518 SERIES MICROPHONE STATIONS

GENERAL DESCRIPTION

The 518 Series Digital Microphone Stations introduce a whole new level of sophistication and flexibility with Ethernet connectivity. Each 518 Microphone Station is a network appliance with its own unique IP address, which simplifies its configuration and hardware management. This appliance versatility is attributed to its Ethernet interface for audio and control signals, and the capability of the on-board processor. The 518 appliance operates in conjunction with the IED LAN-based ACS Announcement Control System configured with the Ethernet compatible 510CPU and the 510N complex. A fast Ethernet LAN based network with off-the-shelf switches and structured CAT5e or better cabling is all that is required for the IED LAN-based network system.

Figure 1 - 518VFM-H

All 518 Series microphone stations include a 12 button keypad, a 2 line X 16 character LCD display, and busy and ready LED indicators. The LCD display is used to indicate and prompt the user for information, and to show progress. The red Busy LED indicates when the portion of the system requested is in use. The green Ready LED indicates when the desired portion of the system is available for an action or an announcement.

The options for this series of microphone stations include either an IED handheld or an IED gooseneck microphone. The on-board processor enables the 518 series to perform additional functions such as adjusting the angle and contrast of the LCD display.

The 518 Series Digital Microphone Stations are fully compatible with IEEE 802.3af standard for Power Over Ethernet (POE), allowing the 518 to be powered directly from the POE switch.

The audio output of the 518 is converted to Ethernet packets, and integrated with the control signals on the Ethernet interface.

A test oscillator is built into the microphone station. It can be switched into the audio section by an entry at the control computer. 518 Series microphone stations are not limited. They can, if desired, address any selection or function of which the system with which they are interfaced is capable.

If interfaced with a 500ACS system with a Flight Announcement System (FAS), all the flight announcement information can be entered using the keypad and prompts on the LCD display.

All of the 518 Series microphone stations, except for the desktop and the gooseneck type microphone versions, have the capability of functioning with any combination of up to three external 500HH Hand Held Microphones in addition to the local microphone. The expansion microphones can be located up to 1000' away, interfacing to either a locking door or flush mount expansion plate. When expansion units are used, all microphones in the group operate on a priority basis. When the push-to-talk button is pressed

on one microphone, the other microphones in the group are locked out until that push-to-talk button is released. The push-to-talk buttons on all units in the group are programmed for the same function.

Custom panels can be designed with room layouts or special switch/LED configurations for airport information systems. Consult the factory for more information on these panels and systems.

Flush Mount Microphone Stations

Two different flush mount configurations of the 518 Series microphone stations are available, with three different microphone type options.

The 518VFM is the vertical version which has four microphone inputs and can be used with one to four microphones. One microphone can be connected directly to the microphone station, or, if desired, it can be located remotely, up to 1000' away, by using an expansion station. The additional microphones, if used, are connected to expansion stations which also can be mounted up to 1000' away from the main station.

The electronics are mounted on a Lexan™ faceplate which has a velvet textured front surface. The faceplate fits a standard 6-gang back box. The orientation of the faceplate and back box is vertical.

The 518HFM is electrically and operationally similar to the 518VFM. It differs from the 518VFM in that the orientation of its faceplate and back box is horizontal.

Both versions of the flush mount microphone stations can be supplied with any of the following two microphone options:

500HH Hand held microphone
500G Gooseneck Microphone

Both versions of the 518 Series flush mount microphone stations can be mounted flush to a wall or counter, or surface mounted to a wall or counter.

In flush mounted applications for new construction, all four versions of the 518 Series flush mount microphone stations will mount in a standard 6-gang back box, RACO box #954 or 955 with raised device cover #825, or equivalent. The tabs must be removed as shown in figure 13. IED provides the 518FBB Flush Mount Back Box for this application. See figure 10.

Network Requirements

The IED 518 Series Digital Microphone Stations utilize CobraNet™ technology licensed from Cirrus Logic®.

Live audio on the data network is time sensitive and requires minimal latency through the network to insure uninterrupted audio. The IED 518 Paging Station and CobraNet operate on Layer 2 (DLL Layer) of the OSI Model. This traffic will not operate on a Layer 3 Router or above. VLANs may be required for managing traffic as well as Quality of Service (QoS) and Prioritization. A private network is recommended for most reliable service and minimizing conflicts with other types of data traffic.

Trademark Notes

Lexan is a trademark of the General Electric Company
Cobranet is a trademark of Cirrus Logic, Inc.

SPECIFICATIONS

ELECTRICAL

1. Gain . . . . . 19 dB
2. Total Harmonic Distortion, THD . . . . . < 0.05%
   Input = –15 dBu, f = 200 Hz - 20 kHz, 30k Low Pass Filter
3. Frequency Response . . . . . –1 dB, +0 dB
   20 Hz - 20 kHz, Reference Frequency = +4 dBu
4. Signal-to-Noise Ratio, S/N . . . . . >75 dB
   20 Hz - 20 kHz, referenced to +4 dBu
5. Input Impedance, Z_{IN} . . . . . 50 kΩ
6. Maximum Input Signal . . . . . +15 dBu
7. Compression Threshold set point . . . . . –15 dBu
   Referenced to 2 kHz
8. Attack Time . . . . . 1.5 mSec
9. Release Time
   Input = 30 dB . . . . . 11 Seconds
   Input = 10 dB . . . . . 3 Seconds
10. Compression Ratio 6:1
11. Oscillator Frequency . . . . . 800 Hz
12. Oscillator Output Level . . . . . –11 dBu
13. Normal Output Level . . . . . +5 dBu
    10 dB into Compression
14. Maximum Output Level . . . . . +8 dBu
    30 dB into Compression

POWER CONSUMPTION

1. Power Over Ethernet, POE (IEEE 802.3af)
   With 1 microphone . . . . . 9.1 W
   Additional for each expansion microphone . . . . . 0.1 W
2. Supply Voltage . . . . . +48 VDC

INDICATORS

1. Ready . . . . . 1 Green LED
2. Busy . . . . . 1 Red LED

STANDARDS UTILIZED

1. Full-Duplex Operations 802.3x
2. Fast Ethernet, 100Mb/s 802.3u
   The 518 Series specifically uses 100Base-TX
3. Data Terminal Equipment Power via Media Dependent Interface (POE) . . 802.3af

CONNECTORS (Cable connectors required to interface with microphone stations)

1. Models 518VFM, 518HFM
   Primary . . . . . 8-pin modular connector (RJ-45)
   Secondary . . . . . 8-pin modular connector (RJ-45)

CONNECTING CABLE

All 518 Series Microphone Stations

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1. Digital Audio/Power/Control . . . . . CAT5e or better
   For distances to a maximum of 100 Meters (approximately 300 feet) to the connected switch. Cable installed and tested in accordance with ANSI/TIA/EIA 568B Standards.

All 518 Series Expansion Plates

1. Audio signal . . . . . #22 AWG, stranded twisted pair w/overall shield
   For distances up to approximately 1000 feet, Belden 8451, or equivalent
2. Power and switch . . . . . #22 AWG, stranded twisted pair w/overall shield
   For distances up to approximately 1000 feet, Belden 8451, or equivalent

ENVIRONMENTAL

1. Operating Temperature Range. . . . . (+32 °F - +104 °F) 0 °C - +40 °C
2. Storage Temperature Range . . . . . (–40 °F - +158 °F) –40 °C - +70 °C

Figure 2 - 518HFM-H

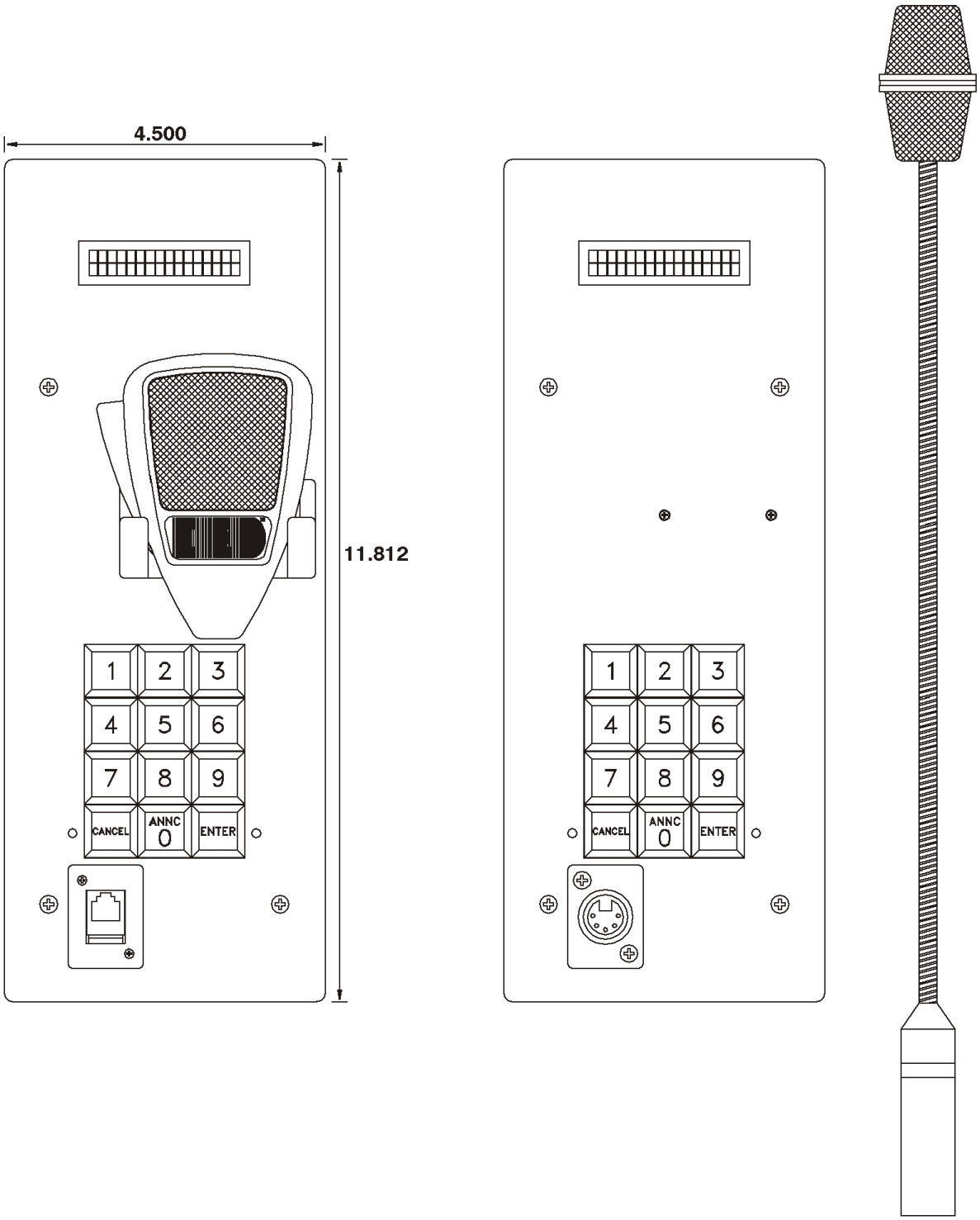

Figure 3 - Vertical Flush Mount Microphone Station
Model 518VFM, all microphone options shown

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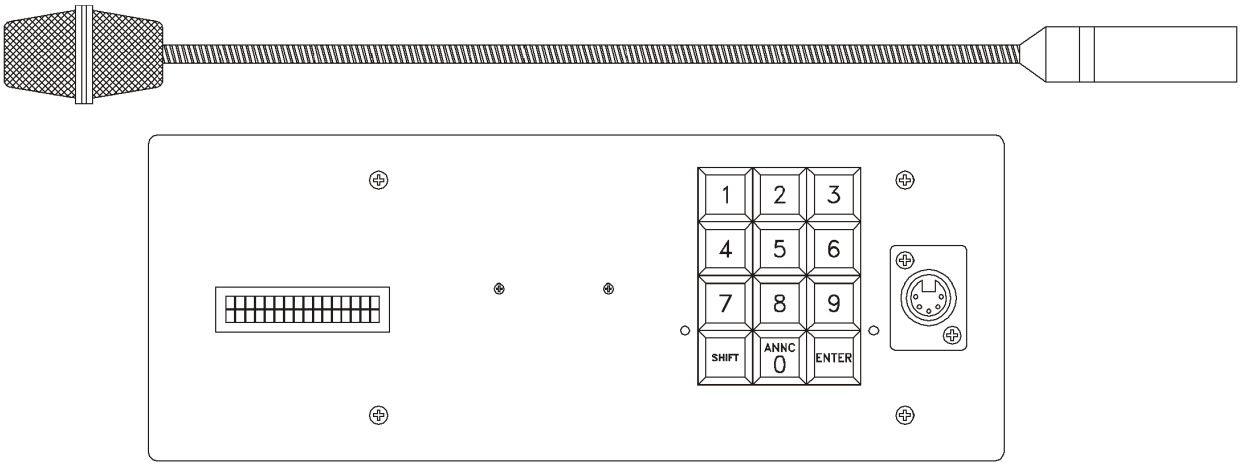
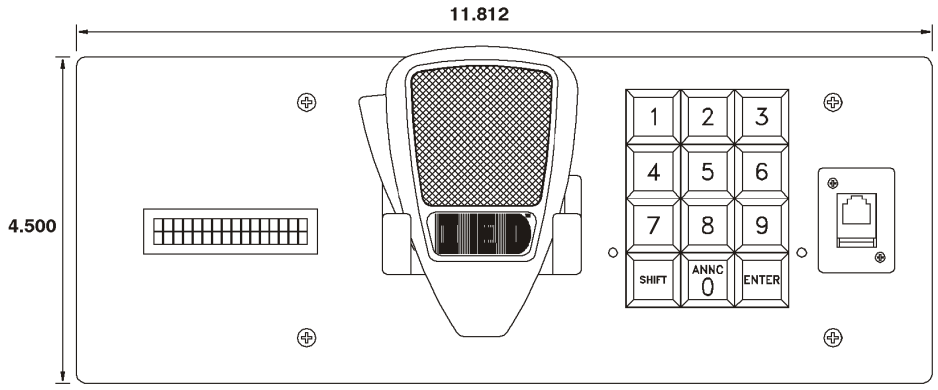


518HFM-G



518HFM-H

Figure 4 - Horizontal Flush Mount Microphone Station
Model 518HFM, all microphone options shown

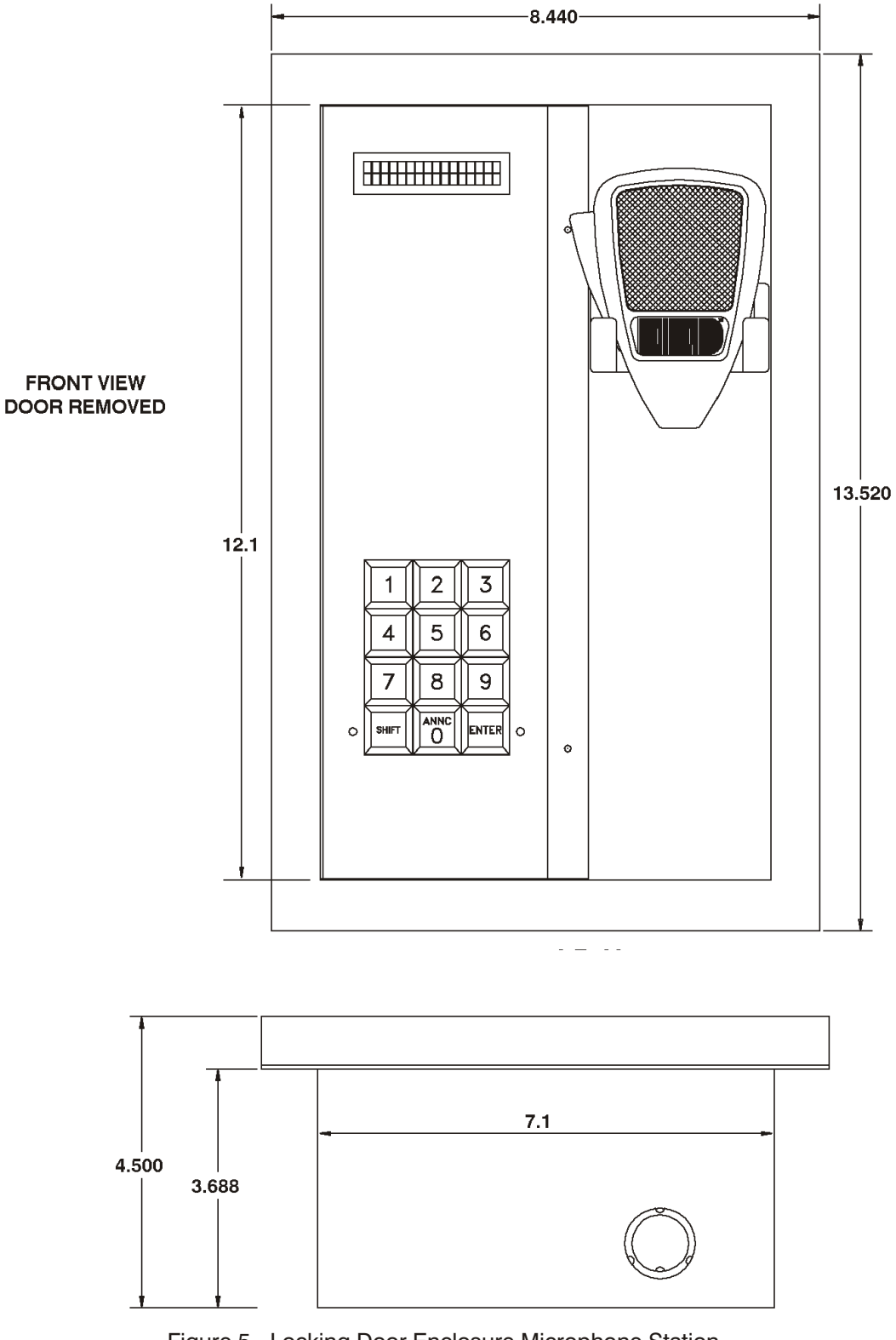
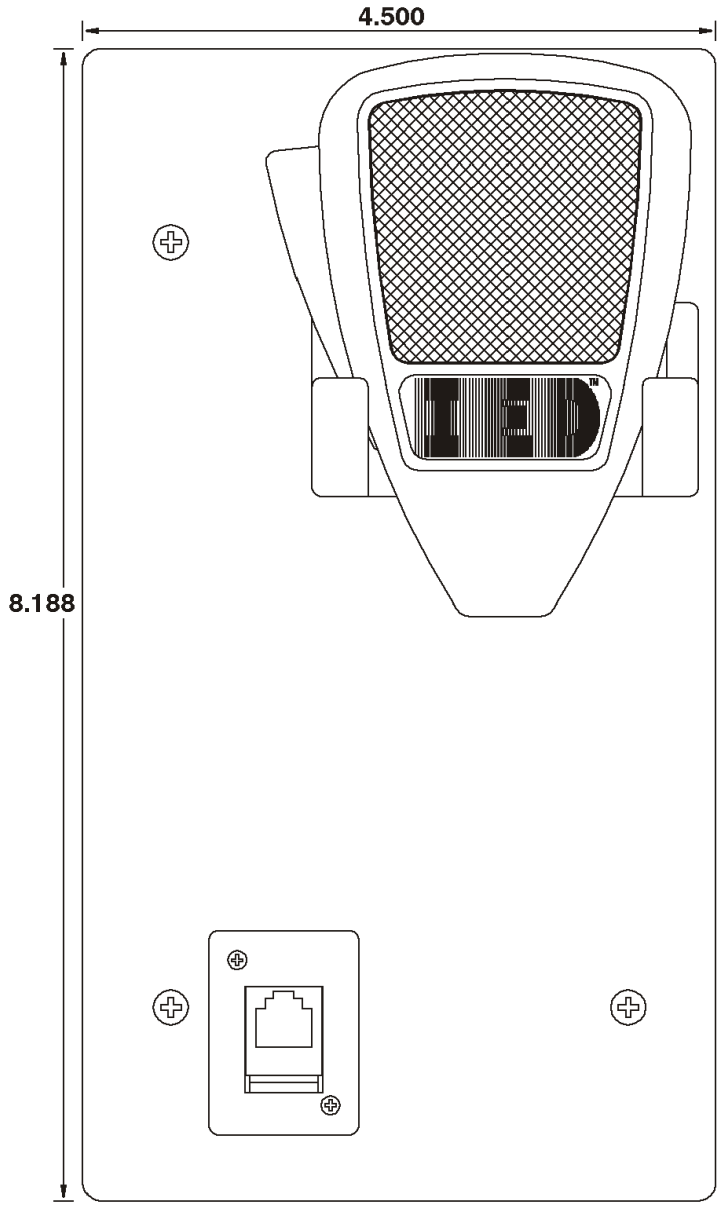


Figure 5 - Locking Door Enclosure Microphone Station
Model 518LD, microphone option shown



500FME-H

Figure 6 - 500FME Flush Mount Expansion Unit

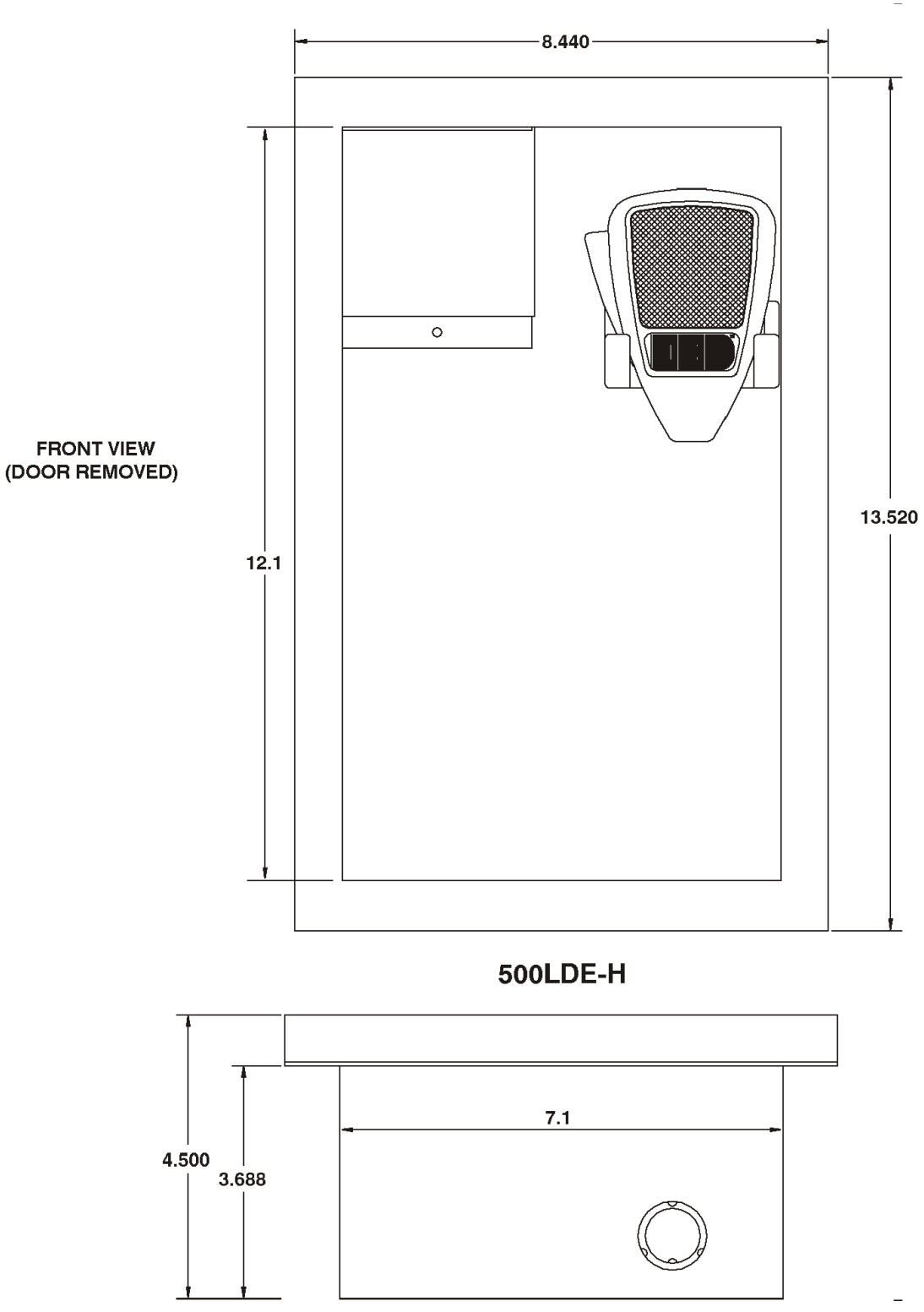


Figure 7 - 500LDE Locking Door Expansion Unit
All microphone options shown

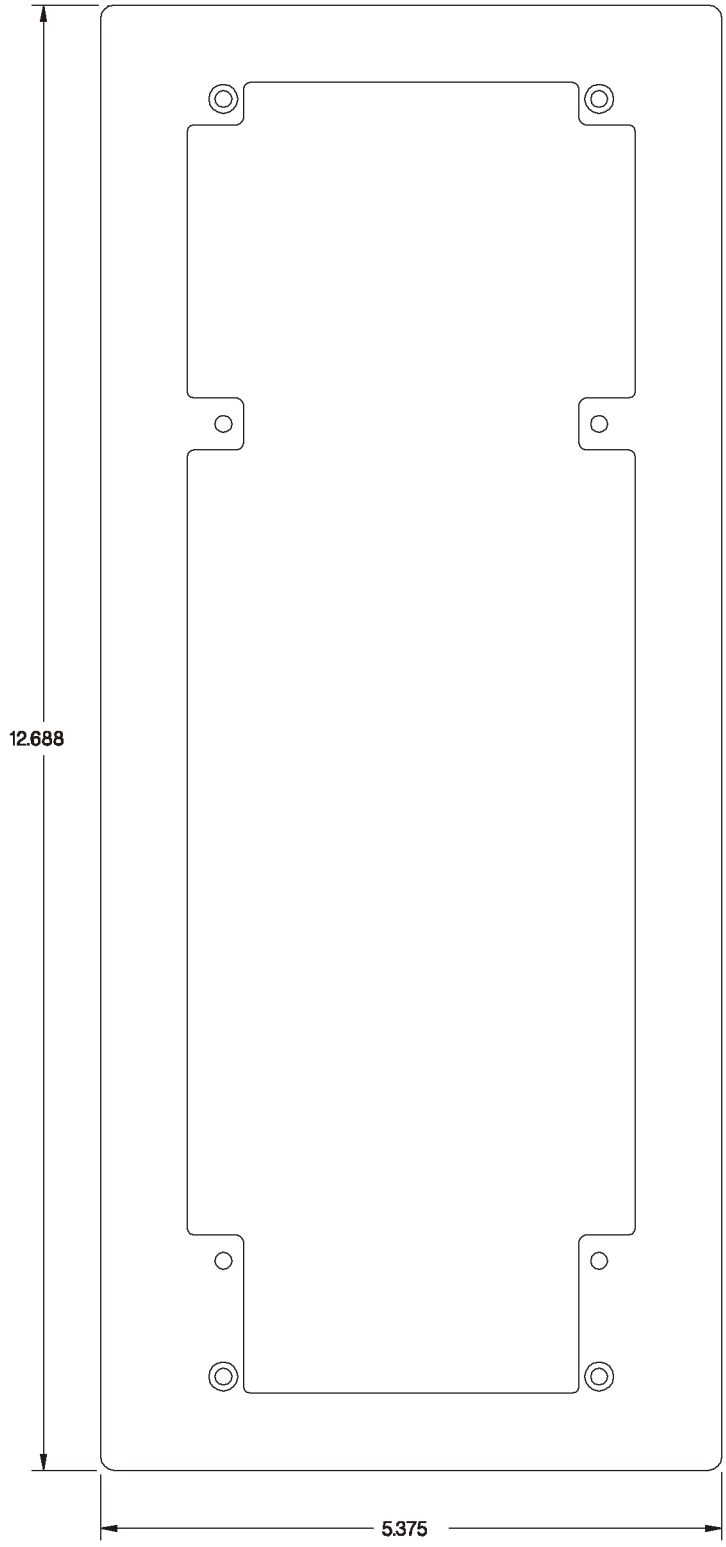


Figure 8 - 508FL Mounting Flange

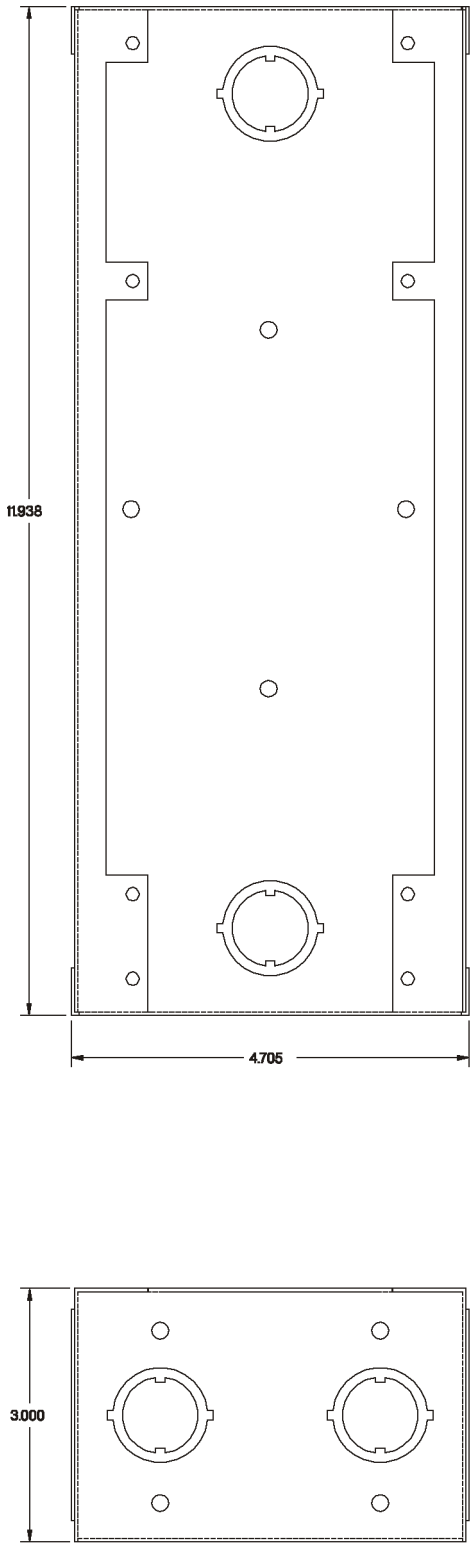


Figure 9 - 508SBB Surface Mount Back Box with Cover

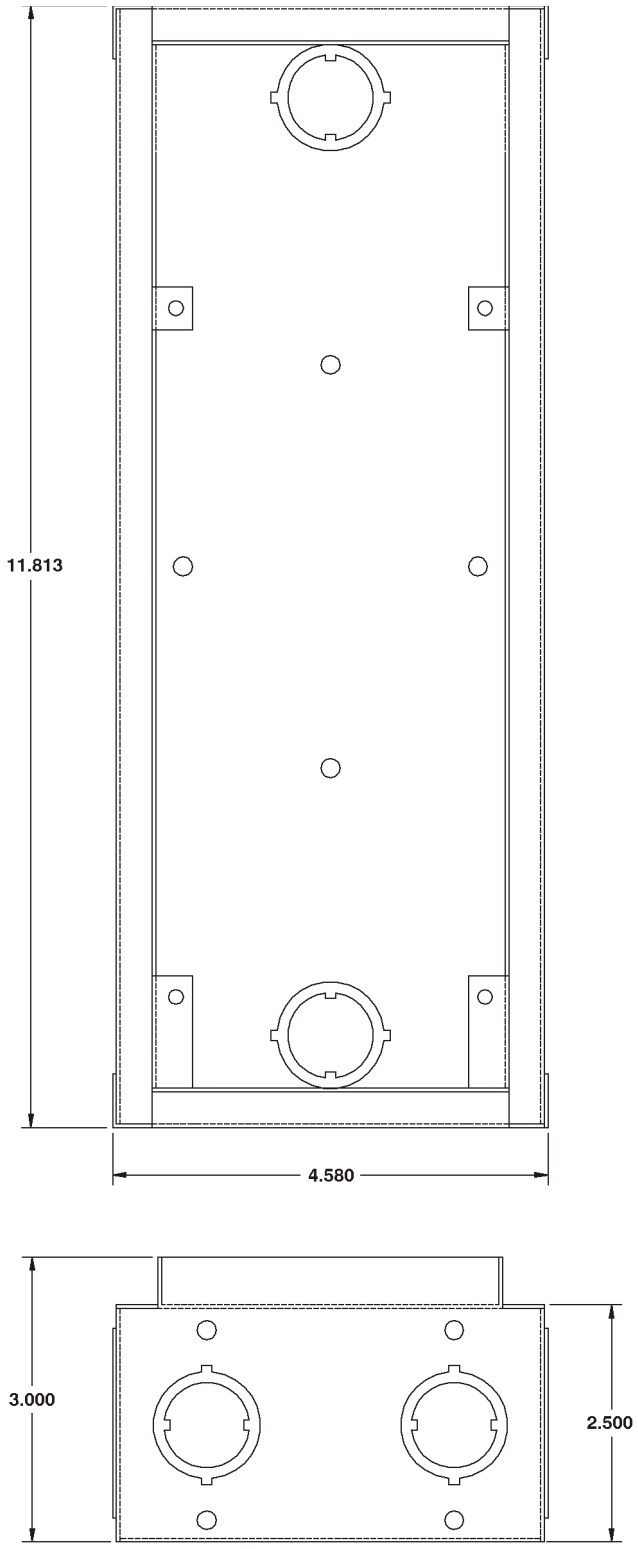


Figure 10 - 508FBB Flush Mount Back Box with Cover

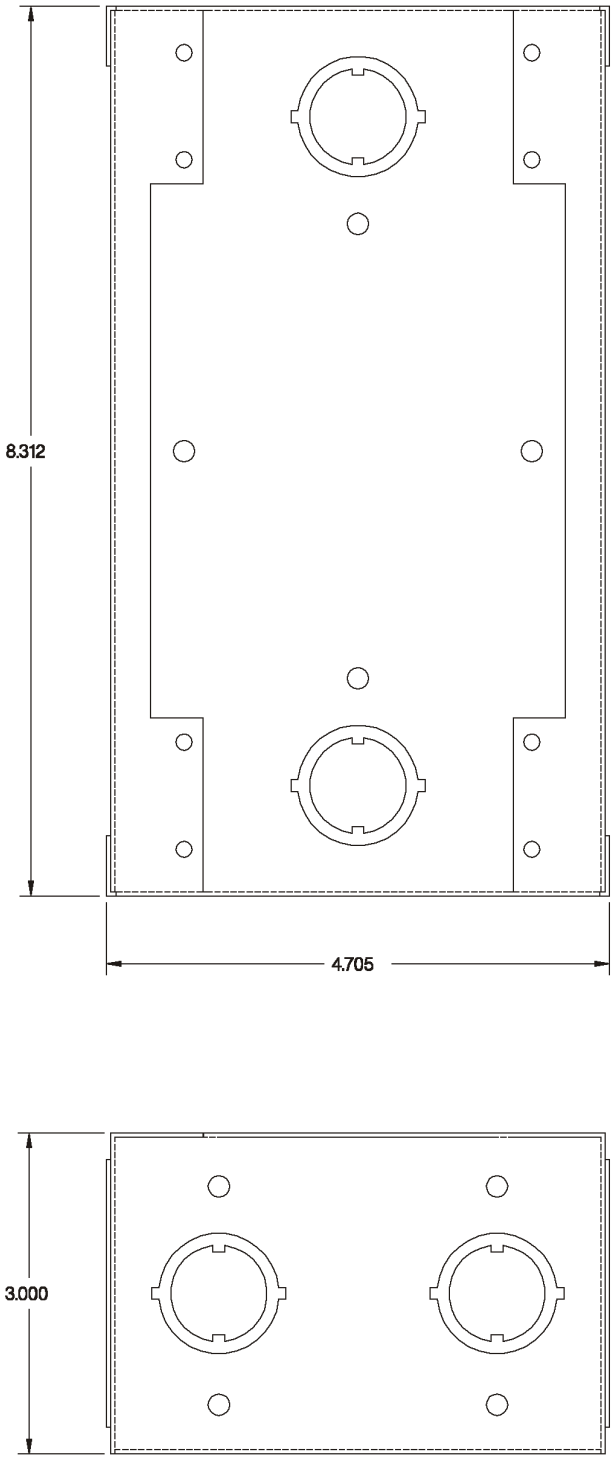


Figure 11 - 500SBB Surface Mount Back Box with Cover

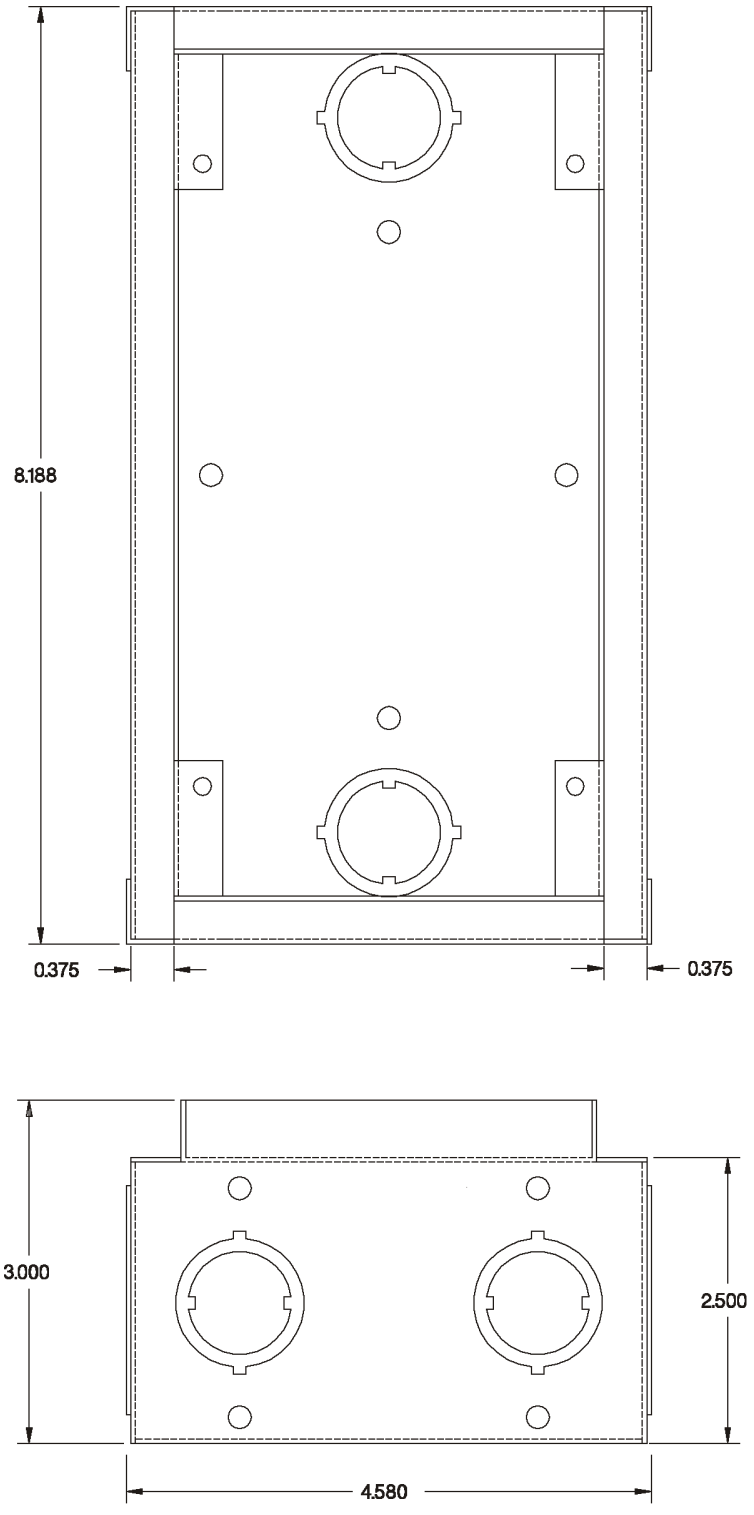


Figure 12 - 500FBB Flush Mount Back Box with Cover

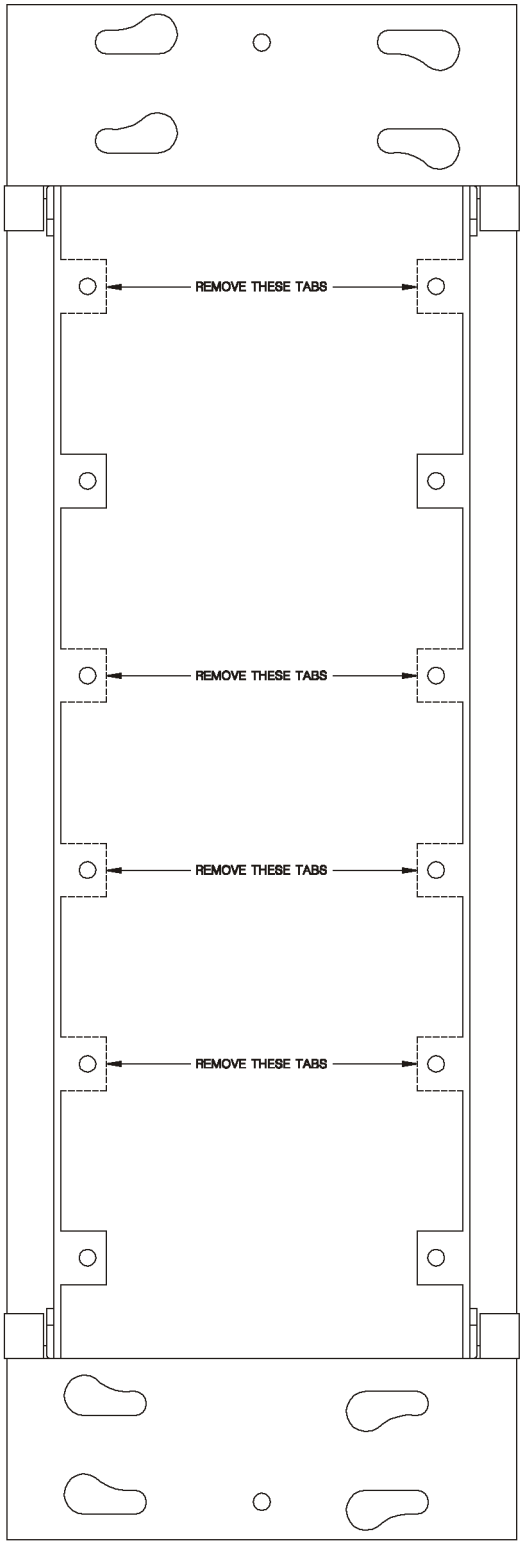


Figure 13 - RACO 6 Gang Back Box with Cover

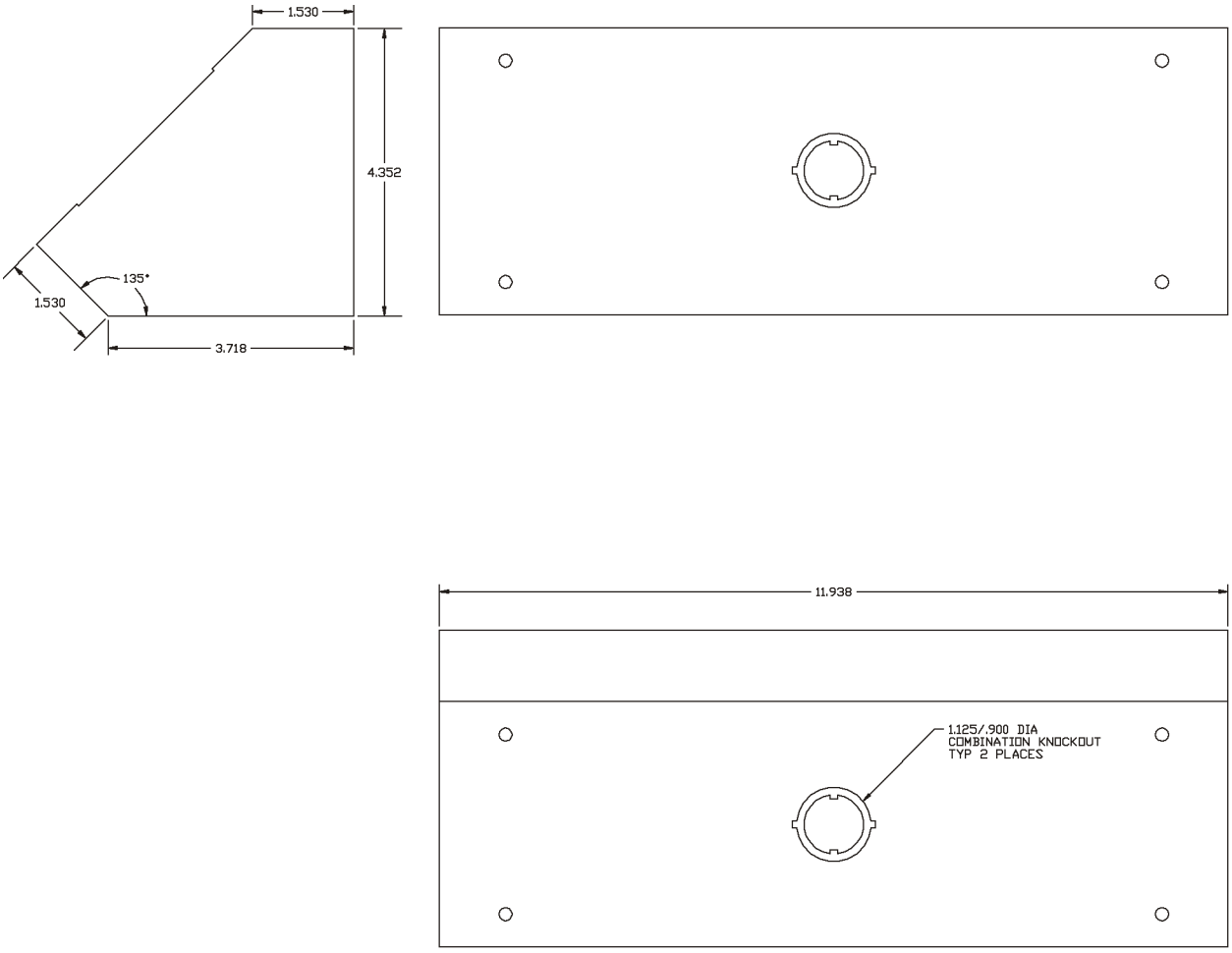


Figure 14 - Horizontal Angled Back Box
508HBB

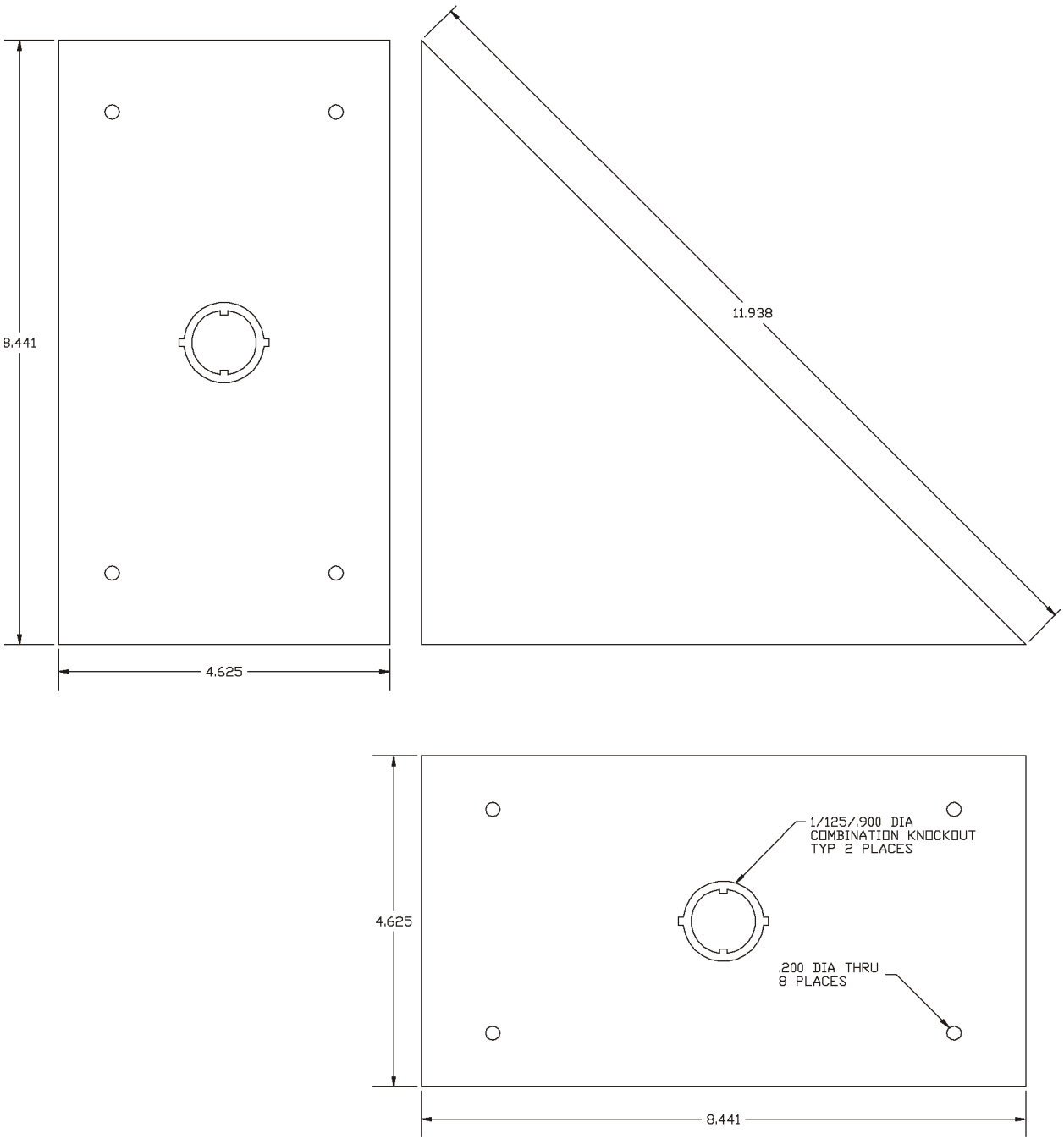


Figure 15 - Vertical Angled Back Box
508VBB

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