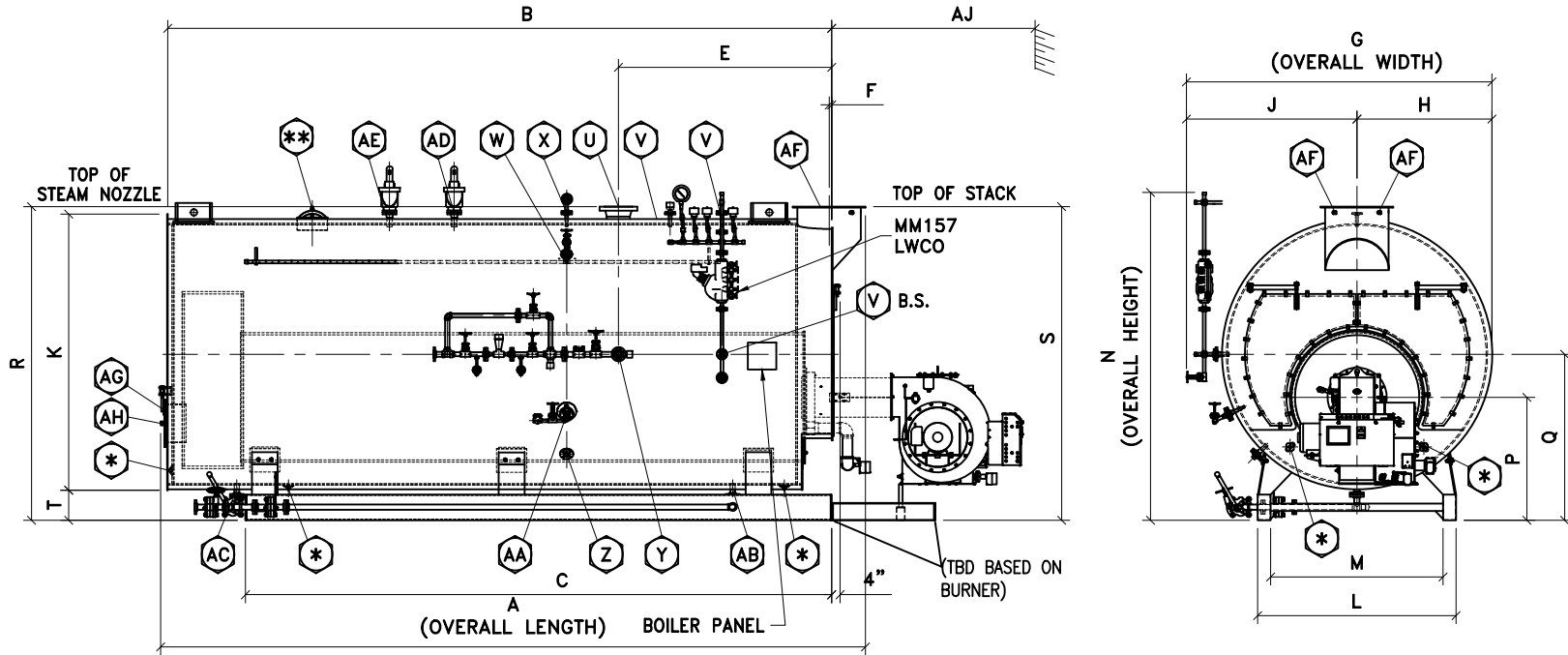


150 PSIG 2-PASS WET BACK  
SCOTCH MARINE BOILER  
DIMENSIONS & DATA CHART



| FOR ALL BOILER MODELS          |  |
|--------------------------------|--|
| B.S. - ON BOTH SIDES OF BOILER |  |
| U - 300# WELDNECK FLG          |  |
| * - (5) 3" x 4" HANDHOLE       |  |
| ** - (1) 12" x 16" MANWAY      |  |

DIMENSIONS CHART

| BOILER MODEL                  | F2-200     | F2-250  | F2-300    | F2-350  | F2-400  | F2-500  | F2-600  | F2-700  | F2-750  | F2-800  | F2-900  | F2-1000 | F2-1100 | F2-1200 | F2-1300    | F2-1400    | F2-1500    | F2-1600 | F2-1700 | F2-1800 | F2-2000   | F2-2200   | F2-2500   |
|-------------------------------|------------|---------|-----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------------|------------|------------|---------|---------|---------|-----------|-----------|-----------|
| BOILER HORSEPOWER             | 200        | 250     | 300       | 350     | 400     | 500     | 600     | 700     | 750     | 800     | 900     | 1000    | 1100    | 1200    | 1300       | 1400       | 1500       | 1600    | 1700    | 1800    | 2000      | 2200      | 2500      |
| HEATING SURFACE (ASME) (SqFt) | 829.05     | 1079.5  | 1354.4    | 1438.07 | 1623.08 | 2098    | 2419.5  | 2887.5  | 3079    | 3033.5  | 3694.25 | 4172    | 4296    | 4686    | 4973.5     | 5235.35    | 5759       | 5881    | 6237.25 | 6593.5  | 7633.8    | 8180.5    | 9274      |
| OVERALL LENGTH                | A 14'-1"   | 16'-2"  | 16'-10"   | 16'-6"  | 17'-10" | 17'-10" | 19'-11" | 19'-11" | 22'-8"  | 21'-11" | 22'-3"  | 22'-4"  | 21'-6"  | 22'-10" | 23'-10"    | 25'-4"     | 27'-9"     | 27'-9"  | 29'-1"  | 30'-4"  | 27'-4"    | 28'-11"   | 31'-9"    |
| SHELL LENGTH                  | B 13'-0"   | 15'-2"  | 15'-10"   | 15'-2"  | 16'-8"  | 16'-8"  | 18'-8"  | 18'-8"  | 19'-8"  | 20'-10" | 19'-2"  | 21'-2"  | 20'-2"  | 21'-8"  | 22'-8"     | 23'-8"     | 25'-8"     | 25'-8"  | 27'-0"  | 28'-4"  | 24'-8"    | 26'-2"    | 29'-2"    |
| SKID LENGTH                   | C 13'-1"   | 15'-2"  | 15'-10"   | 15'-8"  | 17'-1"  | 17'-1"  | 19'-1"  | 19'-10" | 20'-11" | 22'-1"  | 20'-3"  | 22'-3"  | 21'-3"  | 22'-10" | 23'-10"    | 24'-10"    | 26'-10"    | 26'-10" | 28'-2"  | 29'-7"  | 26'-7"    | 28'-0"    | 31'-0"    |
| BOILER FRONT TO SKID FRONT    | D 0"       | 0"      | 0"        | 0"      | 0"      | 0"      | 0"      | 0"      | 0"      | 0"      | 0"      | 0"      | 0"      | 0"      | 0"         | 0"         | 0"         | 0"      | 0"      | 0"      | 0"        | 0"        | 0"        |
| BOILER FRONT TO STEAM NOZZLE  | E 4'-7"    | 4'-7"   | 4'-7"     | 5'-4"   | 5'-5"   | 5'-5"   | 5'-10"  | 5'-10"  | 5'-10"  | 5'-10"  | 5'-10"  | 5'-10"  | 5'-10"  | 5'-10"  | 5'-10"     | 5'-10"     | 5'-10"     | 6'-6"   | 6'-6"   | 6'-6"   | 7'-8"     | 7'-8"     | 7'-8"     |
| BOILER FRONT TO STACK         | F 11 3/8"  | 11 3/8" | 11 3/8"   | 1'-2"   | 1'-2"   | 1'-12"  | 1'-2"   | 1'-7"   | 1'-7"   | 1'-7"   | 1'-7"   | 1'-7"   | 1'-7"   | 1'-7"   | 1'-7"      | 1'-7"      | 1'-7"      | 1'-7"   | 1'-7"   | 1'-7"   | 1'-11"    | 1'-11"    | 1'-11"    |
| OVERALL WIDTH                 | G 7'-1"    | 7'-1"   | 7'-5"     | 7'-11"  | 7'-11"  | 8'-9"   | 8'-9"   | 9'-1"   | 9'-1"   | 9'-1"   | 9'-7"   | 9'-7"   | 10'-1"  | 10'-1"  | 10'-5"     | 10'-5"     | 10'-5"     | 10'-9"  | 10'-9"  | 10'-9"  | 11'-9"    | 11'-9"    | 11'-9"    |
| CENTER TO SMOKEBOX O.D.       | H 3'-8"    | 3'-8"   | 3'-9"     | 4'-1"   | 4'-1"   | 4'-3"   | 4'-3"   | 4'-8"   | 4'-8"   | 4'-8"   | 4'-11"  | 4'-11"  | 5'-2"   | 5'-2"   | 5'-4"      | 5'-4"      | 5'-4"      | 5'-6"   | 5'-6"   | 5'-6"   | 6'-0"     | 6'-0"     | 6'-0"     |
| CENTER TO PANEL               | J 4'-6"    | 4'-6"   | 4'-7"     | 4'-11"  | 4'-11"  | 5'-1"   | 5'-1"   | 5'-6"   | 5'-6"   | 5'-6"   | 5'-9"   | 5'-9"   | 6'-0"   | 6'-0"   | 6'-2"      | 6'-2"      | 6'-2"      | 6'-4"   | 6'-4"   | 6'-4"   | 6'-10"    | 6'-10"    | 6'-10"    |
| JACKET DIAMETER               | K 7'-1"    | 7'-1"   | 7'-4"     | 7'-9"   | 7'-9"   | 8'-7"   | 8'-7"   | 9'-1"   | 9'-1"   | 9'-1"   | 9'-6"   | 9'-6"   | 10'-1"  | 10'-1"  | 10'-4"     | 10'-4"     | 10'-4"     | 10'-7"  | 10'-7"  | 10'-7"  | 11'-7"    | 11'-7"    | 11'-7"    |
| SKID WIDTH OUTSIDE            | L 5'-6"    | 5'-6"   | 5'-6"     | 5'-11"  | 6'-10"  | 6'-10"  | 7'-4"   | 7'-4"   | 7'-4"   | 7'-4"   | 7'-11"  | 7'-11"  | 8'-9"   | 8'-9"   | 8'-9"      | 9'-11"     | 9'-11"     | 9'-11"  | 9'-11"  | 9'-11"  | 9'-11"    | 9'-11"    | 9'-11"    |
| SKID WIDTH INSIDE             | M 4'-10"   | 4'-10"  | 4'-10"    | 5'-3"   | 5'-10"  | 5'-10"  | 6'-4"   | 6'-4"   | 6'-4"   | 6'-4"   | 6'-11"  | 6'-11"  | 7'-9"   | 7'-9"   | 7'-9"      | 8'-11"     | 8'-11"     | 8'-11"  | 8'-11"  | 8'-11"  | 8'-11"    | 8'-11"    | 8'-11"    |
| OVERALL HEIGHT                | N 8'-11"   | 8'-11"  | 9'-3 1/4" | 9'-10"  | 9'-10"  | 10'-8"  | 10'-8"  | 10'-11" | 10'-11" | 10'-11" | 11'-6"  | 11'-6"  | 11'-11" | 11'-11" | 12'-4"     | 12'-4"     | 12'-4"     | 12'-7"  | 12'-7"  | 12'-7"  | 13'-7"    | 13'-7"    | 13'-7"    |
| FLOOR TO CENTER OF FURNACE    | P 3'-5"    | 4'-1"   | 4'-2"     | 4'-3"   | 4'-3"   | 4'-7"   | 4'-7"   | 4'-8"   | 4'-8"   | 4'-8"   | 4'-9"   | 4'-9"   | 5'-1"   | 5'-1"   | 5'-2"      | 5'-2"      | 5'-2"      | 5'-4"   | 5'-4"   | 5'-4"   | 5'-7"     | 5'-7"     | 5'-7"     |
| FLOOR TO CENTER OF BOILER     | Q 4'-7"    | 5'-1"   | 5'-2"     | 5'-7"   | 5'-7"   | 6'-1"   | 6'-1"   | 6'-3"   | 6'-3"   | 6'-3"   | 6'-8"   | 6'-8"   | 6'-9"   | 6'-9"   | 6'-10 1/2" | 6'-10 1/2" | 6'-10 1/2" | 7'-1"   | 7'-1"   | 7'-1"   | 7'-6 1/2" | 7'-6 1/2" | 7'-6 1/2" |
| FLOOR TO STEAM NOZZLE         | R 8'-7"    | 8'-7"   | 8'-11"    | 9'-5"   | 9'-5"   | 10'-3"  | 10'-3"  | 10'-7"  | 10'-7"  | 10'-7"  | 11'-1"  | 11'-1"  | 11'-7"  | 11'-7"  | 11'-11"    | 11'-11"    | 11'-11"    | 12'-3"  | 12'-3"  | 12'-3"  | 13'-3"    | 13'-3"    | 13'-3"    |
| FLOOR TO STACK OUTLET         | S 8'-7"    | 8'-7"   | 8'-11"    | 9'-5"   | 9'-5"   | 10'-3"  | 10'-3"  | 10'-7"  | 10'-7"  | 10'-7"  | 11'-1"  | 11'-1"  | 11'-7"  | 11'-7"  | 11'-11"    | 11'-11"    | 11'-11"    | 12'-3"  | 12'-3"  | 12'-3"  | 13'-3"    | 13'-3"    | 13'-3"    |
| FLOOR TO BOTTOM OF SMOKEBOX   | T 1'-0"    | 1'-0"   | 1'-0"     | 1'-0"   | 1'-0"   | 1'-0"   | 1'-0"   | 1'-0"   | 1'-0"   | 1'-0"   | 1'-0"   | 1'-0"   | 1'-0"   | 1'-0"   | 1'-0"      | 1'-0"      | 1'-0"      | 1'-0"   | 1'-0"   | 1'-0"   | 1'-0"     | 1'-0"     | 1'-0"     |
| STEAM NOZZLE CONNECTION       | U 4"       | 6"      | 6"        | 6"      | 6"      | 6"      | 8"      | 8"      | 8"      | 8"      | 8"      | 10"     | 10"     | 10"     | 10"        | 10"        | 12"        | 12"     | 12"     | 12"     | 12"       | 14"       | 14"       |
| AUXILIARY CONNECTION          | V 1"       | 1"      | 1"        | 1"      | 1"      | 1"      | 1"      | 1"      | 1"      | 1"      | 1"      | 1"      | 1"      | 1"      | 1"         | 1"         | 1"         | 1"      | 1"      | 1"      | 1"        | 1"        | 1"        |
| SURFACE BLOWDOWN CONNECTION   | W 1"       | 1"      | 1"        | 1"      | 1"      | 1"      | 1"      | 1"      | 1"      | 1"      | 1"      | 1"      | 1"      | 1"      | 1"         | 1"         | 1"         | 1"      | 1"      | 1"      | 1"        | 1"        | 1"        |
| VENT CONNECTION               | X 2"       | 2"      | 2"        | 2"      | 2"      | 2"      | 2"      | 2"      | 2"      | 2"      | 2"      | 2"      | 2"      | 2"      | 2"         | 2"         | 2"         | 2"      | 2"      | 2"      | 2"        | 2"        | 2"        |
| FEEDWATER CONNECTION          | Y 2"       | 2"      | 2"        | 2"      | 2"      | 2"      | 2"      | 2"      | 2"      | 2"      | 2"      | 2"      | 3"      | 3"      | 3"         | 3"         | 3"         | 3"      | 3"      | 3"      | 3"        | 3"        | 3"        |
| LOW FIRE HOLD CONNECTION      | Z 1"       | 1"      | 1"        | 1"      | 1"      | 1"      | 1"      | 1"      | 1"      | 1"      | 1"      | 1"      | 1"      | 1"      | 1"         | 1"         | 1"         | 1"      | 1"      | 1"      | 1"        | 1"        | 1"        |
| CHEMICAL FEED CONNECTION      | AA 1 1/2"  | 1 1/2"  | 1 1/2"    | 1 1/2"  | 1 1/2"  | 1 1/2"  | 1 1/2"  | 1 1/2"  | 1 1/2"  | 1 1/2"  | 1 1/2"  | 1 1/2"  | 1 1/2"  | 1 1/2"  | 1 1/2"     | 1 1/2"     | 1 1/2"     | 1 1/2"  | 1 1/2"  | 1 1/2"  | 1 1/2"    | 1 1/2"    | 1 1/2"    |
| BLOWDOWN FRONT CONNECTION     | AB 1 1/4"  | 1 1/4"  | 1 1/2"    | 1 1/2"  | 1 1/2"  | 1 1/2"  | 1 1/2"  | 2"      | 2"      | 2"      | 2"      | 2"      | 2"      | 2"      | 2"         | 2"         | 2"         | 2"      | 2"      | 2"      | 2"        | 2"        | 2"        |
| BLOWDOWN REAR CONNECTION      | AC 1 1/4"  | 1 1/4"  | 1 1/2"    | 1 1/2"  | 1 1/2"  | 1 1/2"  | 1 1/2"  | 2"      | 2"      | 2"      | 2"      | 2"      | 2"      | 2"      | 2"         | 2"         | 2"         | 2"      | 2"      | 2"      | 2"        | 2"        | 2"        |
| SAFETY VALVE CONNECTION       | AD         |         |           |         |         |         |         |         |         |         |         |         |         |         |            |            |            |         |         |         |           |           |           |
| FLANGED STACK I.D.            | AF 20"     | 20"     | 20"       | 24"     | 24"     | 24"     | 26"     | 26"     | 26"     | 26"     | 26"     | 26"     | 28"     | 28"     | 28"        | 36"        | 36"        | 36"     | 36"     | 36"     | 40"       | 40"       | 40"       |
| CLEAN OUT PORT                | AG #24"    | #24"    | #24"      | #24"    | #24"    | #24"    | #24"    | #24"    | #24"    | #24"    | #24"    | #24"    | #24"    | #24"    | #24"       | #24"       | #24"       | #24"    | #24"    | #24"    | #24"      | #24"      | #24"      |
| SIGHT PORT CONNECTION         | AH 2" PIPE | 2" PIPE | 2" PIPE   | 2" PIPE | 2" PIPE | 2" PIPE | 2" PIPE | 2" PIPE | 2" PIPE | 2" PIPE | 2" PIPE | 2" PIPE | 2" PIPE | 2" PIPE | 2" PIPE    | 2" PIPE    | 2" PIPE    | 2" PIPE | 2" PIPE | 2" PIPE | 2" PIPE   | 2" PIPE   | 2" PIPE   |
| MIN. TUBE REMOVAL FRONT       | AJ 10'-2"  | 12'-4"  | 12'-10"   | 12'-4"  | 13'-10" | 13'-10" | 15'-10" | 15'-10" | 16'-10" | 18'-0"  | 16'-4"  | 18'-4"  | 17'-4"  | 18'-10" | 19'-10"    | 20'-10"    | 22'-10"    | 22'-10" | 24'-2"  | 25'-2"  | 21'-10"   | 23'-0"    | 26'-4"    |

DATA CHART

|                                       |       |       |       |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |         |
|---------------------------------------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|
| GROSS OUTPUT (MBH)                    | 6686  | 8357  | 10028 | 11700  | 13371  | 16714  | 20057  | 23399  | 25071  | 26742  | 30085  | 33428  | 36770  | 40113  | 43456  | 46799  | 50171  | 53484  | 56827  | 60170  | 66855  | 73541  | 83569   |
| STEAM OUTPUT (FROM & 212 °F) (LBS/HR) | 6900  | 8625  | 10350 | 12075  | 13800  | 17250  | 20700  | 24150  | 25875  | 27600  | 31050  | 34500  | 37950  | 41400  | 44850  | 48300  | 51750  | 55200  | 58650  | 62100  | 69000  | 75900  | 86250   |
| RATED INPUT (MBH)                     | 8080  | 10060 | 12050 | 14090  | 16090  | 19970  | 23950  | 27860  | 29840  | 31820  | 35820  | 39780  | 43800  | 47760  | 51750  | 55740  | 59680  | 63670  | 67640  | 71610  | 79710  | 87690  | 99610   |
| FURNACE VOLUME (CuFt)                 | 58.18 | 72.45 | 85.94 | 109.65 | 123.14 | 147.42 | 171    | 186.03 | 196.81 | 211.63 | 223.35 | 253.13 | 296.1  | 321.09 | 387.87 | 408.83 | 450.76 | 487.85 | 518.1  | 548.36 | 551.79 | 592.16 | 672.91  |
| TURNAROUND VOLUME (CuFt)              | 41.08 | 41.08 | 47.73 | 56.43  | 56.43  | 69.04  | 69.04  | 77.82  | 77.82  | 77.82  | 91.38  | 91.38  | 105.07 | 105.07 | 115.06 | 115.06 | 115.06 | 123.99 | 123.99 | 123.99 | 153.53 | 153.53 | 153.53  |
| STEAM VOLUME (CuFt)                   | 55.29 | 65.83 | 74.26 | 64     | 71.09  | 123.16 | 139.54 | 142.7  | 151.07 | 160.84 | 143.83 | 168.92 | 165.15 | 178.51 | 165.01 | 172.85 | 188.53 | 214.58 | 226.48 | 238.38 | 240.02 | 255.65 | 286.9   |
| STEAM RELEASE AREA (SqFt)             | 60.31 | 71.8  | 78.57 | 75.19  | 83.52  | 101.66 | 115.18 | 118.05 | 124.98 | 133.06 | 124.04 | 140.16 | 137.38 | 148.5  | 152.8  | 160.06 | 174.59 | 183.66 | 193.85 | 204.03 | 191.43 | 203.96 | 228.82  |
| GALLONS OF WATER FULL (Gal)           | 1984  | 2388  | 2698  | 2813   | 3144   | 3901   | 4448   | 4708   | 4998   | 5337   | 5221   | 5848   | 5919   | 6421   | 6849   | 7189   | 7867   | 8493   | 8982   | 9472   | 9484   | 10126  | 11413   |
| GALLONS OF WATER @ NWL (Gal)          | 1569  | 1896  | 2143  | 2334   | 2612   | 2980   | 3404   | 3640   | 3868   | 4134   | 4146   | 4585   | 4683   | 5086   | 5615   | 5896   | 6457   | 6888   | 7288   | 7688   | 7688   | 8214   | 9267    |
| POUNDS OF WATER FULL (Lbs)            | 16497 | 19867 | 22445 | 23401  | 26155  | 32452  | 37002  | 39160  | 41575  | 44392  | 43431  | 48644  | 49232  | 53414  | 56974  | 59796  | 65440  | 70645  | 74715  | 78785  | 78877  | 84228  | 94930   |
| POUNDS OF WATER @ NWL (Lbs)           | 13057 | 15772 | 17824 | 19418  | 21732  | 24789  | 28320  | 30281  | 32175  | 34385  | 34483  | 38134  | 38957  | 42308  | 46707  | 49041  | 53710  | 57294  | 60623  | 63953  | 63943  | 68321  | 77079   |
| SHIPPING WEIGHT WITHOUT BURNER (Lbs)  | 24570 | 26570 | 29470 | 31670  | 34370  | 39470  | 39770  | 46870  | 51,100 | 49770  | 53870  | 58210  | 59870  | 64670  | 69220  | 71670  | 76,470 | 82470  | 85970  | 89570  | 94,370 | 99170  | 110,670 |

NOTES:

- VICTORY ENERGY, L.L.C. RESERVES THE RIGHT TO CHANGE DIMENSION DUE TO PRODUCT REVISION OR JOB REQUIREMENTS.
- PRELIMINARY DIMENSIONS AND MAY BE USED FOR LAYOUT ONLY.
- BOILER INSULATED WITH 2"-8# DENSITY MINERAL FIBER INSULATION WITH 22 GAUGE STEEL JACKET.

THIS DESIGN OR DRAWING IS NOT SOLD AND IS SUBJECT TO RECALL. REPRODUCTION OR COPYING RIGHTS ARE RESERVED SOLELY TO VICTORY ENERGY OPERATIONS, L.L.C. THE DRAWING HAS BEEN DELIVERED AND RECEIVED ON THE EXPRESSED CONDITIONS THAT IT IS NOT USED IN ANY WAY AGAINST THE INTERESTS AND BENEFITS OF VICTORY ENERGY OPERATIONS, L.L.C., AND THAT THIS DRAWING AND ALL COPIES OF IT WILL BE RETURNED TO VICTORY ENERGY OPERATIONS, L.L.C. IMMEDIATELY UPON DEMAND, AND THAT ALL INFORMATION DISCLOSED BY THIS DRAWING TO THE HOLDER SHALL BE HELD IN CONFIDENCE.