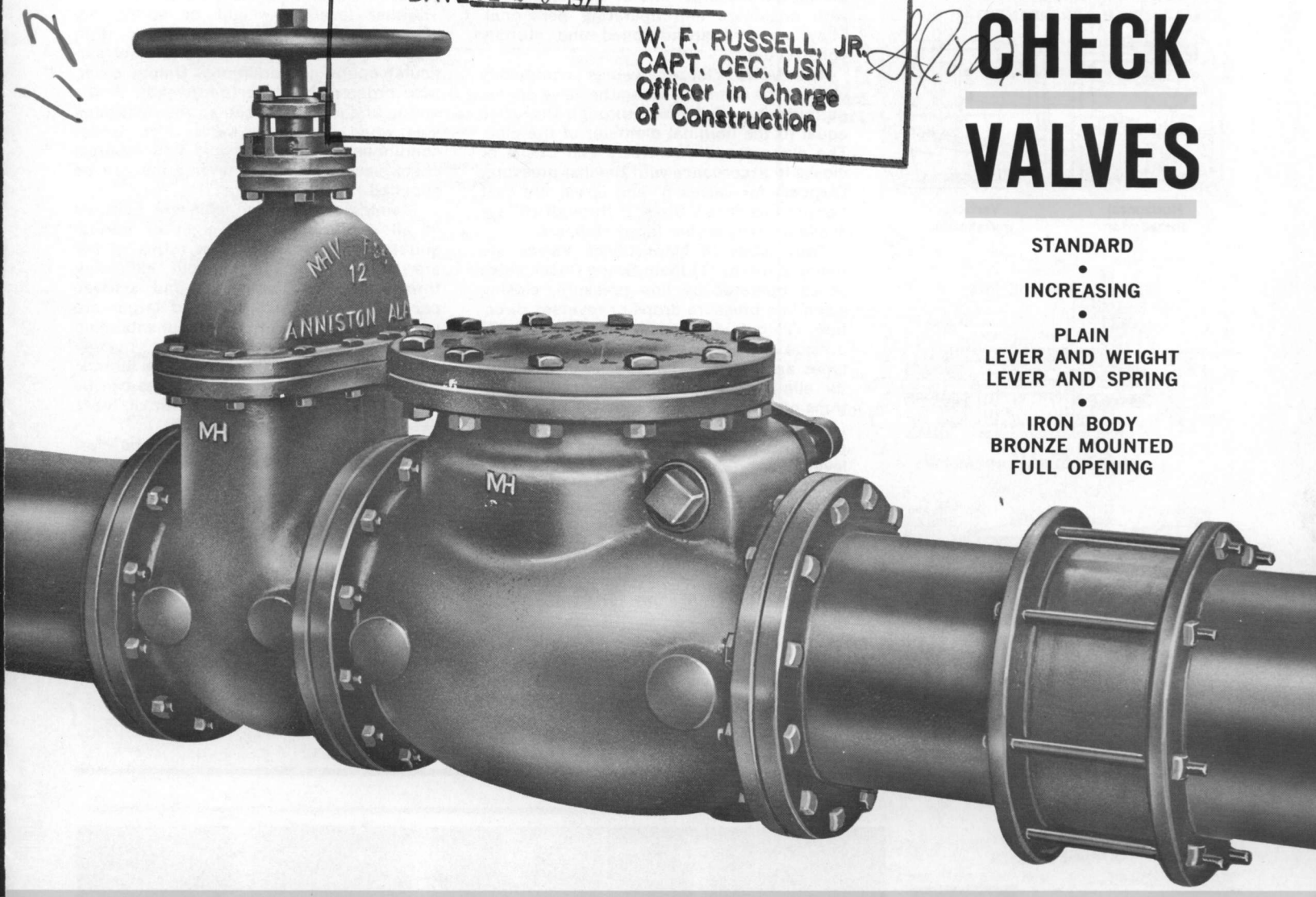
CONTRACT ~~NBy~~ N62470-71-C-0507 SPEC. NO. 05-71-0507

DATE JUL 2 0 1971

W. F. RUSSELL, JR.
CAPT. CEC. USN
Officer in Charge
of Construction

SWING CHECK VALVES

STANDARD
•
INCREASING
•
PLAIN
LEVER AND WEIGHT
LEVER AND SPRING
•
IRON BODY
BRONZE MOUNTED
FULL OPENING



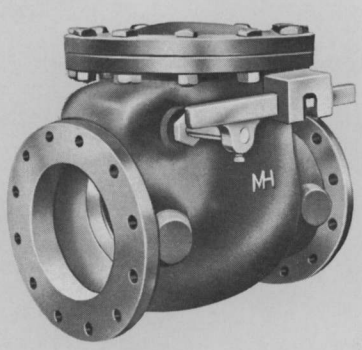


Figure 50—Flanged end with Lever and Weight.

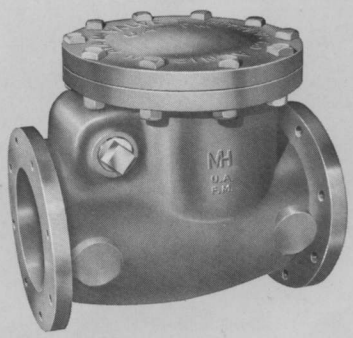


Figure 60—Flanged end, Plain.

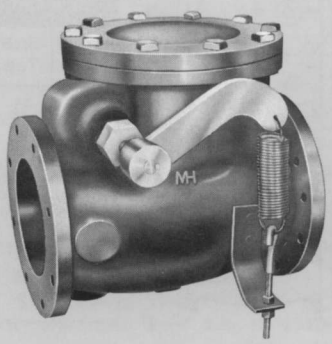


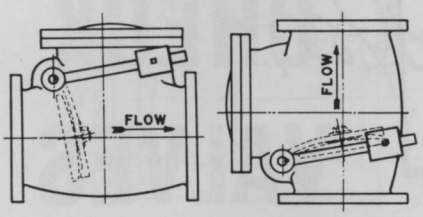
Figure 60-SL—Flanged end with Lever and Spring.

M & H VALVE and FITTINGS • Anniston, Alabama 36201

DIVISION OF DRESSER INDUSTRIES

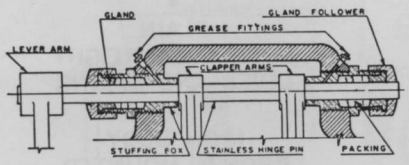
FULL OPENING—HIGH FLOW EFFICIENCY

LEVER ARRANGEMENT

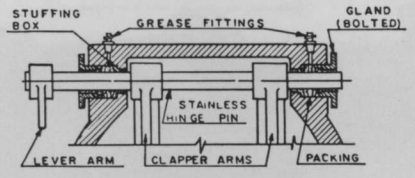


Horizontal Installation — Vertical Installation

EXTENDED HINGE PIN



Sizes 4″—14″



Sizes 16″—24″

M&H Swing Check Valves are an important product in the M&H line of valves, popular with engineers and operating personnel. They are well proportioned and sturdily constructed.

The valve clapper swings completely clear of the waterway when the valve opens, permitting a "full flow" through the valve equal to the nominal diameter of the pipe. The clapper operates freely and opens or closes in accordance with the line pressure. Clappers for valves 5″ and larger are cast iron, bronze-faced. Sizes 2″ through 16″ are available with rubber-faced clappers.

Four types of M&H Check Valves are manufactured: (1) Plain Swing Check Valve which operates by line pressure, closing when line pressure drops or reverses direction, (2) outside lever and weight and (3) outside spring and lever. (The latter two types are desirable for quicker closing and for elimination of slamming under conditions of rapid flow reversal.) The other type (4) is the Increasing, which is available plain or with lever and weight or spring and lever.

Either lever-and-weight or outside spring-and-lever designs should be used for vertical installation. Lever-and-weight type check valves for horizontal installation require the lever arm parallel to the run of the pipe and the weight on the downstream side of the clapper for quick and quiet closing. The arm can be reversed 180 degrees to assist in opening when minimum pressures are encountered. For vertical installation, the lever arm is moved to a position parallel to the clapper seat and extending towards the bottom of the body, to assist in closing. (See sketch at left.)

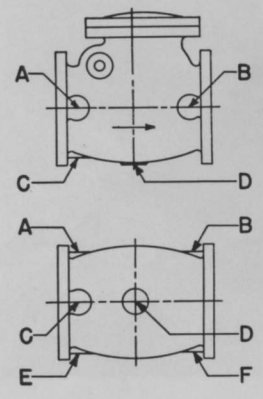
Either lever-and-weight or spring-and-lever check valves are adjustable. Both types require field adjustment to meet particular operating conditions. Unless otherwise ordered, the lever and weight or the spring and lever is placed on the right hand side when facing the valve inlet. Under conditions of extreme rapid flow reversal check valves with dual lever arms can be supplied.

Stainless steel hinge pins are featured in all sizes. Lever-and-weight or spring-and-lever type check valves, sizes 4″-14″ are supplied with hinge pin extending through bronze bushings, and outside packed glands. Sizes 16″ and larger are regularly supplied with hinge pin extending through bronze bushings, and outside packed glands. Alemite fittings for lubrication of bronze bushings in all sizes can be included when so ordered. Both of these designs are detailed at the left.

Screwed-type by-passes can be furnished on check valves, sizes 14″ and smaller. Larger sizes are supplied with flange type by-passes. All check valves have bosses on sides and bottom which may be tapped for draining or used for by-pass. When tapping is required, boss designation and size of tap should be stated, as shown below.

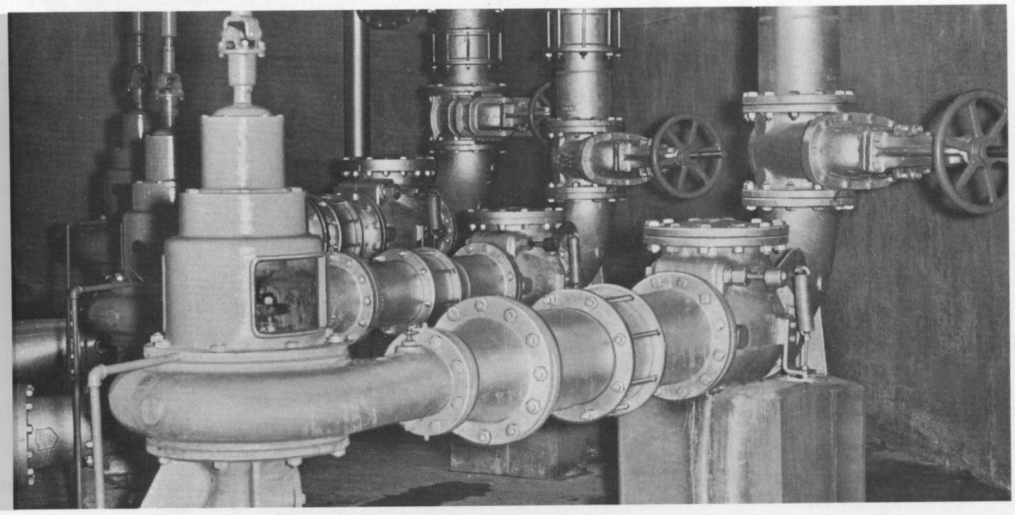
M&H Check Valves, sizes 2½″-14″ inclusive, for fire protection systems, are listed and approved by Underwriters Laboratories and Associated Factory Mutuals and are so marked.

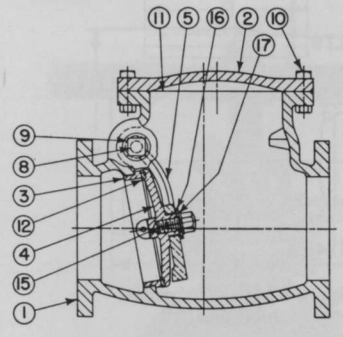
TAPPING BOSSES



Maximum Size Tap	
Size Valve	Size Tap
2½	¾
3	¾
4	1
5	1
6	1¼
8	2
10	2
12	2
14	2

Dimensions in Inches

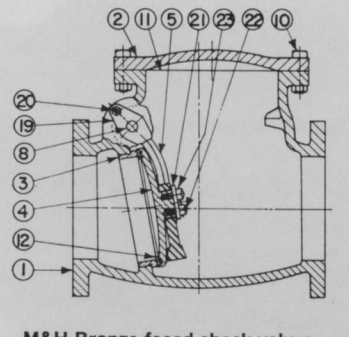




M&H Bronze faced check valves—
5″ through 14″.

PARTS LIST — TABLE 1

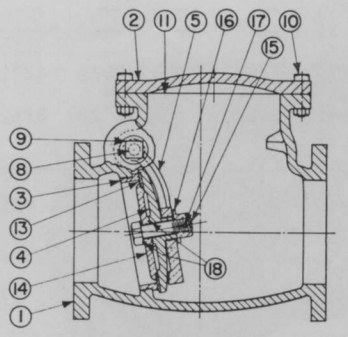
Part No.	Part	No. Re,'d	Material
1	Body	1	Cast Iron
2	Cover	1	Cast Iron
3	Body Ring	1	Bronze
4	Clapper	1	Cast Iron
5	Clapper Arm	1	Bronze
8	Hinge Pin	1	Stainless Steel
9	Side Plug	2	Bronze
10	Cover Bolt and Nut	—	Steel
11	Cover Gasket	1	Asbestos
12	Clapper Ring	1	Bronze
15	Cap Screw	1	Bronze
16	Cut Washer	1	Galv. Steel
17	Lock Washer	1	Galv. Steel



M&H Bronze faced check valves—
16″ and up.

PARTS LIST — TABLE 2

Part No.	Part	No. Re,'d	Material
1	Body	1	Cast Iron
2	Cover	1	Cast Iron
3	Body Ring	1	Bronze
4	Clapper	1	Cast Iron
5	Clapper Arm	1	Bronze or Cast Steel
8	Hinge Pin	1	Stainless Steel
10	Cover Bolt and Nut	—	Steel
11	Cover Gasket	1	Asbestos
12	Clapper Ring	1	Bronze
19	Gland (Bronze Bushed)	2	Cast Iron
20	Gland Stub and Nut	4	Steel
21	Clapper Cap Plate	1	Cast Iron
22	Cap Screw	—	Steel
23	Lock Wire	1	Steel



M&H Rubber faced check valves—
4″ through 16″.

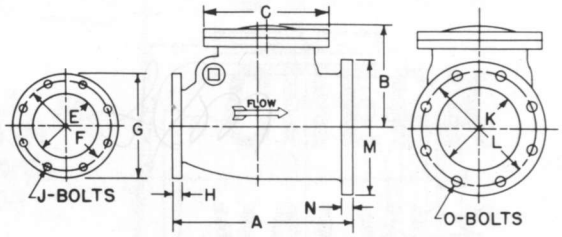
PARTS LIST — TABLE 3

Part No.	Part	No. Re,'d	Material
1	Body	1	Cast Iron
2	Cover	1	Cast Iron
3	Body Ring	1	Bronze
4	Clapper	1	Cast Iron
5	Clapper Arm	1	Bronze
8	Hinge Plug	1	Stainless Steel
9	Side Plug	2	Bronze
10	Cover Bolt and Nut	—	Steel
11	Cover Gasket	1	Asbestos
13	Disc Ring	1	Rubber
14	Clamp	1	Bronze
15	Clapper Bolt	1	Bronze
16	Clapper Nut	1	Bronze
17	Cotter (Split Pin)	1	Bronze
18	Gasket	2	Copper-Asbestos

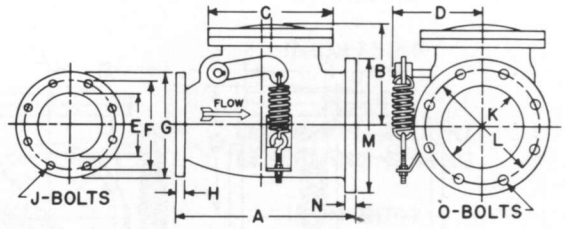
Increasing Check Valves

1 Save space in tight piping layouts

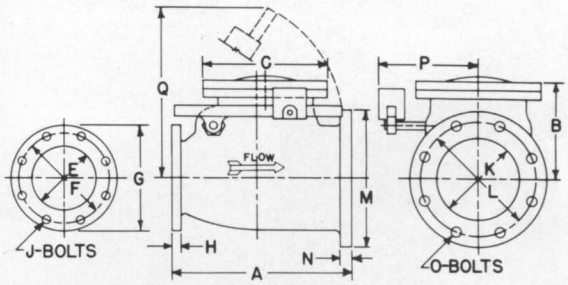
2 Eliminate need and cost of increasing fittings



INCREASING CHECK VALVE



INCREASING CHECK VALVE



INCREASING CHECK VALVE

INCREASING CHECK VALVE — Dimensions in Inches

Valve Size	3″x4″	4″x6″	4″x8″	5″x6″	5″x8″	6″x8″	6″x10″	8″x10″	8″x12″
A	11	13½	15	15¼	16	17	17½	20	21
B	6½	7¾	7¾	9½	9½	9¾	9¾	12	12
C	7⅜	9¼	9¼	10¾	10¾	12¼	12¼	14¾	14¾
D	6	6½	6½	7⅞	7⅞	8⁹⁄₁₆	8⁹⁄₁₆	10¼	10¼
E	3	4	4	5	5	6	6	8	8
F	6	7½	7½	8½	8½	9½	9½	11¾	11¾
G	7½	9	9	10	10	11	11	13½	13½
H	¾	1⁵⁄₁₆	1⁵⁄₁₆	1⁵⁄₁₆	1⁵⁄₁₆	1	1	1⅛	1⅛
J	4-⅝	8-⅝	8-⅝	8-¾	8-¾	8-¾	8-¾	8-¾	8-¾
K	4	6	8	6	8	8	10	10	12
L	7½	9½	11¾	9½	11¾	11¾	14¼	14¼	17
M	9	11	13½	11	13½	13½	16	16	19
N	1⁵⁄₁₆	1	1⅛	1	1⅛	1⅛	1 1³⁄₁₆	1 1³⁄₁₆	1¼
O	8-⅝	8-¾	8-¾	8-¾	8-¾	8-¾	12-⅞	12-⅞	12-⅞
P	6⅝	7½	7½	8⅞	8⅞	9½	9½	11¼	11¼
Q	10⅜	13	13	16½	16½	16½	16½	20	20

Larger Sizes Available on Request

M&H Check Valves

IRON BODY

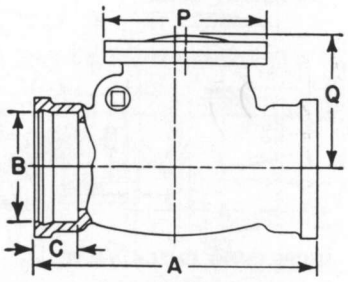


Figure 61—Hub End.

BRONZE MOUNTED

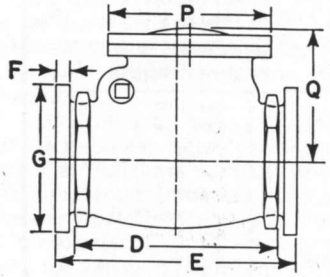


Figure 59—Screwed End.
Figure 60—Flanged End.

FULL OPENING

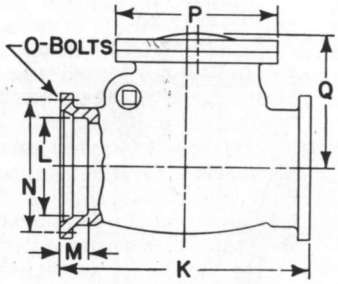


Figure 62-M—Mechanical Joint End.

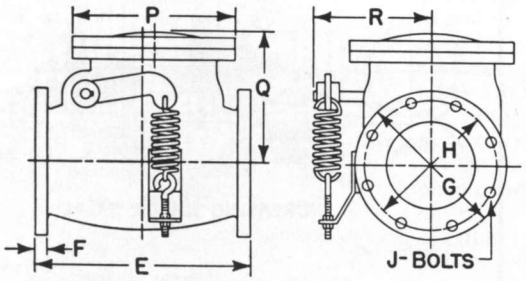


Figure 60-SL—Flanged End with Spring and Lever.

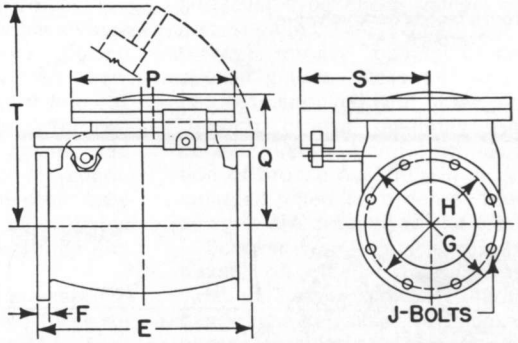


Figure 50—Flanged End with Lever and Weight.

TABLE 14—DIMENSIONS IN INCHES

Size Valve	2	2½	3	4	5	6	8	10	12	14	16	18	20	24	30
A End to End Hub	—	—	16¼	18⅝	18½	22	25½	27⅝	31¼	35¼	35	36½	37⅝	46	—
B Inside Diameter of Hub	—	—	4.76	5.80	6.70	7.90	10.10	12.20	14.30	16.45	18.80	20.92	23.06	27.32	—
C Depth of Hub	—	—	3½	4	4	4	4	4	4	4	4	4	4	4	—
D End to End Screwed	6½	10	10¼	12⅝	14¾	15 11/16	18¼	—	—	—	—	—	—	—	—
E End to End Flanged	8	10	10¼	13	15	16	19	22	26	30	35	36½	37⅝	44	49½
F Flange Thickness	⅝	11/16	¾	15/16	15/16	1	1⅛	1 3/16	1¼	1⅜	1 7/16	1 9/16	1 11/16	1⅞	2⅛
G Flange Diameter	6	7	7½	9	10	11	13½	16	19	21	23½	25	27½	32	38¾
H Bolt Circle	4¾	5½	6	7½	8½	9½	11¾	14¼	17	18¾	21¼	22¾	25	29½	36
J Number & Dia. Bolts	4-⅝	4-⅝	4-⅝	8-⅝	8-¾	8-¾	8-¾	12-⅞	12-⅞	12-1	16-1	16-1⅛	20-1⅛	20-1¼	28-1¼
K End to End Mech. Joint	—	—	13½	16½	—	22	22½	24⅝	28¾	34¼	34¼	—	—	—	—
L I. D. Hub Mech. Joint	—	—	4.06	5.00	—	7.09	9.25	11.20	13.40	15.59	17.69	—	—	—	—
M Depth Hub Mech. Joint	—	—	2½	2½	—	2½	2½	2½	2½	3½	3½	—	—	—	—
N Bolt Circle Mech. Joint	—	—	6 3/16	7½	—	9½	11¾	14	16¼	18¾	21	—	—	—	—
O No. & Dia. T-Head Bolt	—	—	4-⅝	4-¾	—	6-¾	6-¾	8-¾	8-¾	10-¾	12-¾	—	—	—	—
P Diameter Cover	6¼	6¾	7⅜	9¼	10¾	12¼	14¾	19	21	23½	27¾	27½	32	38¾	43¾
Q Center Valve To Top Cover	5 5/16	5 15/16	6½	7¾	9½	9¾	12	14¼	16 7/16	18¾	21⅝	23 3/16	24½	28	33⅛
LEVER AND SPRING															
R Center Valve To End Hinge Pin	4⅜	5¼	6	6½	7⅞	8 5/16	10¼	13¼	13⅞	15½	17¾	18 5/16	19	22½	25
LEVER AND WEIGHT															
S Center Valve To Outside Weight	4⅝	5¾	6⅝	7½	8⅞	9½	11¼	14½	15¼	17	19⅛	20 9/16	21	28½	27
T Center Valve To End Lever, Valve Open	7½	—	10⅜	13	—	16½	20	23½	31	32½	34½	—	42	—	—

FORM A-4
(MAY '70)

U.S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
OFFICE OF WATER DATA COORDINATION

INVENTORY OF HYDROLOGIC DATA STATIONS
QUALITY OF WATER

APPROVED.
Budget Bureau No. 42-R1485
Approval Expires June 30, 1976

1. AGENCY CODE	2. TYPE	3. LATITUDE	4. LONGITUDE	5.
MC	Q	34° 35' 14" N	77° 21' 36" W	

6. AGENCY STATION NO.	7. STATION NAME
BB-220	BB-190-220

8. DRAINAGE BASIN CODE No.	Letter	9. STATE CODE	10. COUNTY CODE	11. COUNTY NAME
06	N	32	133	Onslow

12. PERIOD OF RECORD Began	Discontinued	Y ☐ Continuous Interruption Exceeds 1 Year	13	14
1975				

15. SITE

☐ 101 Stream ☐ 104 Reservoir ☒ 107 Well
☐ 102 Canal ☐ 105 Estuarine zone ☐ 108 Drain
☐ 103 Lake ☐ 106 Spring ☐ 109 Other

16. TYPES OF DATA AVAILABLE AND FREQUENCY OF MEASUREMENT (Enter appropriate number (1-8) beside each parameter to indicate frequency of measurement. For parameters telemetered, enter "T".)

1 Continuous 3 Daily 5 Monthly 7 Annual
2 Seasonal 4 Weekly 6 Quarterly 8 Other Periodic

Physical
311 ___ Temperature
312 ___ Specific conductance
313 ___ Turbidity
314 ___ Color
315 ___ Odor
316 ___ pH (field)
317 8 pH (lab)
318 ___ Eh
319 ___ Suspended solids
320 ___ Other

Chemical
331 ___ Dissolved solids
332 8 Chloride
333 ___ Nutrients (nitrogen)
334 ___ Nutrients (phosphorus)
335 ___ Common ions
336 8 Hardness
337 ___ Radiochemical
338 ___ Dissolved oxygen
339 ___ Other gases
340 ___ Minor elements
341 ___ Pesticides (insecticides, herbicides, etc.)
342 ___ Detergents - MBS
343 ___ Biochemical oxygen demand
344 ___ Carbon (total, dissolved, etc.)

Biologic
361 ___ Coliforms
362 ___ Other micro-organisms (Benthic organism, phytoplankton, etc.)
363 ___ Other

Sediment
371 ___ Concentration (suspended)
372 ___ Particle size (suspended)
373 ___ Particle size (bed load material)
374 ___ Other

17. SUPPLEMENTARY DATA AVAILABLE FOR STATION

☐ 421 Surface water station ☐ 423 Water stage or level ☐ 425 Time of travel
☐ 422 Ground water station ☒ 424 Water discharge ☐ 426 Drainage area

18. STORAGE OF DATA

☐ 501 Published ☐ 503 Data on punchcard ☐ 505 Other
☒ 502 Not published ☐ 504 Data on magnetic tape, disc, data cell, etc.

19. INQUIRIES ABOUT DATA SHOULD BE SENT TO:

Office Base Maintenance Department, Utilities Division
Street No. Marine Corps Base
City, State, Zip Camp Lejeune, North Carolina 28542

City Code ~~28542~~ 0735

20. DATA ARE AVAILABLE TO PUBLIC ON REQUEST ☒ Yes ☐ No

21. OFFICE COMPLETING FORM
BASE MAINTENANCE DEPARTMENT

22. COMPILER'S NAME
BOB WILSON

23. DATE Month 10 Year 19 75

WATER ANALYSIS LABORATORY
802 HAMLET HIGHWAY
BENNETTSVILLE, SOUTH CAROLINA
29512

(803) 479-4639

CONSULTANTS FOR:
INDUSTRY
MUNICIPALITIES
HOME OWNERS
DEVELOPERS
IRRIGATION
OTHERS

DATE: June 25, 1974

Report To: Carolina Well & Pump Co.
Sanford, N. C.

Date Analyzed: 6/25/74

Sample Number: #1 - Well No 2

Analysis Results--Parts Per Million

Determination		Determination	
pH	7.2	Carbon Dioxide (CO_2)	3
Iron (Fe)	0.9	Total Acidity ($CaCO_3$)	6
Nitrate (NO_3)	Trace	Calcium Hardness ($CaCO_3$)	153
Fluoride (F)	0.2	Magnesium Hardness ($CaCO_3$)	45
Manganese (Mn)	Trace	Carbonate Hardness ($CaCO_3$)	156
Total Hardness ($CaCO_3$)	198	Noncarbonate Hardness ($CaCO_3$)	42
Chlorides (Cl)	16	Alkalinity (Phenolphthalein) ($CaCO_3$)	0
Sulfate (SO_4)	2.3	Carbonate Alkalinity ($CaCO_3$)	0
Phosphate (PO_4)	0.2	Bicarbonate Alkalinity ($CaCO_3$)	156
Magnesium (Mg)	10.8	Total Alkalinity ($CaCO_3$)	156
Calcium (Ca)	61.2	Total Dissolved Solids	241
Carbonate (CO_3)	0	Specific Conductance (micromhos at 25°)	370
Bicarbonate (HCO_3)	190	Appearance When Analyzed	Clear
Hydroxide (OH)	0	Odor When Analyzed	Not Objectionable

Water Analysis Laboratory
802 Hamlet Highway
Bennettsville, South Carolina 29512

SIGNED: _____
LABORATORY DIRECTOR

ANALYTICAL METHODS REFERENCES: 'STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER,' APHA, AWWA AND WPCF AND 'METHODS FOR COLLECTION AND ANALYSIS OF WATER SAMPLES,' WATER SUPPLY PAPER 1454 (1960), U. S. GEOLOGICAL SURVEY, WASHINGTON, D. C.

SAFETY SWITCHES — HEAVY DUTY
VISIBLE BLADES

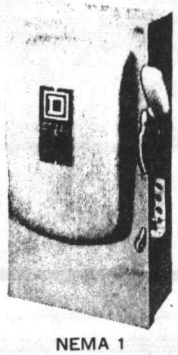
General Purpose and Raintight Visible Blade Heavy Duty Safety Switches are designed for application where performance and continuity of service are required. They meet Federal Specification W-S-865c for Heavy Duty Switches and are UL listed: File E2875. The NEMA 4 and 5 and NEMA 12 devices meet NEMA KS1-1969 for Type HD.

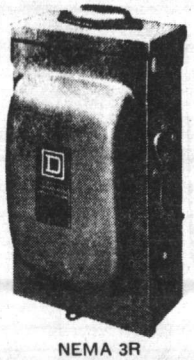
240 VOLT

SINGLE THROW FUSIBLE

Systems	Amps.	NEMA 1 Indoor Cat. No.	NEMA 1 Indoor Price	NEMA 3R Rain-tight Type RB Cat. No.	NEMA 3R Rain-tight Type RB Price	VISIBLE BLADE NEMA 4 and 5 Dust-tight, Water-tight D-Cast Enclosure DS-Stainless Steel Cat. No.	VISIBLE BLADE NEMA 4 and 5 Dust-tight, Water-tight D-Cast Enclosure DS-Stainless Steel Price	NEMA 12 JIC-Mill & Foundry Type Single Stroke Cover Sealing With Knockouts Cat. No.	NEMA 12 JIC-Mill & Foundry Type Single Stroke Cover Sealing Without Knockouts Cat. No.	NEMA 12 JIC-Mill & Foundry Type Single Stroke Cover Sealing Price	Horsepower Ratings 240 V. AC Std. 1φ	240 V. AC Std. 3φ	240 V. AC Max. 1φ	240 V. AC Max. 3φ	DC 250 V. Std.	DC 250 V. Max.	Amps.
2 POLE, 240 VOLTS AC — 250 VOLTS DC																	
	30	◐45251	$ 25.	H221RB	$ 46.	H221D or DS	$ 186.	H221A	H221AWK	$ 48.	1½	..	3	..	5	5	30
	30	H221	25.	.....	....	.....	....	✱H221-2A	✱H221-2AWK	58.	1½	..	3	..	5	5	30
	30	✱H221-2	42.	.....	....	.....	....	H222A	H222AWK	62.	3	..	10	..	10	10	60
	60	H222	47.	H222RB	86.	H222D or DS	224.	H223A	H223AWK	91.	7½	..	15	..	20	20	100
	100	H223	75.	H223RB	110.	H223D or DS	492.	H224A	H224AWK	152.	15	..	..	..	40	40	200
	200	H224	132.	H224RB	158.	H224D or DS	675.	H225A	H225AWK	342.	..	..	..	..	60	60	400
	400	H225	272.	H225R	387.	H225DS	1372.	H226A	H226AWK	598.	..	75	..	100	..	..	600
	600	H226	541.	H226R	726.	H226DS	1969.	.....	.....	....	..	..	..	..	..	..	....
	800	●H227	837.	●H227R	1138.	.....	....	.....	.....	....	..	..	..	..	..	..	....
	1200	●H228	1158.	●H228R	1578.	.....	....	.....	.....	....	..	..	..	..	..	..	....
3 WIRE S/N (2 BLADES 2 FUSES) 240 VOLTS AC — 125/250 VOLTS DC																	
	30	H221N	$ 25.	H221NRB	$ 46.	H221ND or NDS	$ 193.	H221NA	H221NAWK	$ 51.	1½	3	3	7½	5	5	30
	60	H222N	47.	H222NRB	86.	H222ND or NDS	233.	H222NA	H222NAWK	87.	3	7½	10	15	10	10	60
	100	H223N	75.	H223NRB	110.	H223ND or NDS	507.	H223NA	H223NAWK	108.	7½	15	15	30	20	20	100
	200	H224N	132.	H224NRB	158.	H224ND or NDS	696.	H224NA	H224NAWK	168.	15	25	..	60†	40	40	200
	400	H225N	309.	H225NR	387.	H225NDS	1401.	H225NA	H225NAWK	380.	..	50	..	100	50	50	400
	600	H226N	579.	H226NR	726.	H226NDS	1997.	.....	H226NAWK	634.	..	75	..	100	..	..	600
	800	●H227N	909.	●H227NR	1210.	.....	....	.....	.....	....	..	..	..	..	..	..	....
	1200	●H228N	1230.	●H228NR	1660.	.....	....	.....	.....	....	..	..	..	..	..	..	....
3 POLE, 240 VOLTS AC																	
	30	◐45351	$ 31.	.....	....	.....	....	.....	.....	....	..	3	..	7½	..	..	30
	30	H321	31.	H321RB	$ 66.	H321D or DS	$ 197.	H321A	H321AWK	$ 66.	..	3	..	7½	..	..	30
	30	✱H321-2	51.	.....	....	.....	....	✱H321-2A	✱H321-2AWK	67.	..	3	..	7½	..	..	30
	60	H322	54.	H322RB	90.	H322D or DS	242.	H322A	H322AWK	80.	..	7½	..	15	..	..	60
	100	H323	86.	H323RB	130.	H323D or DS	517.	H323A	H323AWK	123.	..	15	..	30	..	..	100
	200	H324	147.	H324RB	178.	H324D or DS	727.	H324A	H324AWK	194.	..	25	..	60	..	..	200
	400	H325	341.	H325R	396.	H325DS	1416.	H325A	H325AWK	404.	..	50	..	100	..	..	400
	600	H326	615.	H326R	828.	H326DS	2027.	.....	H326AWK	671.	..	75	..	100	..	..	600
	800	●H327	1136.	●H327R	1470.	.....	....	.....	.....	....	..	..	..	..	..	..	....
	1200	●H328	1445.	●H328R	1910.	.....	....	.....	.....	....	..	..	..	..	..	..	....
4 WIRE S/N (3 BLADES 3 FUSES) 240 VOLTS AC																	
	30	H321N	$ 31.	H321NRB	$ 66.	H321ND or NDS	$ 205.	H321NA	H321NAWK	$ 84.	..	3	..	7½	..	..	30
	60	H322N	54.	H322NRB	90.	H322ND or NDS	251.	H322NA	H322NAWK	88.	..	7½	..	15	..	..	60
	100	H323N	86.	H323NRB	130.	H323ND or NDS	534.	H323NA	H323NAWK	139.	..	15	..	30	..	..	100
	200	H324N	147.	H324NR	178.	H324ND or NDS	747.	H324NA	H324NAWK	199.	..	25	..	60	..	..	200
	400	H325N	378.	H325NR	431.	H325NDS	1416.	H325NA	H325NAWK	448.	..	50	..	100	..	..	400
	600	H326N	650.	H326NR	861.	H326NDS	2027.	.....	H326NAWK	708.	..	75	..	100	..	..	600
	800	●H327N	1208.	●H327NR	1542.	.....	....	.....	.....	....	..	..	..	..	..	..	....
	1200	●H328N	1517.	●H328NR	1990.	.....	....	.....	.....	....	..	..	..	..	..	..	....
												2φ		2φ			
4 POLE, 240 VOLTS AC																	
	30	✱H421-2	$ 62.	.....	....	.....	....	✱H421-2A	✱H421-2AWK	$ 80.	..	3	..	10	..	..	30
	60	H422	84.	.....	....	.....	....	H422A	H422AWK	97.	..	7½	..	20	..	..	60
	100	H423	132.	.....	....	.....	....	H423A	H423AWK	160.	..	15	..	30	..	..	100
	200	H424	238.	.....	....	.....	....	H424A	H424AWK	279.	..	30†	..	60	..	..	200
	400	H425	453.	.....	....	.....	....	H425A	H425AWK	535.	..	60	..	60	..	..	400
	600	H426	813.	.....	....	.....	....	.....	.....	....	..	..	..	..	..	..	600

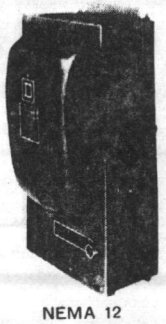
(Refer to Page 31 for footnotes.)


NEMA 1


NEMA 3R


NEMA 4 and 5
Stainless Steel


NEMA 4 and 5
Cast Aluminum Enclosure


NEMA 12

OFFICE OF THE
OFFICER IN CHARGE OF CONSTRUCTION
CAMP LEJEUNE, NORTH CAROLINA

APPROVED

SUBJECT TO CONTRACT REQUIREMENTS

CONTRACT ~~NBy~~ N62470-71-C-0525 SPEC. NO. 05-71-0525

DATE APR 11 1972

W. F. RUSSELL, JR.
CAPT. CEC. USN
Officer in Charge
of Construction

"Hello Analysis, Goodbye Worry"

WATER ANALYSIS LABORATORY

802 HAMLET HIGHWAY
BENNETTSVILLE, SOUTH CAROLINA
29512

(803) 479-4639

CONSULTANTS FOR:
INDUSTRY
MUNICIPALITIES
HOME OWNERS
DEVELOPERS
IRRIGATION
OTHERS

#220

DATE: July 8, 1974

Report To: Carolina Well & Pump Co.
Sanford, N. C.

Date Analyzed: 7/8/74

Sample Number: # 1 Well No 2

Analysis Results--Parts Per Million

Determination		Determination	
pH	7.9	Carbon Dioxide (CO_2)	3
Iron (Fe)	0.5	Total Acidity ($CaCO_3$)	7
Nitrate (NO_3)	0	Calcium Hardness ($CaCO_3$)	162
Fluoride (F)	0.2	Magnesium Hardness ($CaCO_3$))	51
Manganese (Mn)	Trace	Carbonate Hardness ($CaCO_3$)	140
Total Hardness ($CaCO_3$)	213	Noncarbonate Hardness ($CaCO_3$)	73
Chlorides (Cl)	18	Alkalinity (Phenolphthalein) ($CaCO_3$)	0
Sulfate (SO_4)	4.2	Carbonate Alkalinity ($CaCO_3$)	0
Phosphate (PO_4)	0.1	Bicarbonate Alkalinity ($CaCO_3$)	140
Magnesium (Mg)	12	Total Alkalinity ($CaCO_3$)	140
Calcium (Ca)	64.8	Total Dissolved Solids	247
Carbonate (CO_3)	0	Specific Conductance (micromhos at 25°)	380
Bicarbonate (HCO_3)	171	Appearance When Analyzed	Clear
Hydroxide (OH)	0	Odor When Analyzed	Not Objectionable

Water Analysis Laboratory
802 Hamlet Highway
Bennettsville, South Carolina 29512

SIGNED: _____
LABORATORY DIRECTOR

ANALYTICAL METHODS REFERENCES: 'STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTE-WATER.' APHA, AWWA AND WPCF AND 'METHODS FOR COLLECTION AND ANALYSIS OF WATER SAMPLES.' WATER SUPPLY PAPER 1454 (1960), U. S. GEOLOGICAL SURVEY, WASHINGTON, D. C.

12-21-81

Wells at CHB. Pull pump, use wire brush to fit casing brushing top to bottom several times to loosen scale in pipe & screen, pour 50 gal muriatic acid in, then run several gal. water in, then install pump, when pump is in turn on and off several times, allow water to only reach discharge head, let set over night, then pump to waste approx 4 hrs or until clear of acid, put pump on line, when pump is turned off do not start back until water is blown to waste approx 2 hrs, repeat blow off procedure again the next time pump is cut off, after this water should be OK. so stated mr Worth Pickard, Carolina well co.

WELL NUMBER BO 220		BY THOMAS / RAYNOR			DATE 12-5-83	
AIR LINE	STATIC LEVEL	PUMPING LEVEL	DRAIN DOWN	DISCHARGE PRESSURE	GPM	START TIME 1100
51'	13'	46'	9'	20.5	104	1115

REMARKS Line pressure about 22 PSI

MANUFACTURER	STAGE	S.N.	TOTAL HEAD	SIZE

WELL NUMBER BB 220 | BY Thomas - Brown | DATE 12-28-84

AIR LINE	STATIC LEVEL	PUMPING LEVEL	DRAIN DOWN	DISCHARGE PRESSURE	GPM	START TIME 1400
51	36	41	5	28	104	1420

REMARKS left set @ 28 psi 104 GPM P/L 41 P/D .5

MANUFACTURER	STAGE	S.N.	TOTAL HEAD	SIZE

CORBIN CONSTRUCTION CO.
P. O. BOX 5004
NEW RIVER PLAZA STATION
JACKSONVILLE, N. C. 28540

ELECTRIC LOG BY

Pump Co. Sanford N.C.

JOHNSON·KECK™ DR·61 ELECTRICAL LOGGING SYSTEM

Well TEST # [illegible] Owner [illegible]

Location [illegible] Date [illegible]

Borehole depth [illegible] ft. dia. 6 in. Casing depth [illegible] ft. dia. [illegible] in.

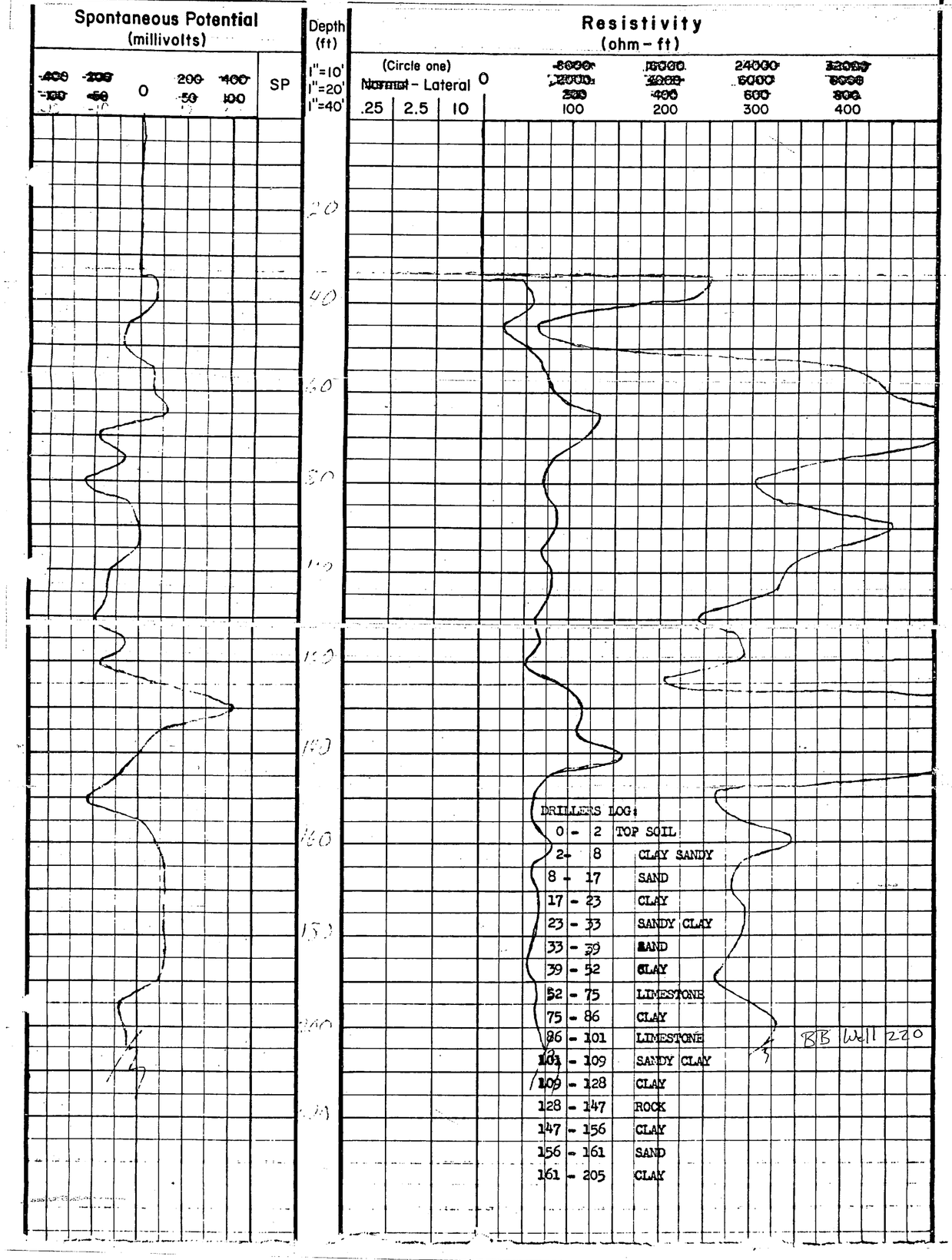
Mud resistivity [illegible] temperature [illegible] F

viscosity [illegible] sec weight 12 lb/gal type [illegible]

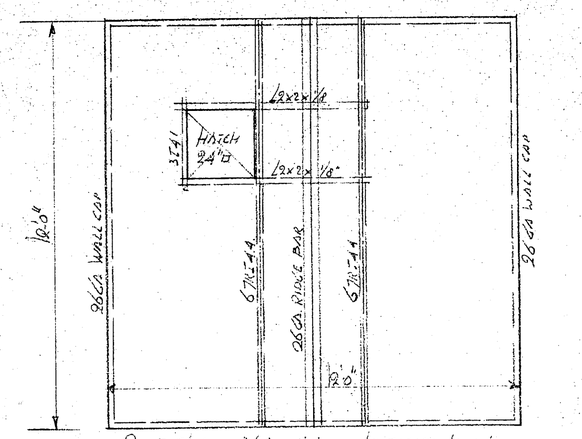
Measuring point 0 ft. above/below ground level

Fluid level in hole 12' ft. Other logs none

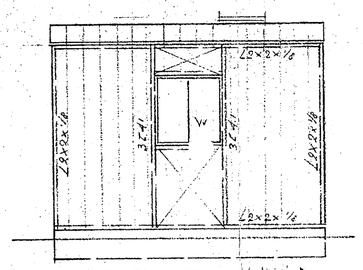
Driller [illegible] E·log operator [illegible]



1,244,061

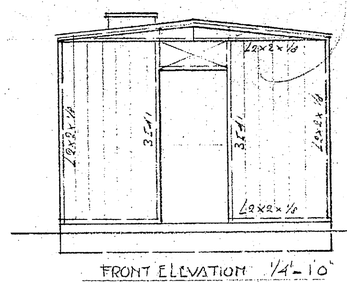


ROOF PLAN 3/8"= 1'0" LEFT SIDE HATCH
RIGHT SIDE HATCH OPPOSITE.

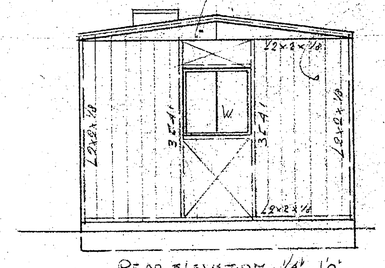


SIDE ELEVATION 1/4"=1'0"

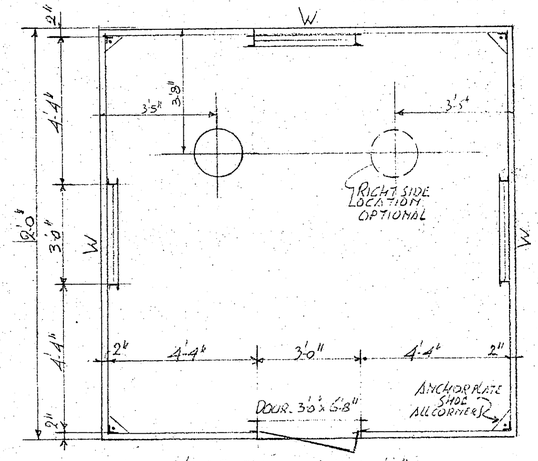
SIDE WALLS 26 GA. GALV. MET. SIDING "KENDLERS"
26 GA GABLE CLOSURE



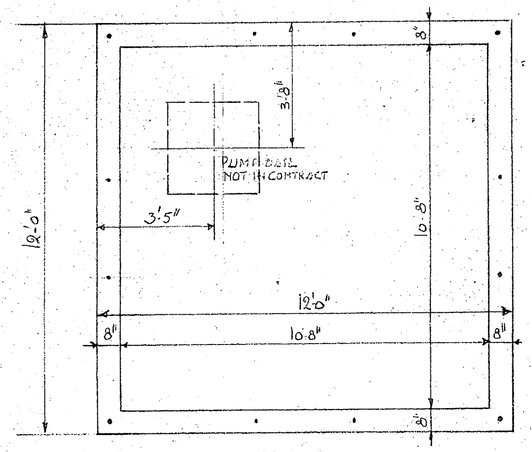
FRONT ELEVATION 1/4"=1'0"
DOOR. 3'0"x6'8"
METAL "KENDLER"



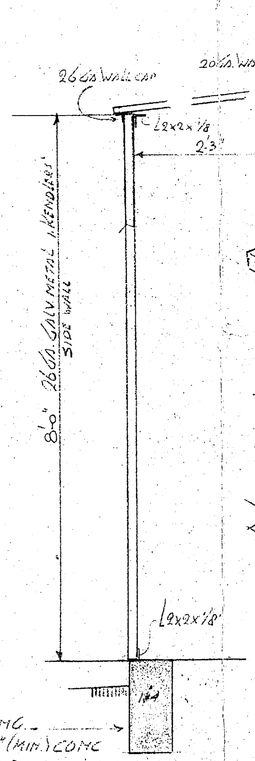
REAR ELEVATION 1/4"=1'0"
W= WINDOW 3'-0"x3'-0"
ALUMINUM HOR. SLIDING W/ SCREEN.

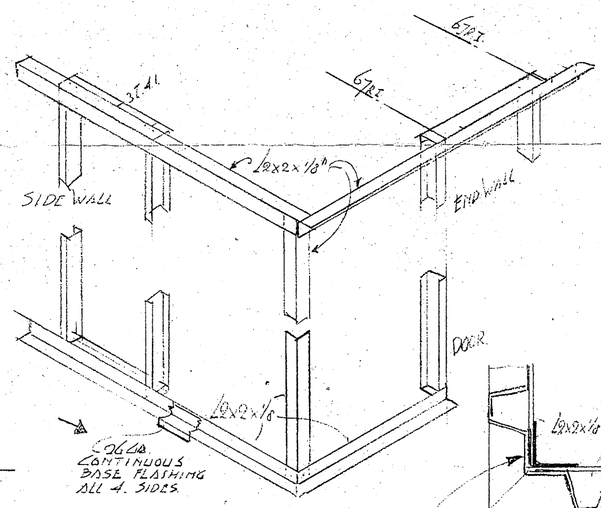


FLOOR PLAN 3/8"=1'0"



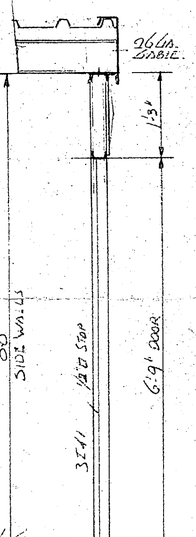
FOUNDATION PLAN 3/8"=1'0"





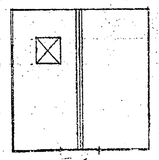
BOLTED FIELD CONNECTIONS
BOLTS - 5/16" ϕ.

26 GA. CORNER CLOSURE.

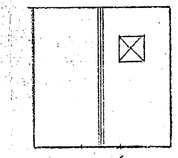


DESIGN LIVE LOAD ROOF 30 P.S.F
WIND 15 P.S.F

APPROVED
OFFICE OF THE OFFICER IN CHARGE OF CONSTRUCTION
CAMP LEJEUNE, NORTH CAROLINA
SUBJECT TO CONTRACT REQUIREMENTS
NAVFAC 2470-71
CONTRACT NBy 8-0525 SPEC. NO. 05-71-0528
DATE 1-25-72
W. F. RUSSELL JR.
CAPT. CEC USN
Officer in Charge of Construction



BLDG NO. 641 TYPE I (LEFT HATCH)
Nº REQ.



BLDG Nº 642. TYPE I (RIGHT HATCH).
Nº REQ.

PREFABRICATED METAL WELL HOUSE BUILDING. 12'x12'x8'.

JAMES W. KENDLER & SON
2501 MAGNOLIA RD. RICHMOND VA

DES. 122371 WBVB
REV. 1.14'72 WBVB

W. B. VAN BAKERGEM, AIA
ARCHITECT — ENGINEER
102 E. CARY ST. RICHMOND, VA. 23219

COMMONWEALTH OF VIRGINIA
W. B. VAN BAKERGEM
CIVIL ENGR.
CERTIFICATE No. 967
CERTIFIED PROFESSIONAL ENGINEER

SHEET 1 OF 2

SIDE WALL CONNECTION

END WALL CONNECTIONS
GIRTS @ 16. 11-8".

26GA. END CLOSURE.

WELD

CAULK

GIRTS @ 3'-0" OC

DOOR

8'-0"

1'-4"

3'-0" ALUM WINDOW. VERIFY.

3'-0" ALUM WINDOW VERIFY.

CAULK

CAULK

3'-0" DOOR

ALL FRAMES 3E4.1

CAULK

V-CRIMP PANEL

3'-8"

Nota: Base flashing & base angle must be set behind V-crimp panel or properly caulked

26 GA CONTINUOUS BASE FLASHING

2" 9" 4"

FOOTING

ANCHOR BOLT

WINDOW FRAME PANEL DETAILS

3/4" = 1'-0"

BOTTOM 3E4.1 ANCHORAGE.

STOP 1/2" □ WELD

3E4.1

DOOR

ALUM. THRESHOLD

CAULK.

BOTT. PL 3"x1/4" SET IN CAULKING

DOOR FRAME-PANEL DETAILS

3/4" = 1'-0"

1" 9"

2 1/2"

1/2" HOLE IN BOTTOM PLATE OVER CUT OFF ANCHOR BOLT PLUGWELD TO BOLT

TOP 3E4.1

BOTTOM 3E4.1

26GA PANEL

3'-0" VERIFY

3'-0" x 3'-8" ALUMINUM HOR. SL. WINDOW W/ SCREEN. DSB GLASS.

26 GA. PANEL

3'-9"

1'-4"

8'-0"

WINDOW FRAME-PANEL

3 REQ PER BLDG.

MATERIAL LIST PER FRAME

STILES	2	3E4.1	16	7'-9 1/8"
T&B	2	"	16	3'-3"
HOR	2	"	16	3'-0"

TOP 3E4.1

BOTT. PLATE 3"x1/4"

26GA PANEL

3'-0" x 6'-8" METAL DOOR

6'-8" DOOR

DOOR FRAME PANEL

1 REQ PER BLDG.

MATERIAL LIST PER FRAME

STILES	2	3E4.1	16	7'-10 3/8"
TOP	1	"	16	3'-3"
HOR	1	"	16	3'-0"
BOTT	1	3"x1/4	16	3'-3"
STOP	2	1/2" □	16	6'-8"
	1	1/2" □	16	2'-11"

ALUM. THRESHOLD 16 3'-0"
SAGER # 535. 5" WIDE x 3/4".

3E4.1

GIRT

3E4.1

3E4.1

12 3/4" x 1/4"

WINDOW PANEL

DOOR PANEL

OFFICE OF THE
OFFICER IN CHARGE OF CONSTRUCTION
CAMP LEJEUNE, NORTH CAROLINA
"AS NOTED"
APPROVED
SUBJECT TO CONTRACT REQUIREMENTS
NO 2470-71
CONTRACT NBy B-0528 SPEC. NO. 05-71-0528
DATE 1-25-72
W. F. RUSSELL, JR.
CAPT. CEC. USN
Officer in Charge
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PREFABRICATE METAL WELL HOUSE BUILDING. 12'x12'x8'

JAMES W. KENDLER & SON
2501 MAGNOLIA RD. RICHMOND VA

DES. 12.23.71 WBvB.
REV. 1.14.72 WBvB

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COMMONWEALTH OF VIRGINIA
W. B. VAN BAKERGEM
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CERTIFICATE No.
967
CERTIFIED PROFESSIONAL ENGINEER

SHEET 2 OF 2

Well BB-220 12-21-81

Screens set at

EST GPM 150 50 100

55 TO 70' 85' TO 95' 130' TO 145'

By mr Worth Rickard

B.B. WELL 220