

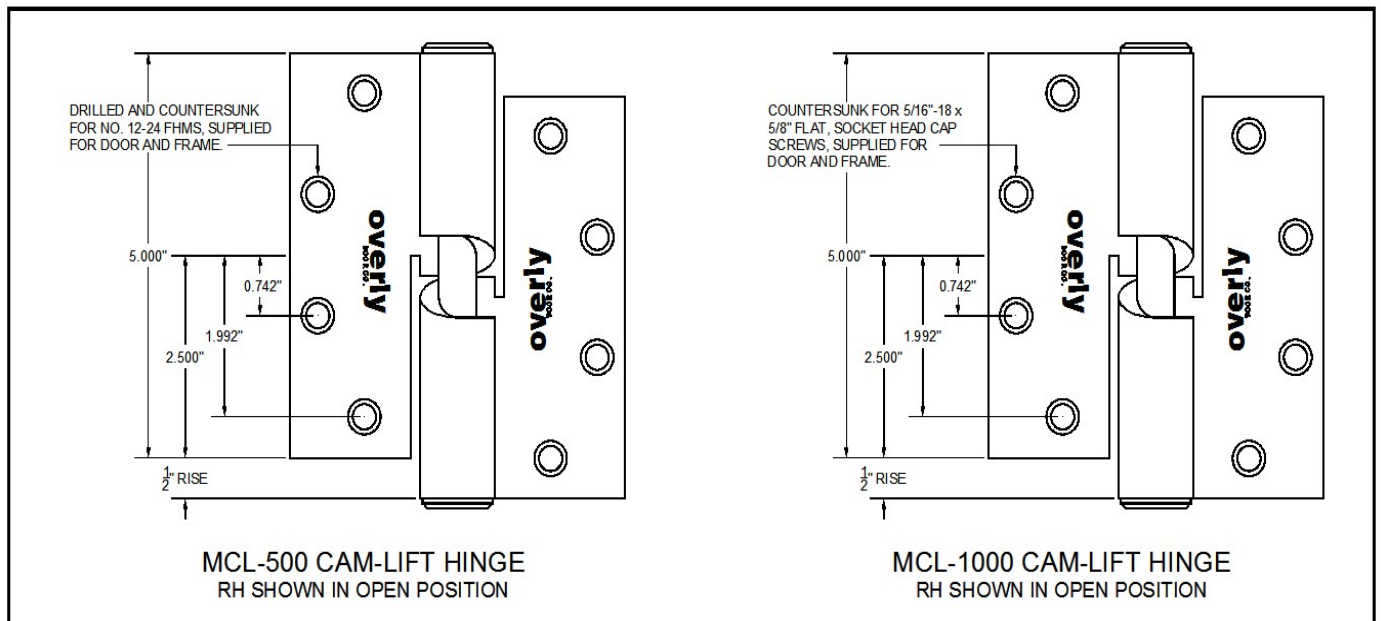
Metal Sound Retardant Door Hardware Information Bulletin

Overly Door Company has been a leading manufacturer and supplier of Sound Retardant Acoustical Doors to the commercial and industrial marketplaces for a number of years. During this time period, we have found many instances where conflicts occur between the standard designs of the Sound Retardant doors and their required usage. The center of these conflicts is often the hardware requirements and operational usage that compromises the acoustical effectiveness of the doors or is incompatible with the design and/or construction of the doors. The following pages try to address many of these conflicts and offer common solutions which will allow the integrity of the unit as well as the acoustical performance to be maximized.

Hinges:

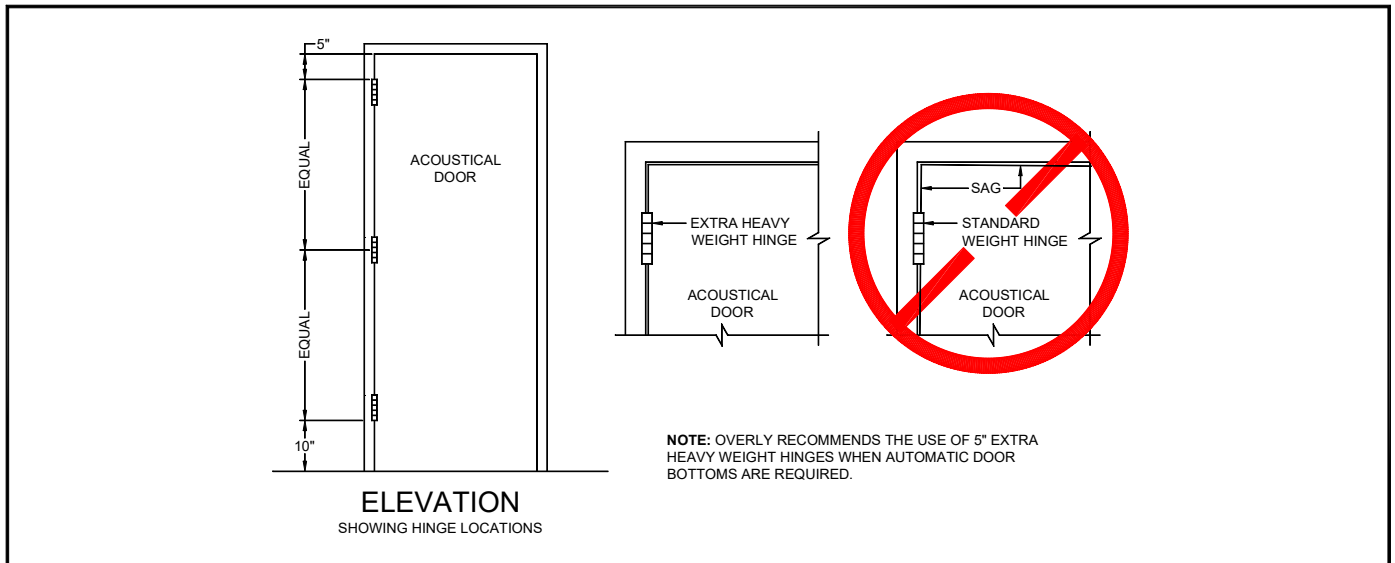
Overly Door Company Sound Retardant Door designs commonly utilize two types of full mortised template hinges; a cam-lift type of proprietary design, designated the MCL 500, and a level swing ball bearing type. The type of hinge required depends on the door bottom sealing system for the designated model.

The Overly MCL 500 cam-lift hinges are used in conjunction with sound retardant door models which require Overly Super "H" door bottoms. Each hinge has a load rating which will accommodate doors weighing up to 500 lbs. These same hinges can be modified to a 1000 lb. capacity when the door design causes the door panel weight to exceed the 500 lb. limit.



Commercially available level swing ball bearing type hinges are required for sound retardant door models which utilize an automatic type door bottom seal. When this type of hinge is required, Overly recommends that 5" extra heavy hinges be specified to accommodate the increased weight of the acoustical door panels.

Standard hinge location/spacing normally provided by Overly is 5"- 10" and equal. Quantities of hinges per leaf include: One (1) hinge is required for every 30" of height for all doors regardless of the hinge type.



Electrified Level Swing Hinges

When electrified hinges are to be utilized on a level swing sound control door system, there are two features that need to be verified prior to using:

Load Bearing - the first item to verify is if the electrified hinge selected to be used is considered a load bearing hinge or not by the hinge manufacturer. If the manufacturer has designated the hinge as load bearing, then it can be utilized at any hinge location, typically one if the intermediate hinges of the unit. If it IS NOT a load bearing as designated by the manufacturer, then the electrified hinge must be utilized as an additional hinge to the quantity required of load bearing hinges. The quantity of load bearing hinges follows the one hinge for every 30" of height requirement.

Fire Ratings - when units are scheduled to be fire rated, verification from the manufacturer is required that the electrified hinge is UL Listed for use on fire doors equal to or greater than the scheduled hourly duration of the opening.

Power Transfers

In lieu of electrified hinges for use on level swing door models, or when cam lift hinges are required for the door bottom sealing system, power transfers, or EPT's, may be utilized.

For level swing doors, any power transfer model may be selected and incorporated into the door and frame. However, when cam lift hinges are required for the door model, the power transfer selected must be able to accommodate the 1/2" rise of the cam lift hinge. Consult Overly or the power transfer manufacturer to verify.

Armored Door Cords

As an option to an electric hinge or power transfer, an armored door cord or loop could be utilized. When units are scheduled to be fire rated, the armored loop must be UL Listed for use on fire doors equal to or greater than the scheduled hourly duration of the unit. An example of one that meets this criteria is the Schlage 788/789 armored Door Cord.

Closers:

Note: When cam-lift hinges are used in conjunction with Overly's compression type door bottom, the hinges will not by themselves close and latch the door. When no closers are present, the door will require manual closing and latching. The reason for this is the fact that the action of the cam-lift hinge is one in which the door is lifted as it is opened and drops during the closing motion. During the last 10 degrees of closing swing, the door bottom begins to contact the sill, which creates friction. Depending on how tightly the door bottom is adjusted, in combination with the type of sealing surface at the sill, dictates the amount of friction that must be overcome. Also, the seal on the jambs, whether compression or magnetic, will affect how easily the door will latch, depending on how evenly they are adjusted around the perimeter.

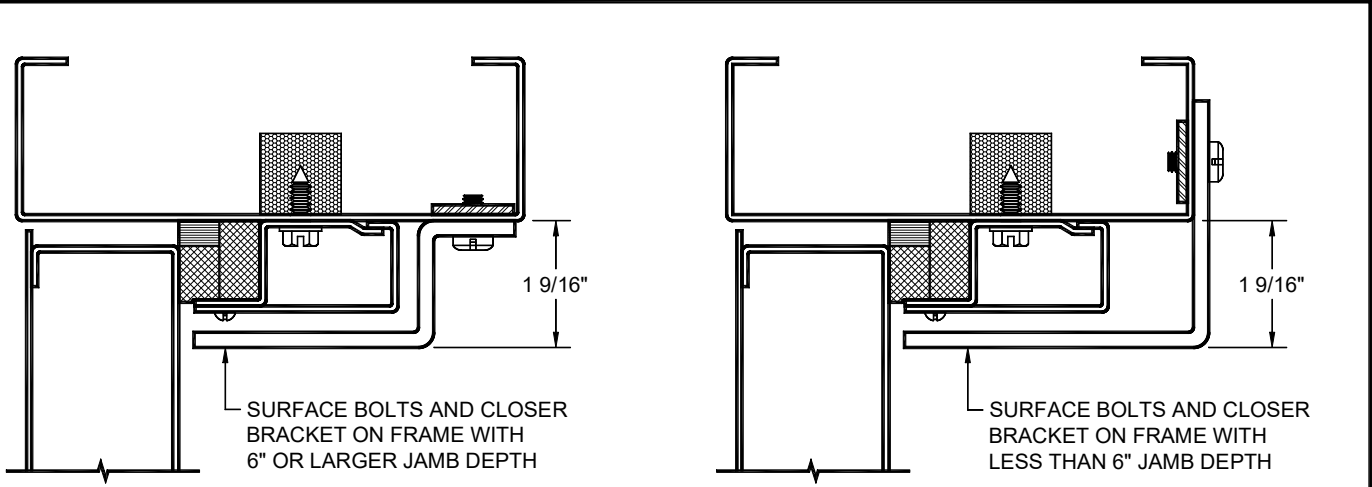
If a closer is going to be utilized to close and latch the door automatically, the following are items to watch out and be prepared for, depending on the specific type of closer chosen.

Absolutely no slide track closer arms can be used with cam-lift hinges. Even though a closer series / model number is acceptable, a slide track option may exist but not acceptable for usage. Closers with EDA or cush (rigid type arms) should not be used with cam-lift hinges. Check with the closer manufacturer for the ability of the arm to accommodate the 1/2" rise of the cam lift.

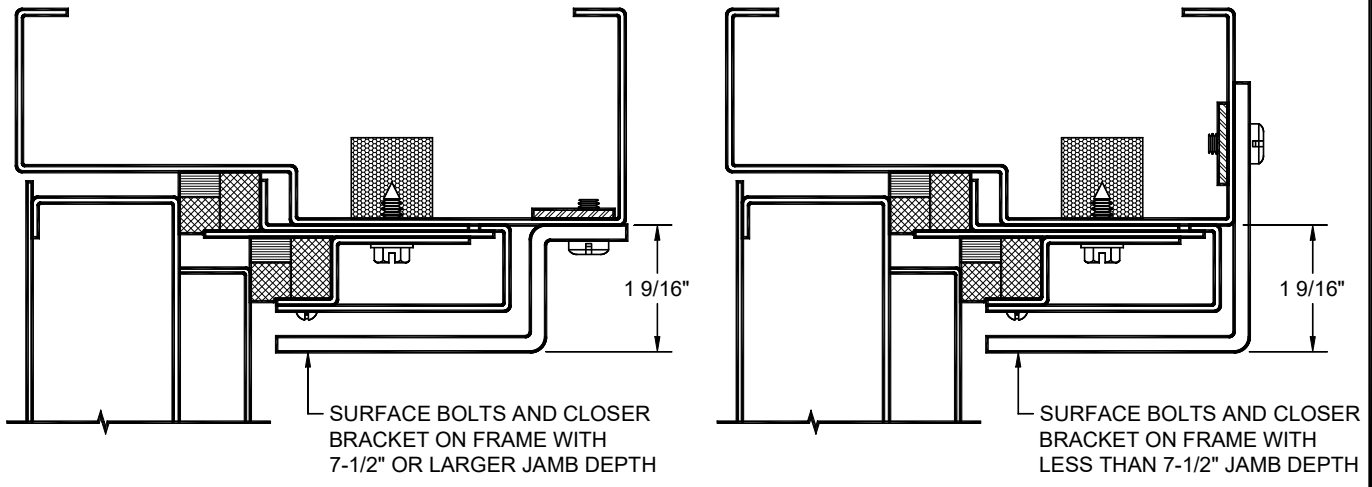
- A. Surface Mounted Closers:** When the Sound Retardant Door model selected requires MCL-500 cam lift hinges, the closers selected must have arms equipped with enough arm play to accommodate the required up/down movement created by the cam lift hinges. Overly recommends the Norton 1600 or 7500 series or the LCN 4000 series.
- B. Parallel Arm Closers:** Overly supplies a Z- or L-shaped bracket to mount the closer arm. The type of bracket supplied is based on the jamb depth of the frame. In all cases, the **Closer arm must never be mounted to retainer covers!**

NOTE: Overly only supplies closer brackets for reverse bevel doors. If closer brackets are required for regular swinging doors, customer must specify this when placing the order.

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HEAD SECTIONS
 SHOWING SURFACE BOLT AND CLOSER BRACKET
 ON DOORS WITH SINGLE GASKETING SYSTEMS



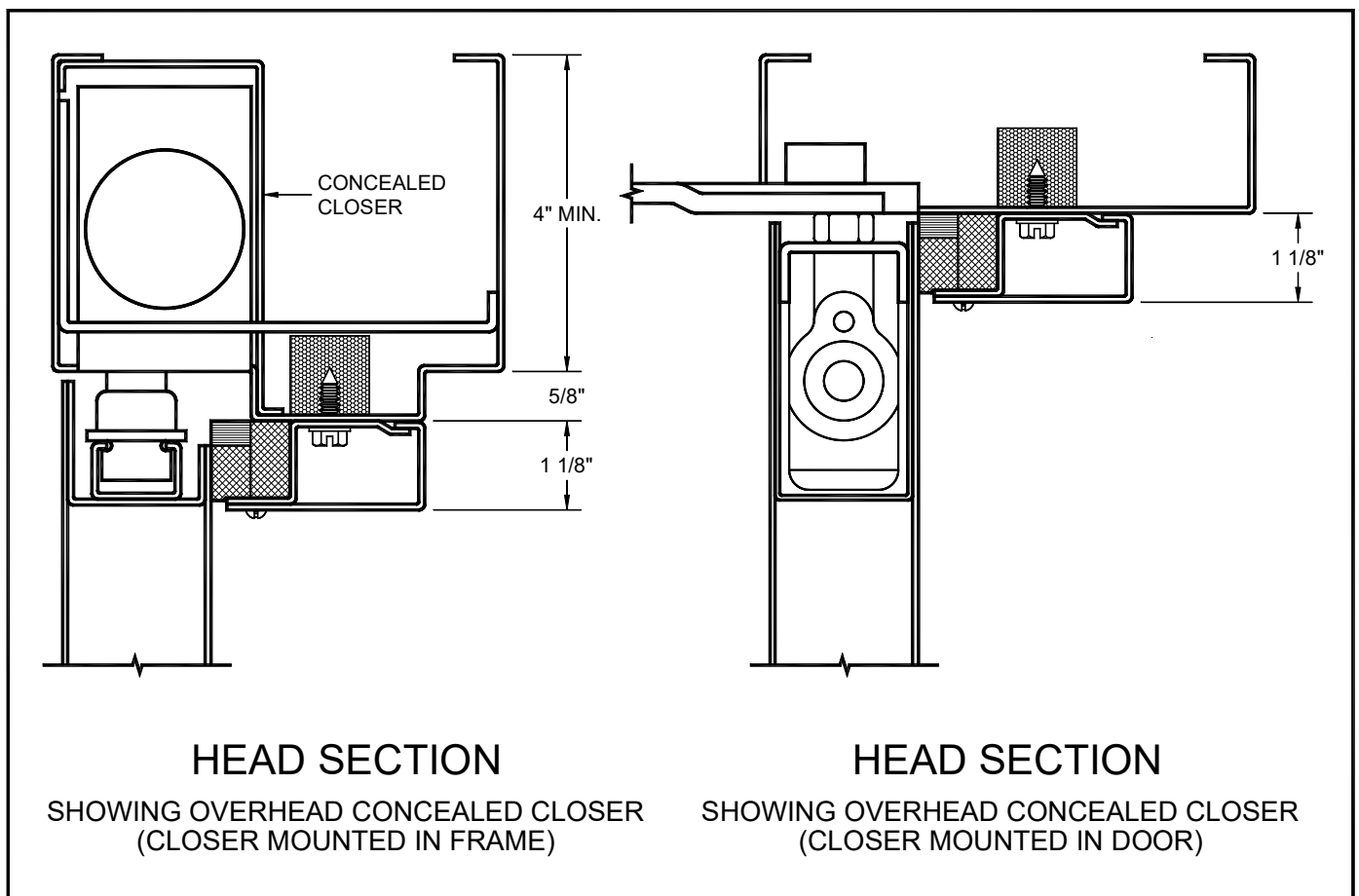
HEAD SECTIONS
 SHOWING SURFACE BOLT AND CLOSER BRACKET
 ON DOORS WITH DUAL GASKETING SYSTEMS

C. Floor Closers: Floor closers require the use of an arm which must mount to the bottom of the door. This precludes the ability of Overly to utilize its standard mortise door bottoms. Special considerations must be taken in order to provide adequate operation and performance. Overly does not recommend using this type of closer on its acoustical doors.

D. Concealed Overhead Closers/Hold-opens: Concealed overhead closers/hold-opens must be concealed in the frame and/or the door. Overly does not recommend the use of this type of device in either orientation to be used on its sound retardant doors. Many of the concealed closers which mount in the head of the frame interfere with the sound seal gasketing system. Overly will not certify an STC rating when these types of closers are used.

For doors swinging on Cam-Lift hinges that need to incorporate a slide track hold open/door stop, Overly recommends the ABH 9000CL surface mounted slide track device. It is specifically designed to be used in conjunction with Cam-Lift hinges. If looking for another brand of device, verify it will accommodate the 1/2" rise of the Cam-Lift hinges.

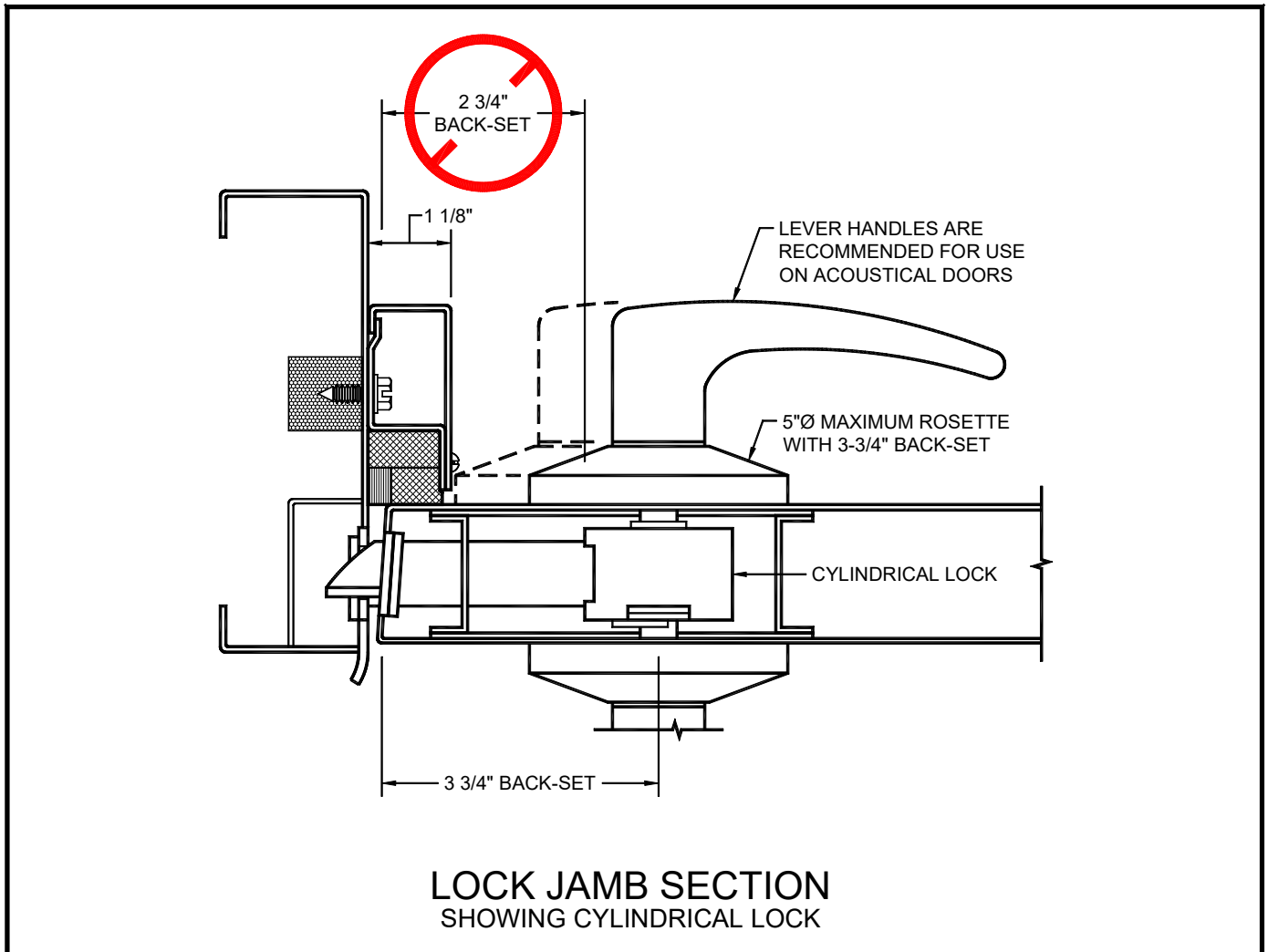
For those devices concealed in the door, which require cutouts that do not permit a continuous seal to be obtained, Overly provides a stop on the head of the frame to assure that the gaskets provide a continuous seal.



Locks:

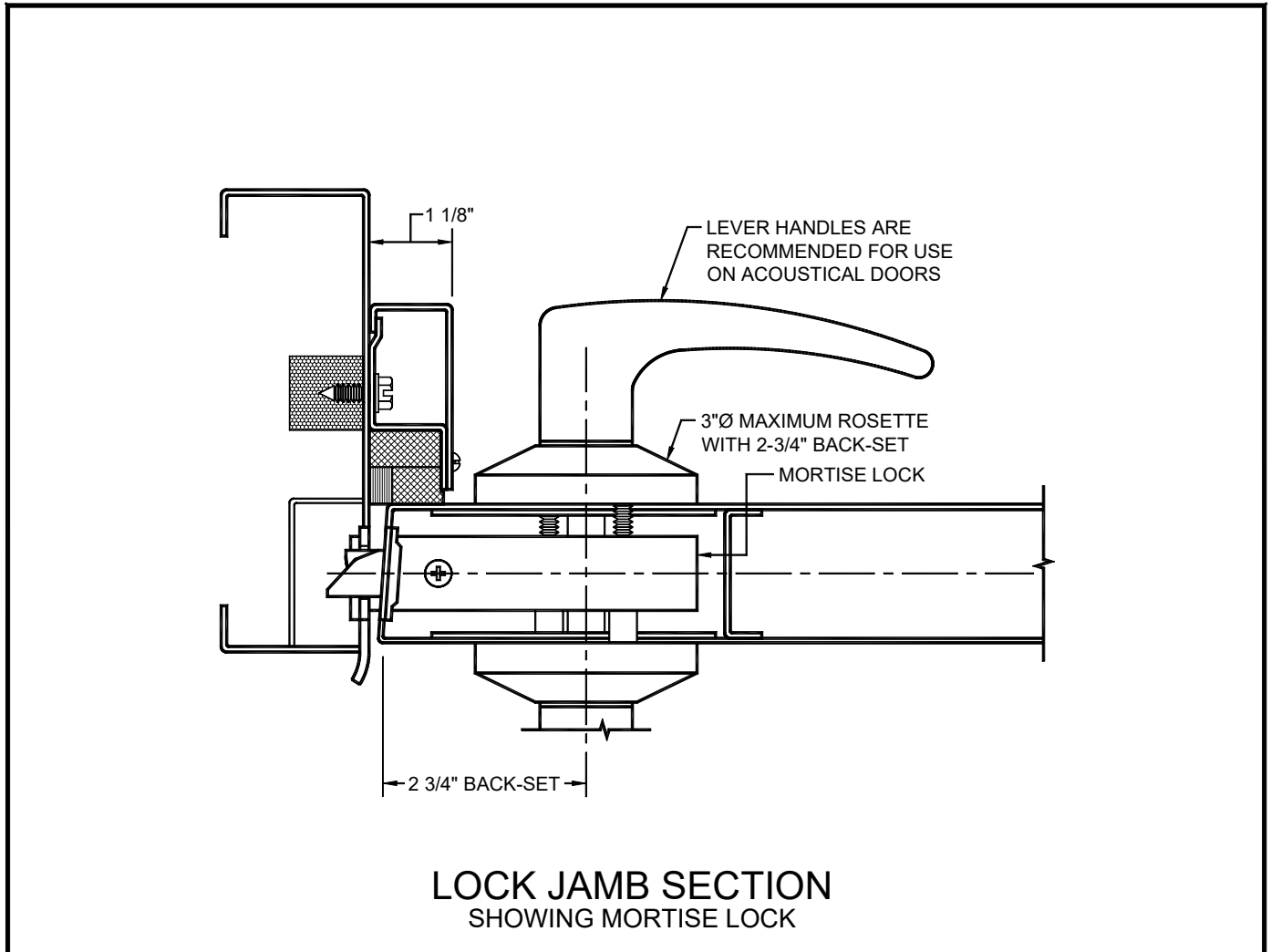
- A. Cylindrical Locks:** All of Overly's perimeter seal cover arrangements for both its compression and magnetic single row gasketing systems are 1-1/8" high. Most manufacturers of cylindrical locksets have rose diameters which, when a 2-3/4" backset is used, will interfere with the seal covers and not allow the door to close. Because of this situation, Overly recommends that a 3-3/4" backset be used on single door openings utilizing a cylindrical lock. A 2-3/4" backset is permissible for the active leaf of a pair of doors. Overly also recommends the use of lever handles instead of knobs on all doors that use cylindrical locks.

Note: For single doors, if 2-3/4" backsets must be used, the rose diameter cannot exceed 3". For 3-3/4" backsets, the maximum rose diameter can be 5".



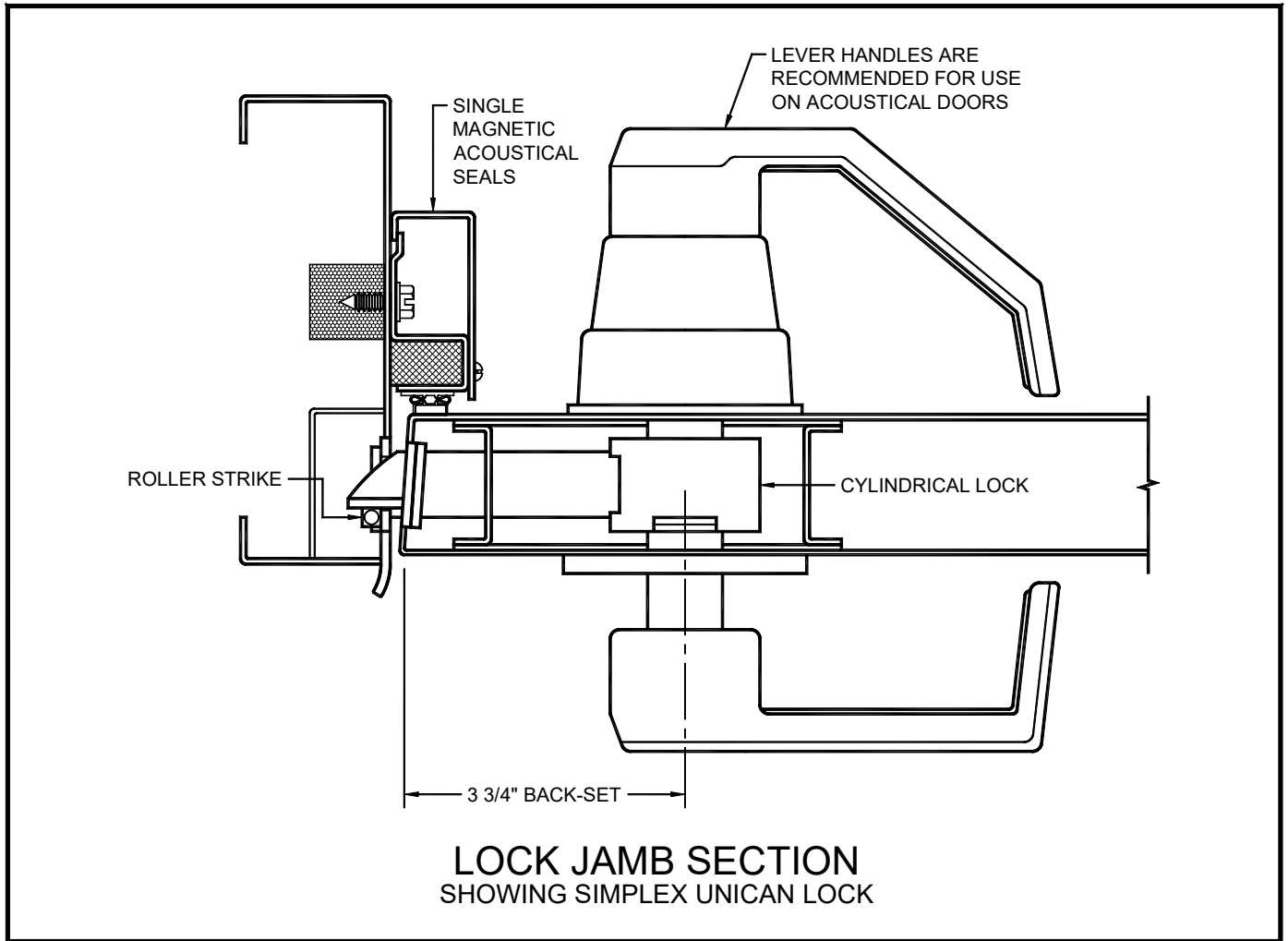
- B. Mortise Locks:** All mortise locks are only available in a 2-3/4" backset. Due to the fact that our perimeter seal covers are 1-1/8" high (see explanation in cylindrical lock section), we recommend that lever handles always be used to avoid the "knuckle buster" situation. As in cylindrical locks, due to the 2-3/4" backset, the maximum rose diameter cannot exceed 3".

Lock functions that require latch retraction by key should be avoided with all single and dual compression seal models. To accommodate this functionality, choose a model that utilizes single or dual magnetic seals.

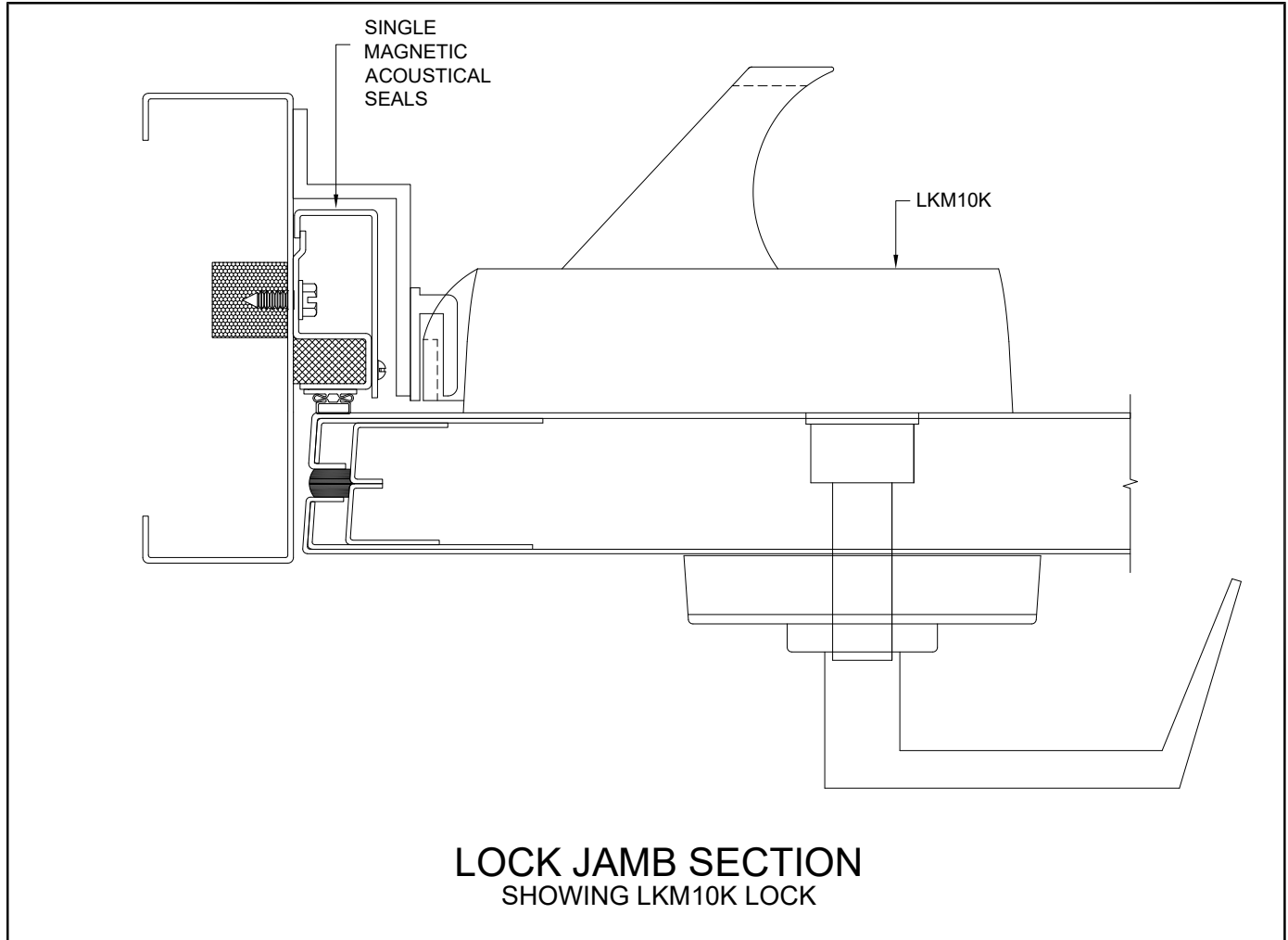


- C. Unit Locks:** Overly does not recommend the use of any unit type lock under any circumstances. These locks require the entire edge of the door to be notched out and the escutcheon trim interferes with the 1-1/8" high perimeter seals. This prevents the seal from contacting the door. We cannot certify any acoustical ratings when this type of lock is used.

D. **(Kaba Ilco) Simplex Unican L1000:** This type of cypher lock is very sensitive. If this type of lock must be used, Overly recommends that a sound retardant door equipped with magnetic seals be specified along with a roller strike and a 3-3/4" backset latch bolt provided with the lock.



- E. **LKM10K:** This type of lock is very sensitive. If this type of lock must be used, Overly recommends that a sound retardant door equipped with magnetic seals be specified. The manufacturers' recommended location is 43" Centerline above finished floor.

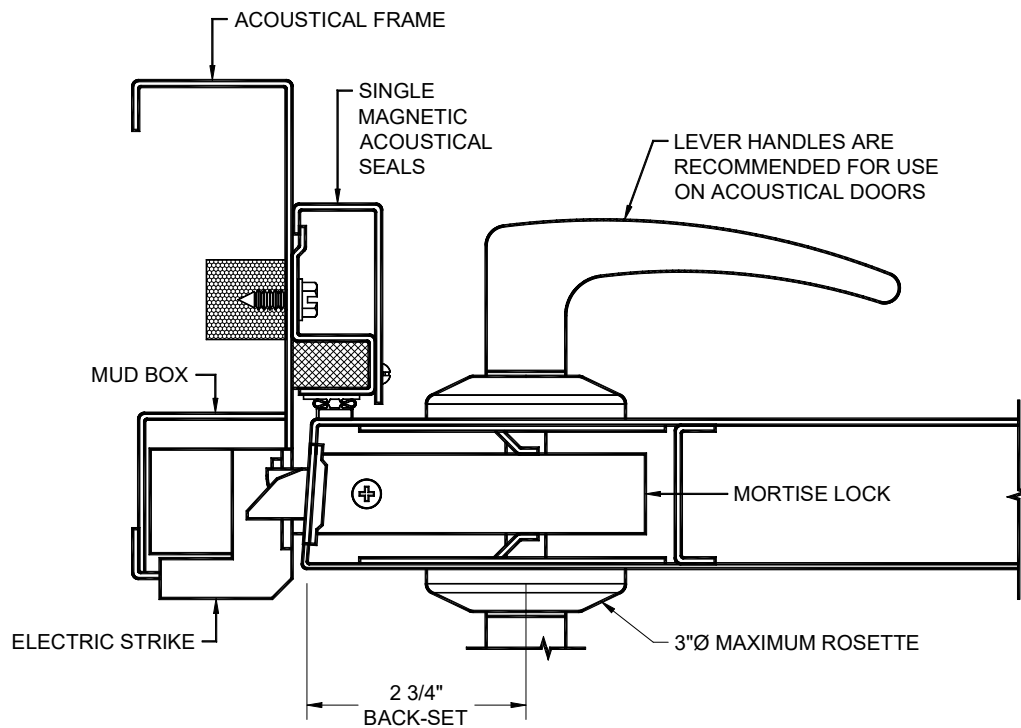


Electric Strikes:

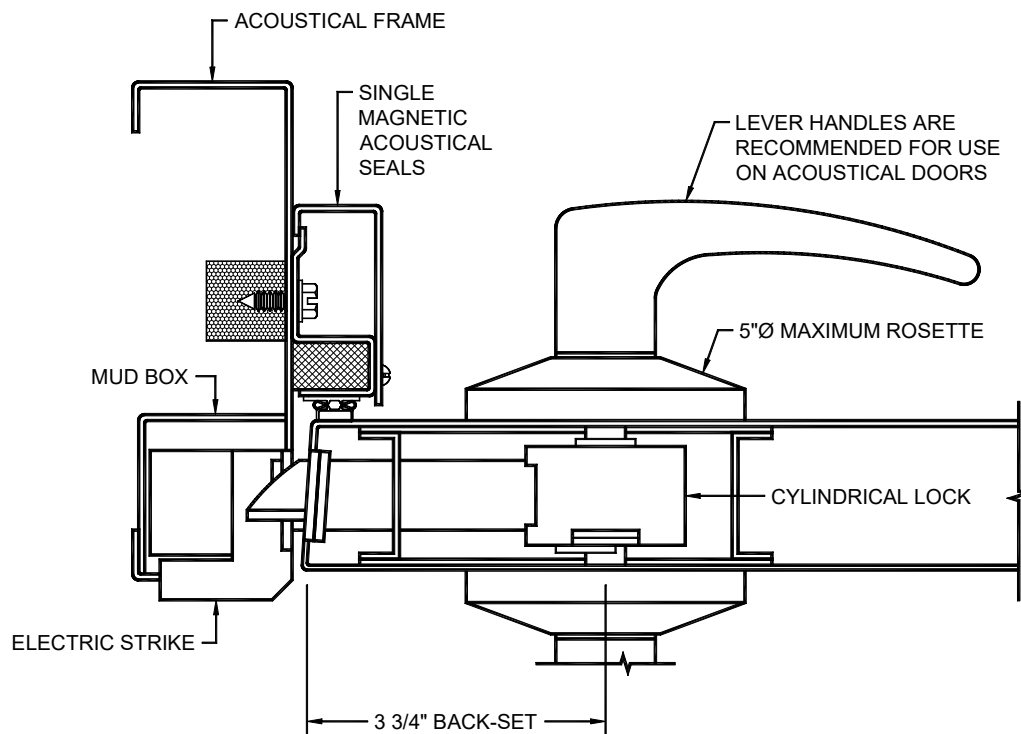
Electric Strikes for single swing openings: Overly recommends that if electric strikes must be used, sound retardant doors equipped with magnetic seals be specified. Most electric strikes are too sensitive and bind up when used with compression type seals. The compression seals create pressure between the latch bolt and the gate of the electric strike and will not allow the gate to activate and retract properly.

Note: As an option, Overly recommends that if controlled access is required and compression seals must be used a Securitron UNL (Cylindrical Lock) & MUNL (Mortise Lock) may be used with compression seals because the latch is pushed by a motor that has enough force to disengage latch bolt under normal seal pressure or electric locks with manual latch bolt retraction be specified. **No electric latch retraction can be used!**

Exception: When working with Corbin Russwin ML2000 and BEST Series 2 Mortise Locks the dead latch needs to be removed. With both of these locks the dead latch is not retracted by the lever set when you are exiting the secure area this means that depending on the door gap the dead latch may hang up on the stainless steel case of the MUNL.



LOCK JAMB SECTION
SHOWING MORTISE LOCK AND ELECTRIC STRIKE



LOCK JAMB SECTION
SHOWING CYLINDRICAL LOCK AND ELECTRIC STRIKE

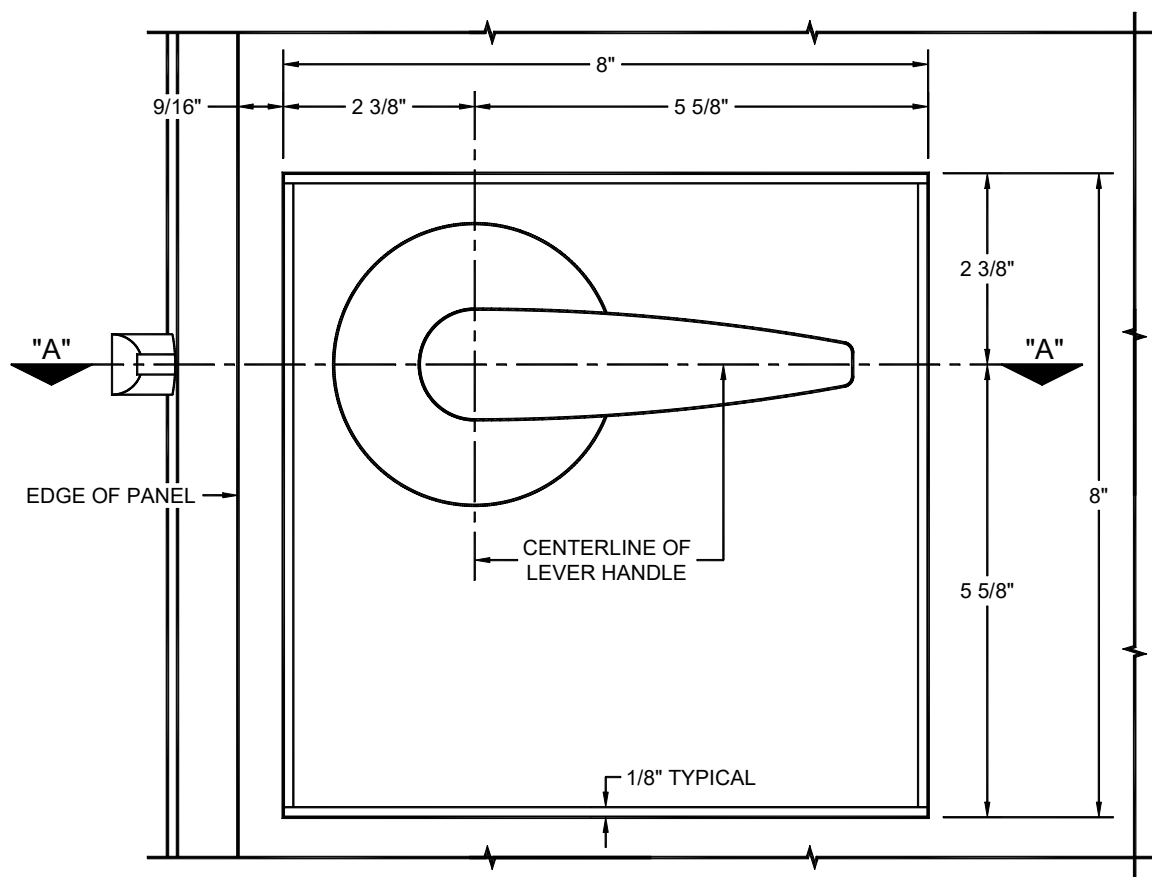
Electric Strikes for inactive leaf of Pairs: If an electric strike is required for the inactive leaf of a pair, Overly recommends a closed backed electric strike that does not require a cutout through both door skins. The use of our overlapping astragal seal will be interfered with when this type of electric strike is used. Overly recommends the use of closed back electric strikes specifically designed for use in the inactive leaf, which require preparation similar to a Von Duprin 6223 or Securitron UNL/MUNL.

Applied Panel Doors with Dual Sealing Systems:

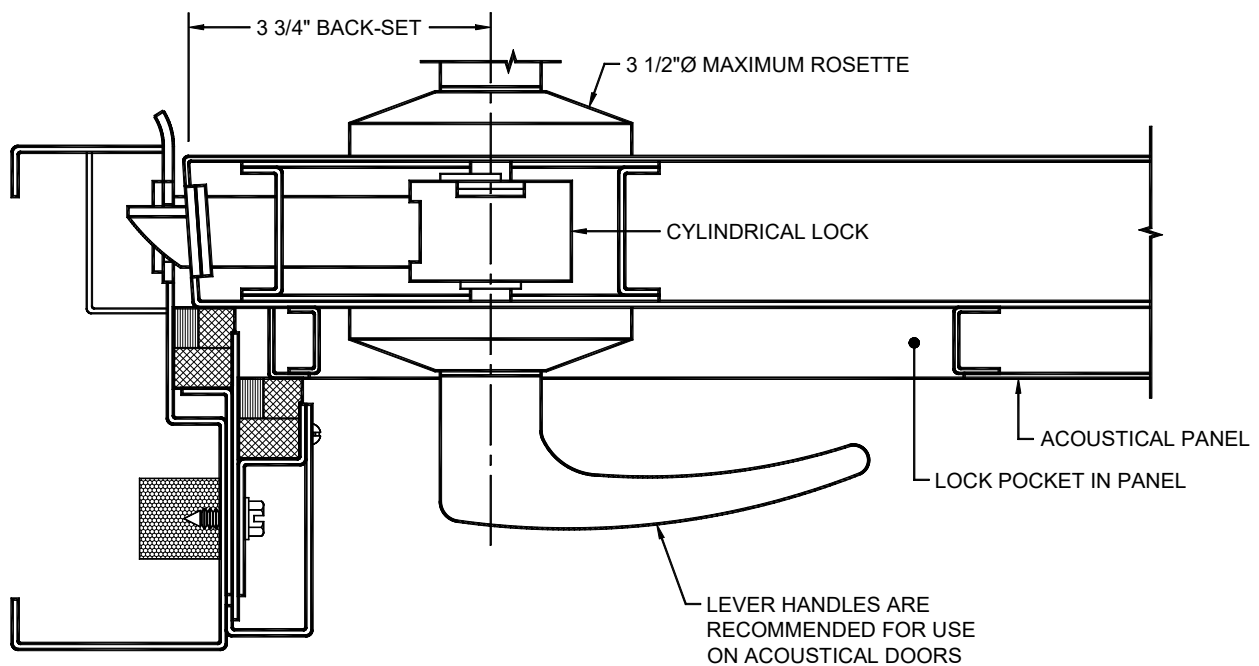
When dual compression or magnetic seals are required, Overly takes its standard doors and applies a panel to the gasket side of the door to accommodate the dual seals. The addition of this applied panel places some restrictions and considerations for locks/latch sets that can be used. Please choose a function that locks/unlocks lever handles for those acoustical door models that utilize compression seals. Latchbolt retraction by key is not recommended as it may be difficult to turn key.

- A. Cylindrical locks:** If cylindrical locks are to be used, a 3-3/4" or more backset is **required**. A pocket will be placed in the panel to allow the use of a standard lock designed to fit a 1-7/8" to 2-1/8" thick door. No special modifications to the hardware would be required. Maximum rose size 4". For pairs of applied panel doors, 5" backset is required to accommodate integral acoustical astragal.

NOTE: If lock pocket in panel is not desired, a cylindrical lock such as the Schlage ND Series can be ordered with off center extension of the lock. Note this type of lock extension is special and may require longer lead time and increased cost. Consult your hardware supplier for availability and lead time.

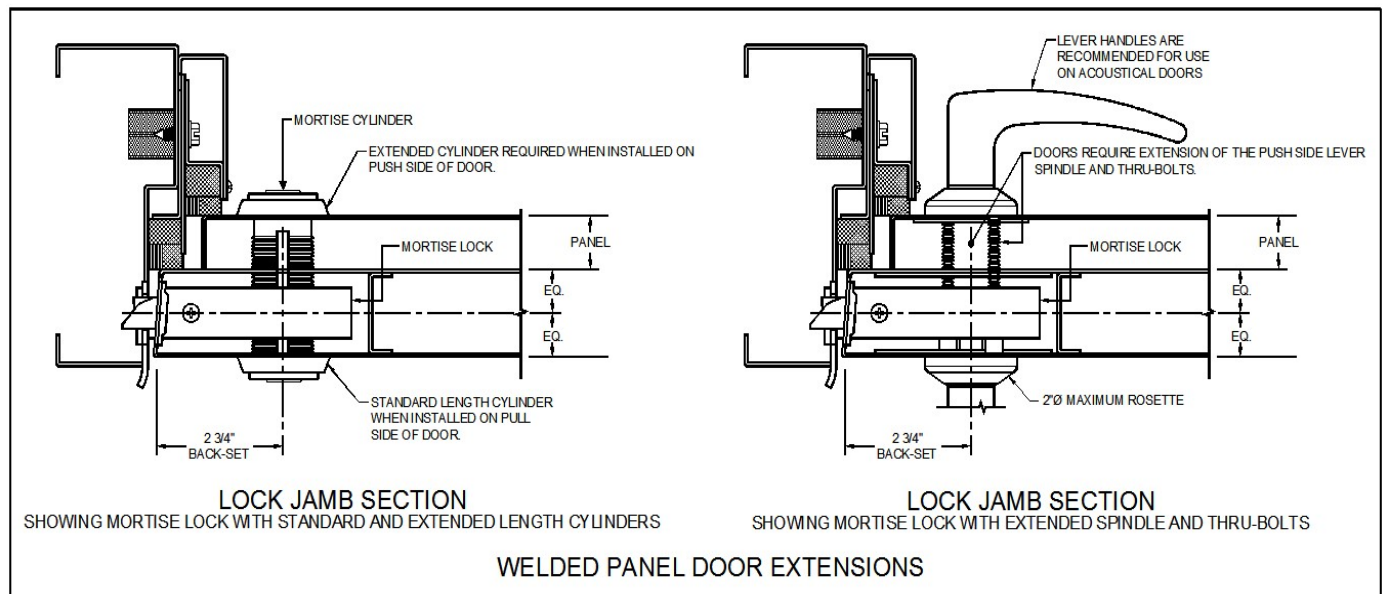
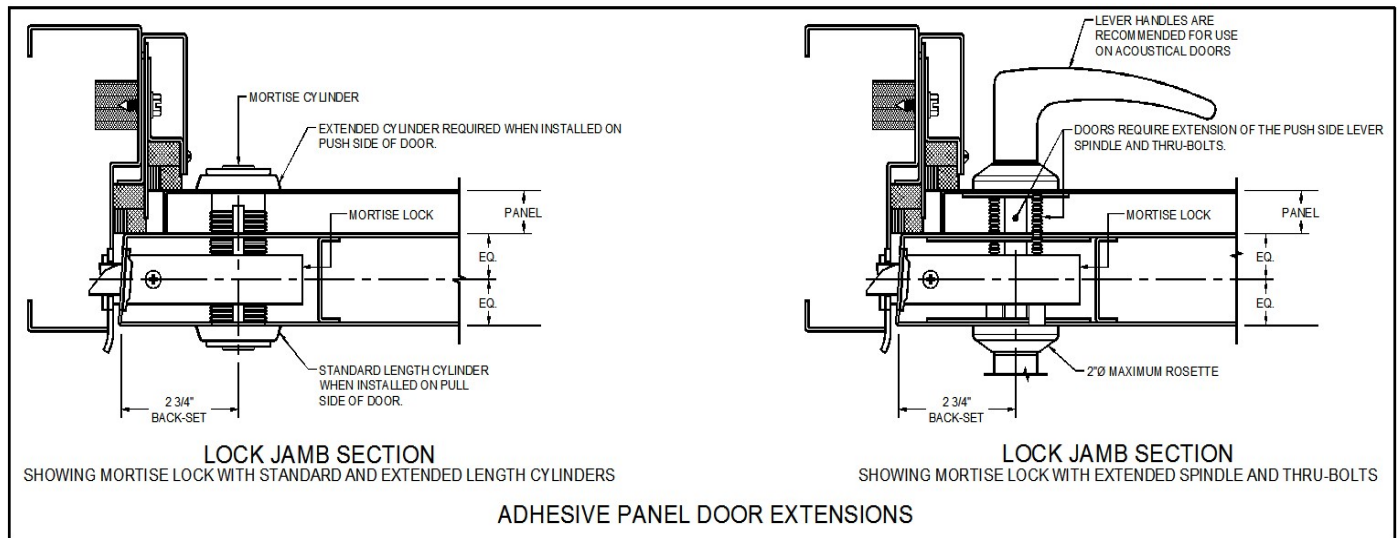


ELEVATION
 SHOWING LOCK POCKET IN PANEL FOR CYLINDRICAL LOCK
 FRAME NOT SHOWN FOR CLARITY



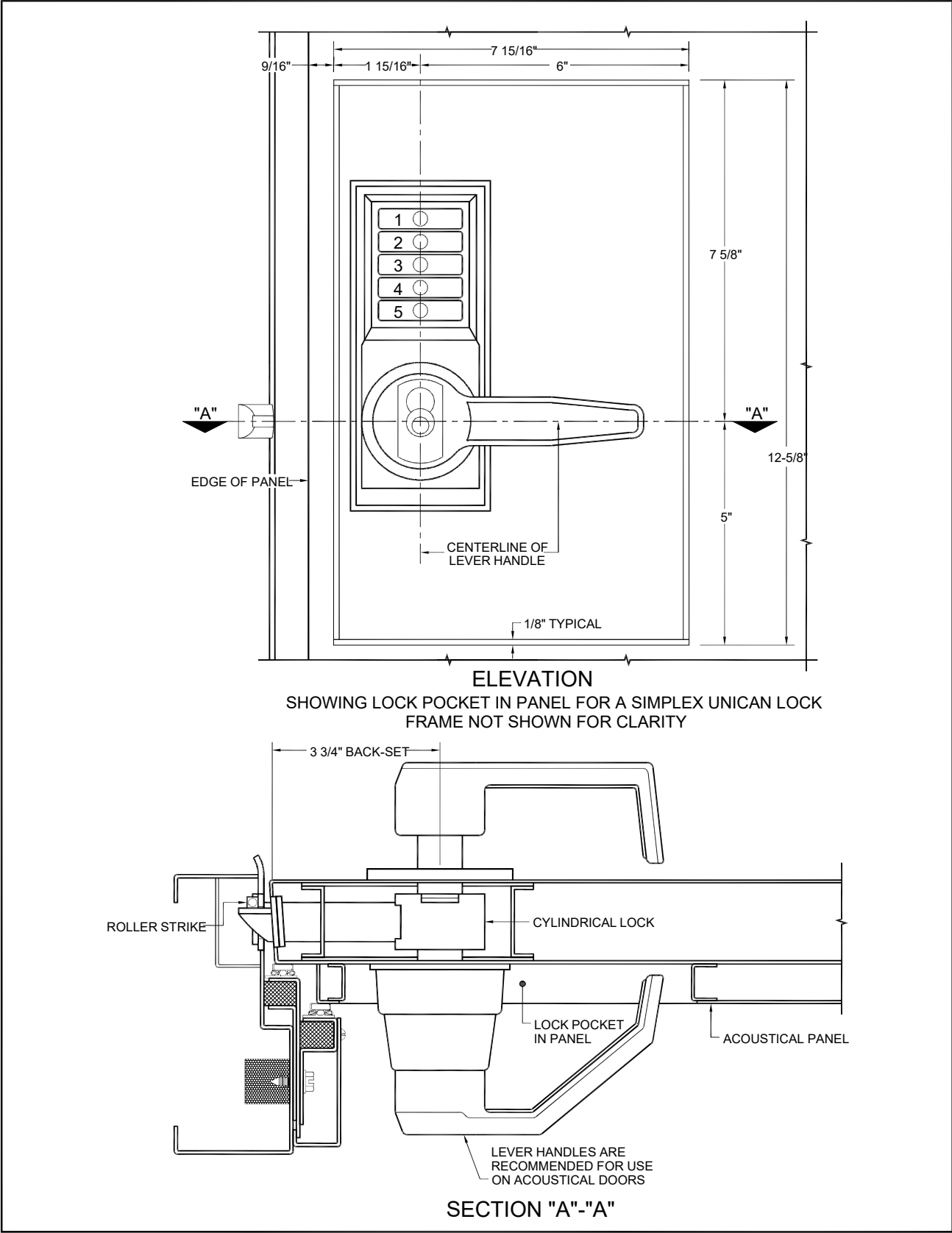
SECTION "A"-"A"

- B. Mortised locks:** The majority of mortise locks are only available in a 2-3/4" back-set, with the exception of Accurate Manufacturing that has a maximum 6" back-set. For mortise locks, the spindles, thru-bolt screws, and cylinders of the lock must be extended on the panel side of the door. Again, lever handles are recommended for all locks. Lock rosettes or escutcheons must not exceed 2"Ø. Consult factory with your opening requirements for specific details.



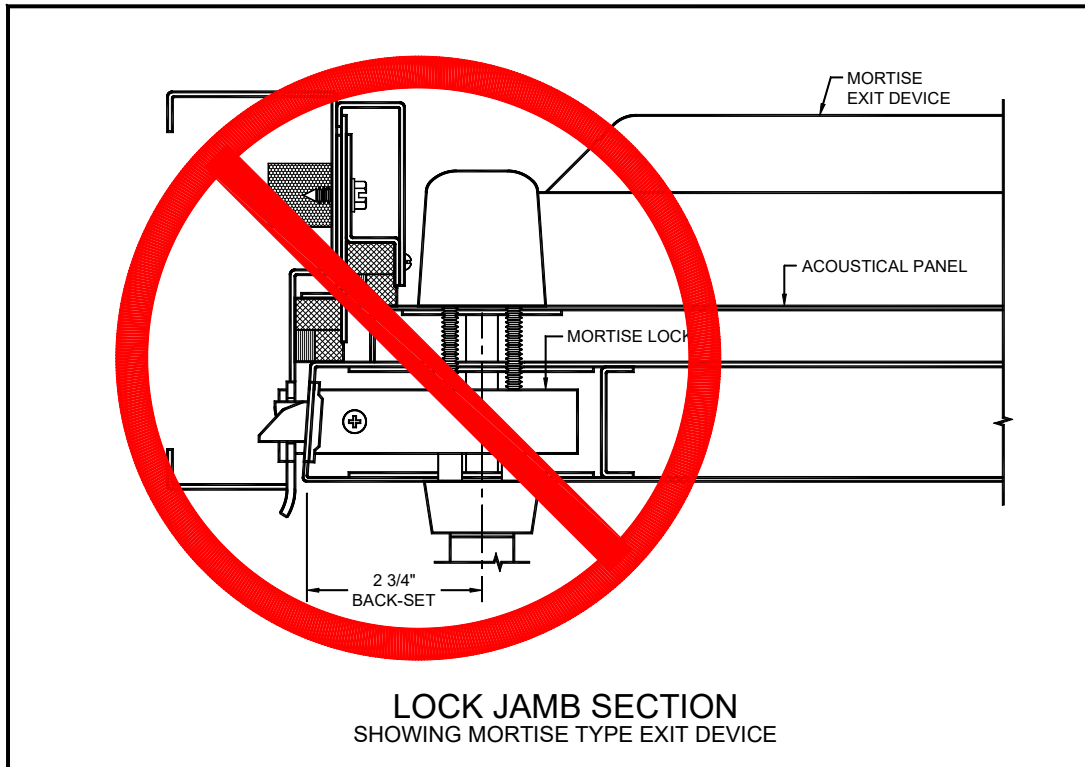
- C. (Kaba Ilco) Simplex Unican L1000 locks:** When using the Simplex Unican locks on applied panel doors a pocket will be placed in the panel to accommodate the pushbutton device for regular swing doors, or the escutcheon trim for reverse bevel doors.

NOTE: Power Lever Locks (Model 1550 and 9550) can not be used with Overly Model #5592175 (2-1/8" thick) because the lock will only fit a door up to 2" thick.

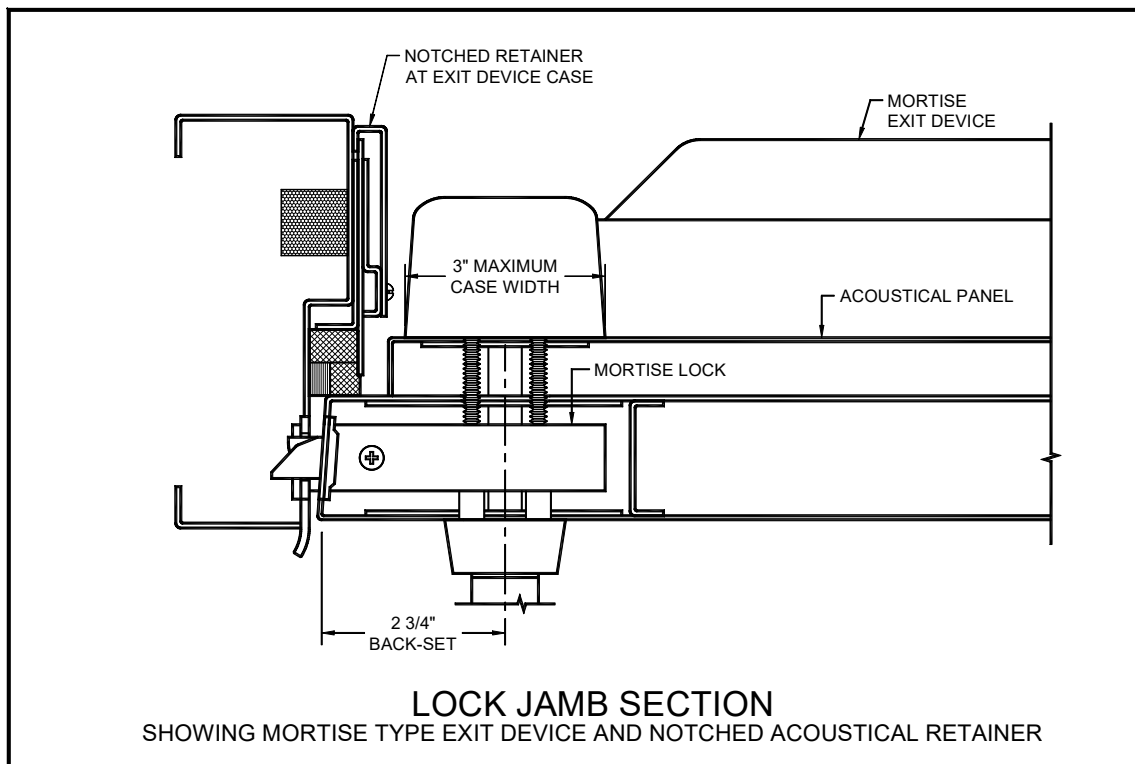


D. Mortised Panic Devices: Overly does not recommend the use of mortise panic devices for single leaf applied panel doors. Because of the 2-3/4" backset in combination with the dual sealing system, there are

clearance/interference issues that do not allow the devices to be mounted and/or swing properly. The case width of the device cannot exceed 2" to maintain dual seals at the device. Consult factory with your opening requirements for specifics if you require a mortised panic device. Narrow Stile Panics, such as the Sargent 8300 narrow design mortise exit device with a 1-1/8" case width will have sufficient clearance (21/32"). Ensure device can be ordered with off-center extensions.



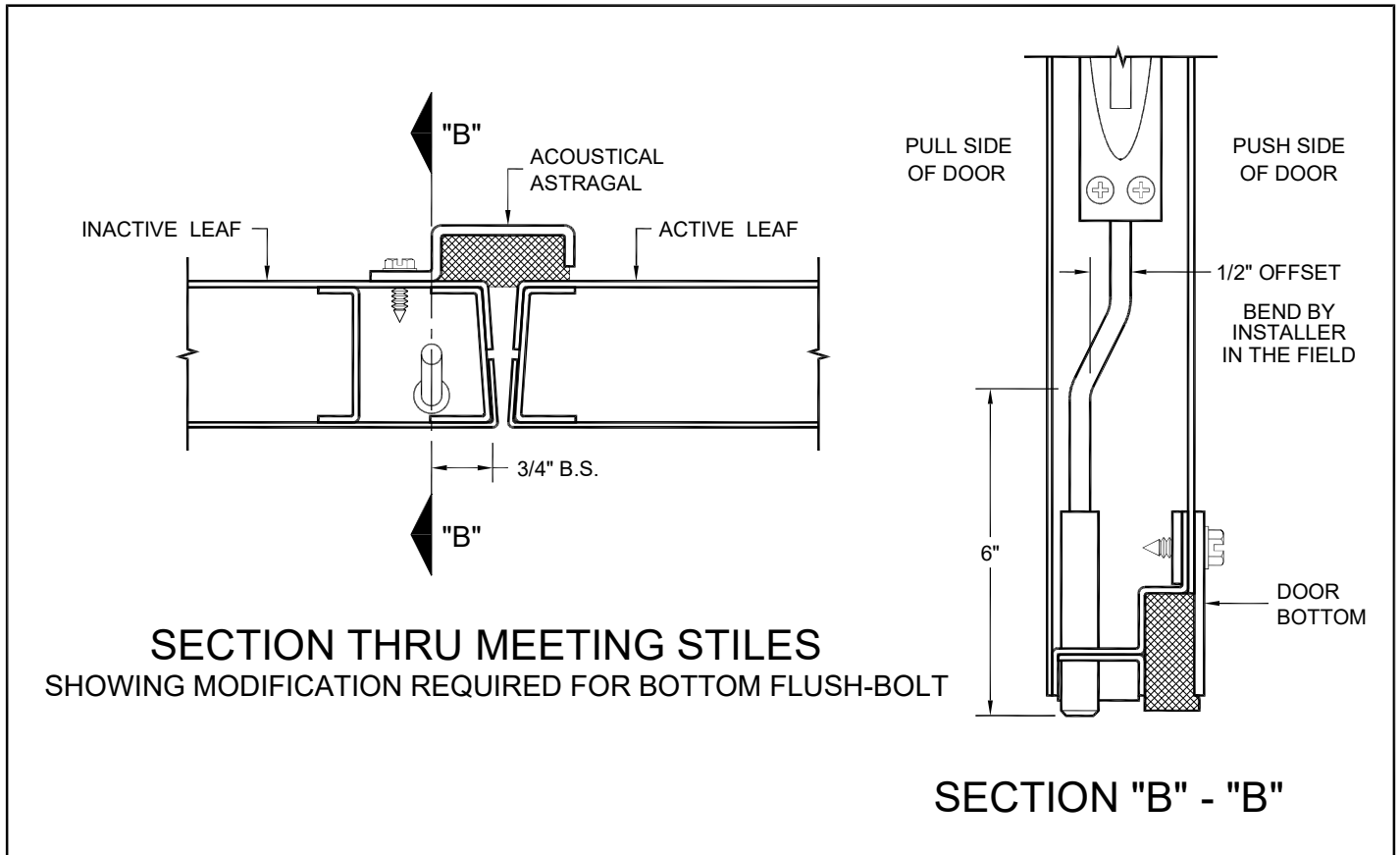
The inner acoustical seal will be notched, but this may degrade acoustical performance.



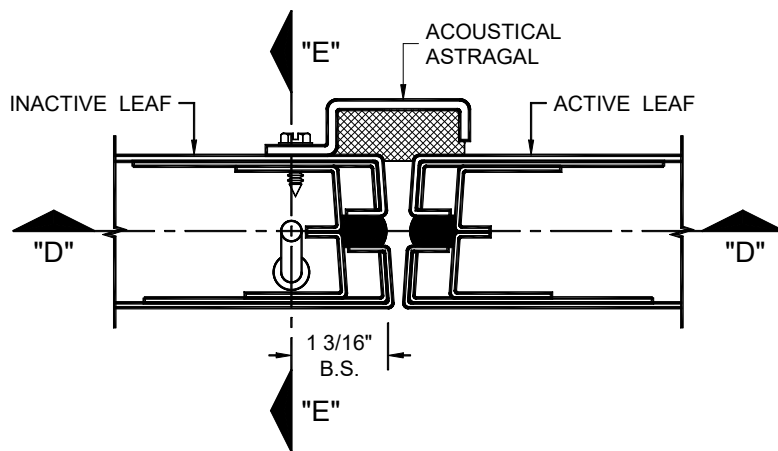
Flush bolts:

A. Manual Flush bolts: Overly utilizes a variety of lock edge constructions to achieve varied levels of acoustical performance. These types include a welded seamless edge and an isolated edge which contains a black rubber sound isolator strip. Depending on the STC requirements, you will be required to follow the instructions below to properly install the manual flush bolts for the edge design supplied.

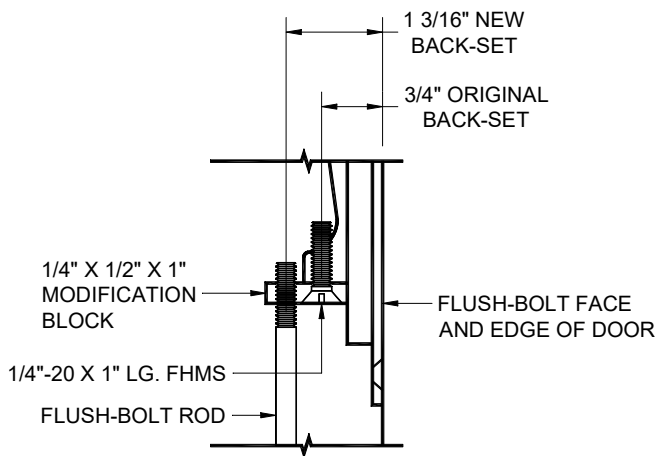
Seamless Lock Edge: Top flush bolt may be installed in the normal supplied condition. Bottom flush bolt rod must be modified by bending to accommodate the presence of the door bottom.



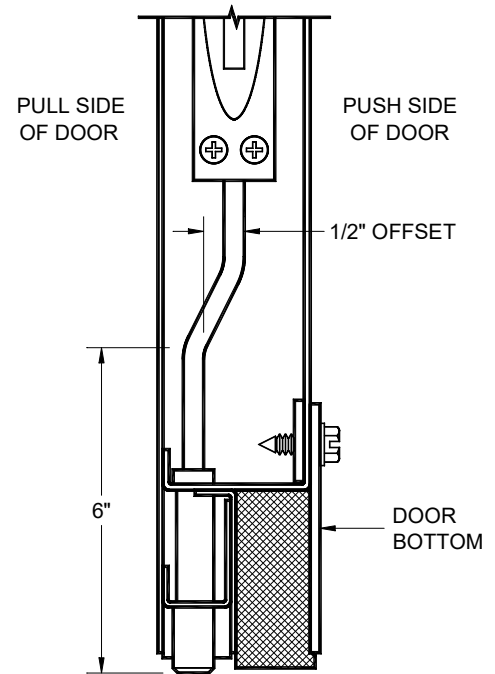
Isolated Lock Edge: Before either flush bolt can be installed, the flush bolt backsets must be modified. Overly supplies a "Flush bolt Extension Kit" for each flush bolt. These kits change the backset of the flush bolt from the standard 3/4" to 1-3/16" which is needed to clear the sound isolator strip. Once the kits are installed to each flush bolt, the top one may be installed. Bottom flush bolt rod must be bent to accommodate the presence of the door bottom.



SECTION THRU MEETING STILES
 SHOWING MODIFICATION REQUIRED TO FLUSH-BOLTS
 FOR ACOUSTICAL DOORS WITH ISOLATED EDGES



SECTION "D" - "D"
 SHOWING SECTION THRU FLUSH-BOLT ONLY.
 DOOR CONSTRUCTION NOT SHOWN FOR CLARITY



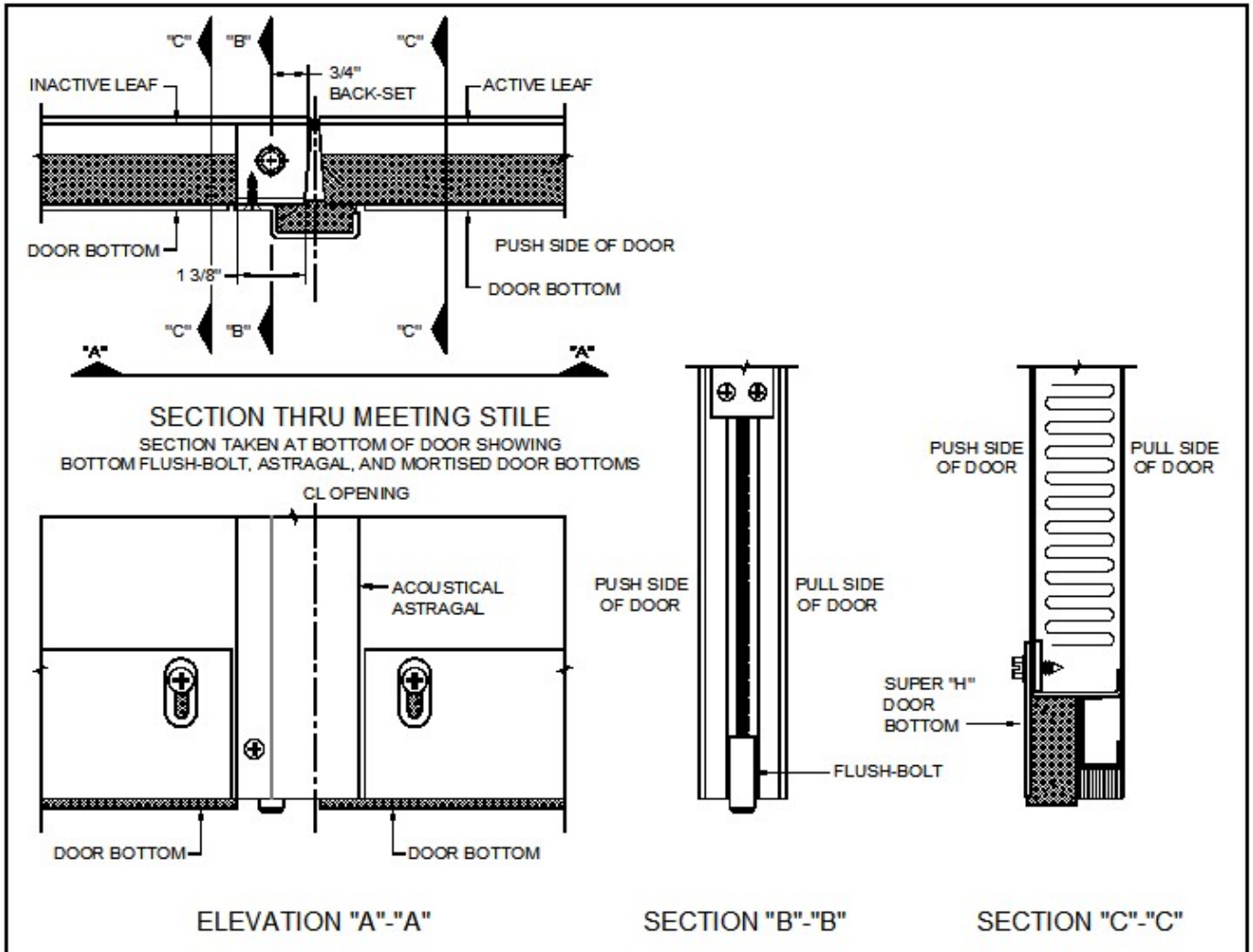
SECTION "E" - "E"

B. Self-Latching Flush bolts: While the acoustical rating will be compromised, this style of flush bolts will be available for pairs utilizing compression seals. More care may be required when adjusting compression type seals when self-latching flush bolts are used. Top bolt only is recommended in this condition and if the door has a UL label, the use of a fire bolt will be required in the edge of the doors..

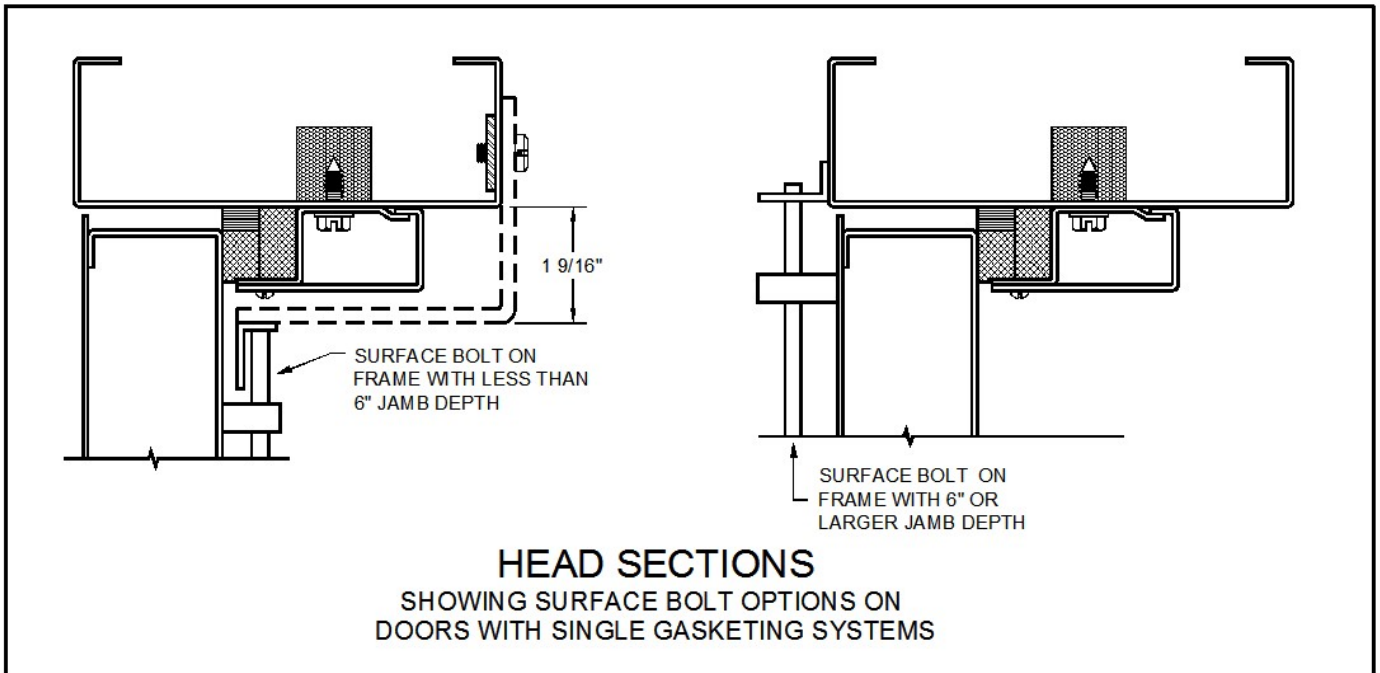
C. Automatic Flush bolts: Automatic flush bolts are not recommended for use with compression type sound seals. If automatic flush bolts are required, a sound retardant door model that utilizes magnetic or double bubble gaskets are recommended. The reason for this is that when the door is closed, the compression gaskets and astragal are adjusted and pressure is applied to the door(s), the automatic flush bolts will not retract as required when the active leaf is opened. While the bolt may retract if the inactive door is pulled tightly against the seals, when the door is closed again, it will not automatically enter the strike, since it requires a loose clearance to function properly.

If automatic flush bolts are required, Overly would recommend using the top bolt only because the door bottom of the inactive leaf will be compromised in order to accommodate the bottom flush bolt. The door bottom of the Active leaf would be cut short allowing sound to pass under the doors. See drawing below.

Note: With either type of flush bolt, the use of a bottom fire bolt will be required for UL fire labeled doors with no bottom bolt.

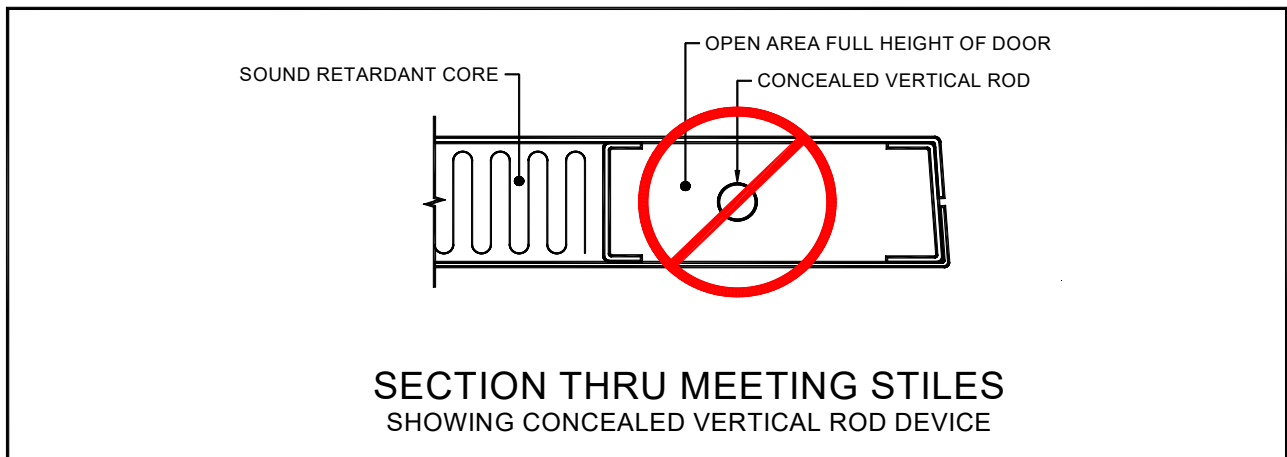


- D. Surface bolts:** The use of manual surface bolts will require a strike bracket added at the head of the frame for the top bolt and special consideration will be required at bottom of the door. Consult factory for specifics based on Acoustical Door Model number.



Panic Devices:

- A. Concealed Vertical Rods for pairs of doors:** Concealed vertical rods are not recommended by Overly for use in any of its sound retardant doors. The reason for this is the fact that these types of devices require a large open area in the full height of the door, limiting the amount of sound insulation, as well as preparation in the bottom of the door which precludes the use of the mortise type bottom seals. It is for these reasons we cannot certify an STC rating on doors that use this type of locking mechanism.

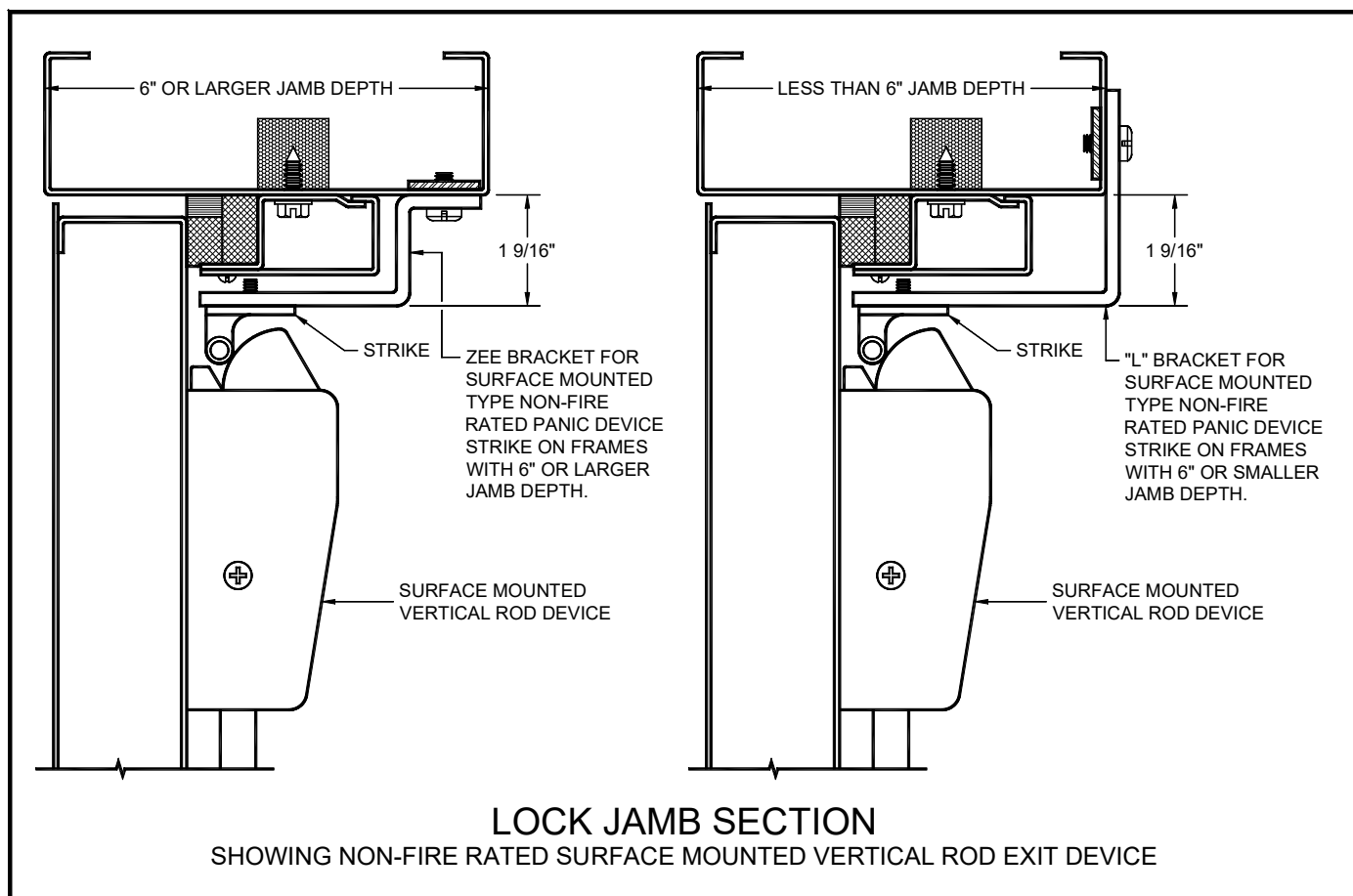


B. Surface Mounted Vertical Rods: When surface mounted vertical rods are used, top rod only devices are recommended. The required roller strike for the top latch must be mounted to a Z- or L-shaped bracket, supplied by Overly, at the head. If bottom rods are utilized, the bottom latch of the device has two (2) conditions on Overly sound retardant doors due to the type of door bottoms utilized.

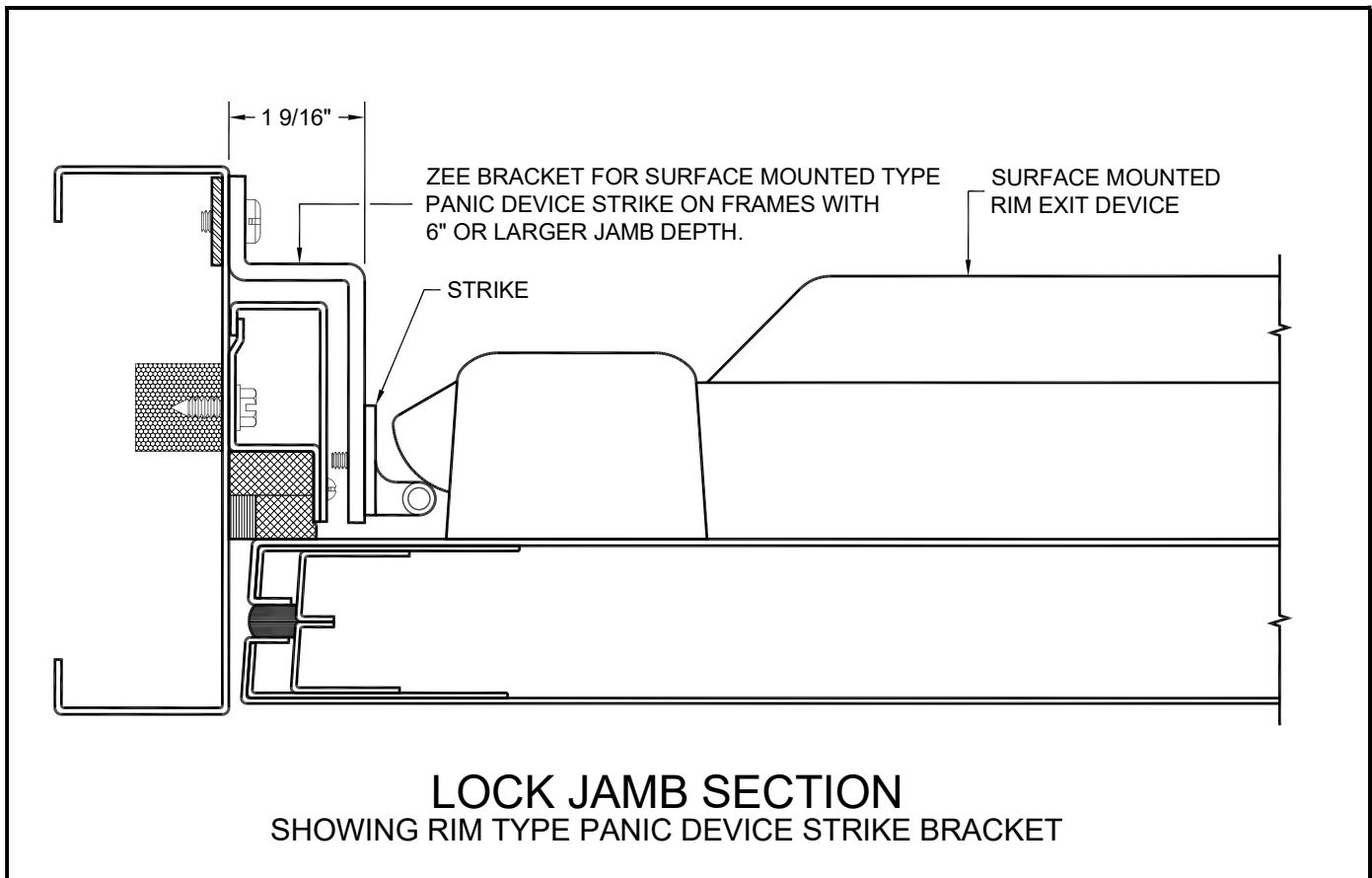
When the automatic type is used, any mounting screws occurring on the bottom 2" of the door must be cut short or they will prevent the automatic door bottom from operating properly.

When an Overly Super "H" door bottom is used, adjust the door bottom first, then drill, tap and mount the bottom latch. The bottom latch will mount directly to the 11 gauge retainer plate of the door bottom. Shimming of the remaining latch above the door area may be required and shims must be supplied by the installer.

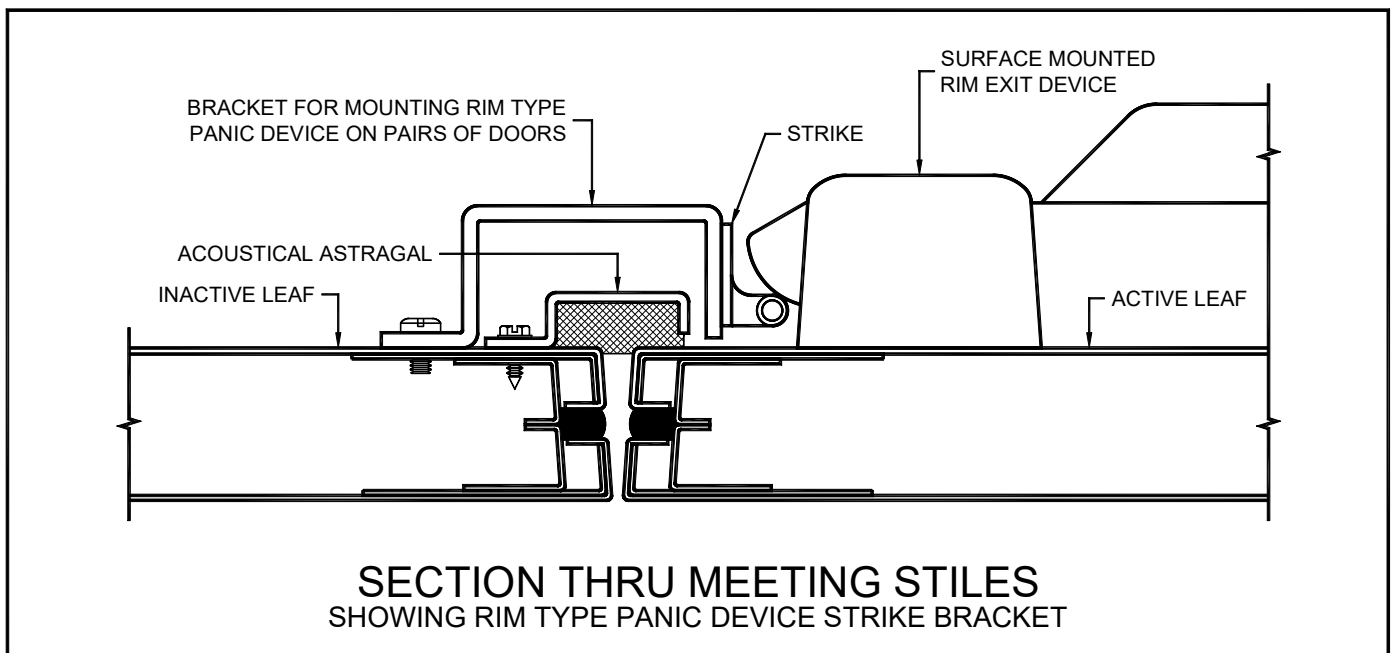
For fire rated applications, use of a fire bolt is required.



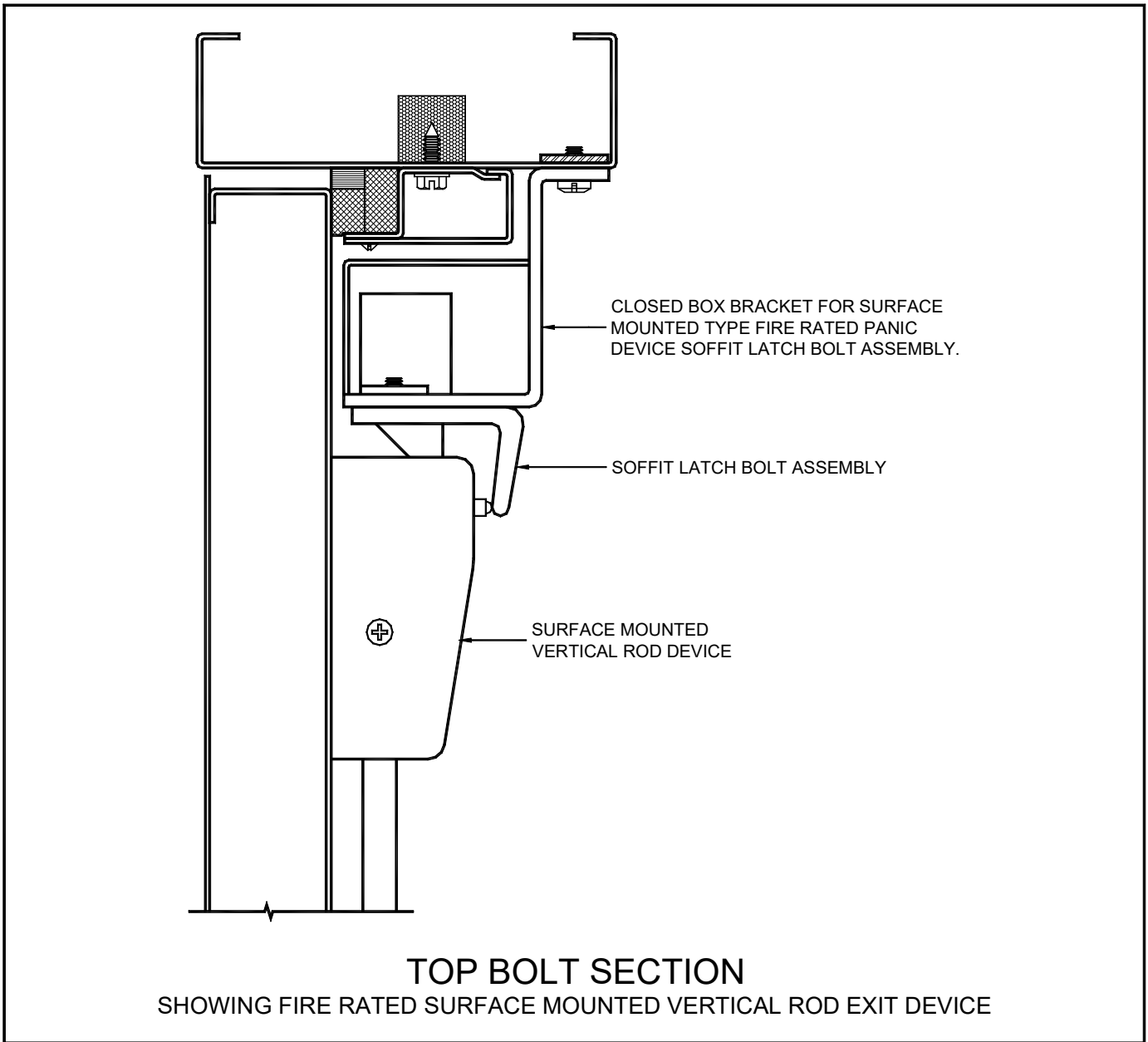
C. Rim Type (single doors only): When rim type locking devices are required, the roller strike must be mounted to a supplied Z- or L-shaped bracket. Overly provides this bracket and its shape is determined by the frame jamb depth.



D. Rim Type (pairs of doors): When a rim type device is required for the active leaf of a pair, Overly supplies a roller strike mounting bracket. **Do not mount roller strike directly to the acoustical astragal.**



E. **Fire rated vertical rods:** When fire rated surface vertical rods are used, a special soffit latch mounting assembly is provided by Overly and must be used at the head. The top latch strike **must not** be directly mounted to the seal cover.

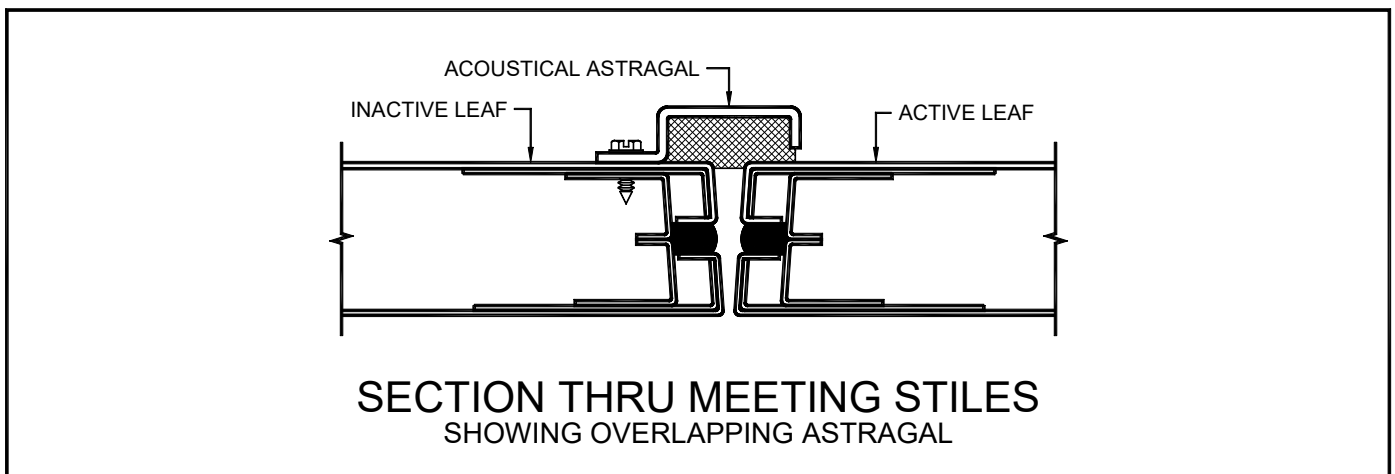


F. Exit devices (pairs of doors): On pairs of acoustical doors, Overly supplies three types of astragal configurations. They are an overlapping surface mounted type located on the push side of door, an overlapping integral type located on the push side of door and a surface mounted split type mounted on the pull side of the door. Two mortise exit devices cannot be installed on the same pair of doors, regardless of astragal type provided.

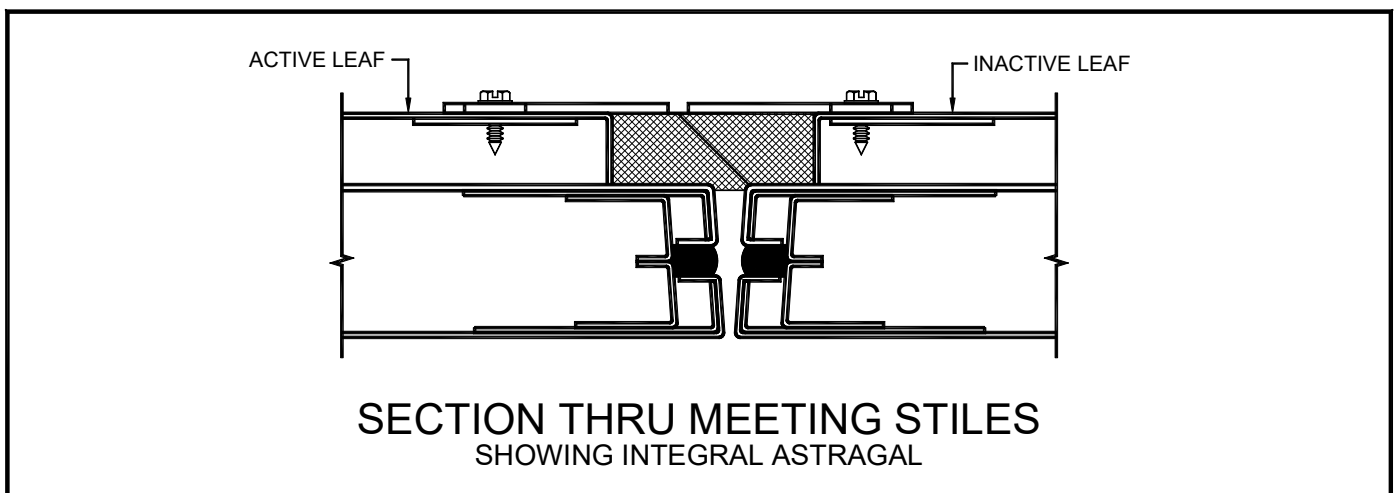
Overlapping surface mounted type: If both leaves of the opening are to be “active”, Overly **notes** that a mortise lock exit device and a surface mounted vertical rod device be used. This will also require the use of a coordinator to allow the doors to close in the proper order to account for the overlapping astragal. Overly recommends an arm type coordinator such as the Ives COR9G with a long enough arm to accommodate the overlap of the astragal. If a bar type coordinator is used, a coordinator bracket set-up must be supplied by Overly. Shimming and blocking must be done in the field.

Note: Force to open inactive door first will be very high and this situation should be avoided. Due to the overlapping astragal and weight of the door, it will require more force than the average hollow metal door to open. It is not recommended to use an overlapping acoustical astragal as a carry bar.

Open back strikes: If a pair with mortise and surface vertical rod devices must be used, we do not recommend the use of an open back strike because this will compromise the astragal seal and an acoustical rating will not be guaranteed.

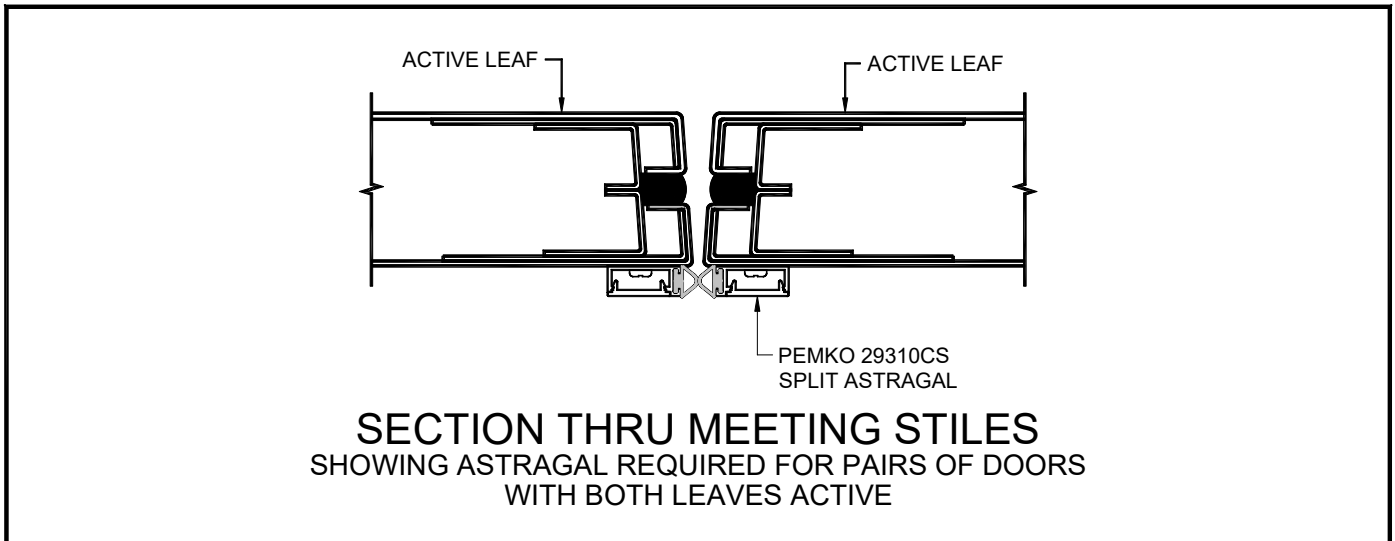


Overlapping integral type: Same as overlapping surface mounted type. Mortise exit not recommended on both leaves with this panel door astragal. This will not permit both leaves active.

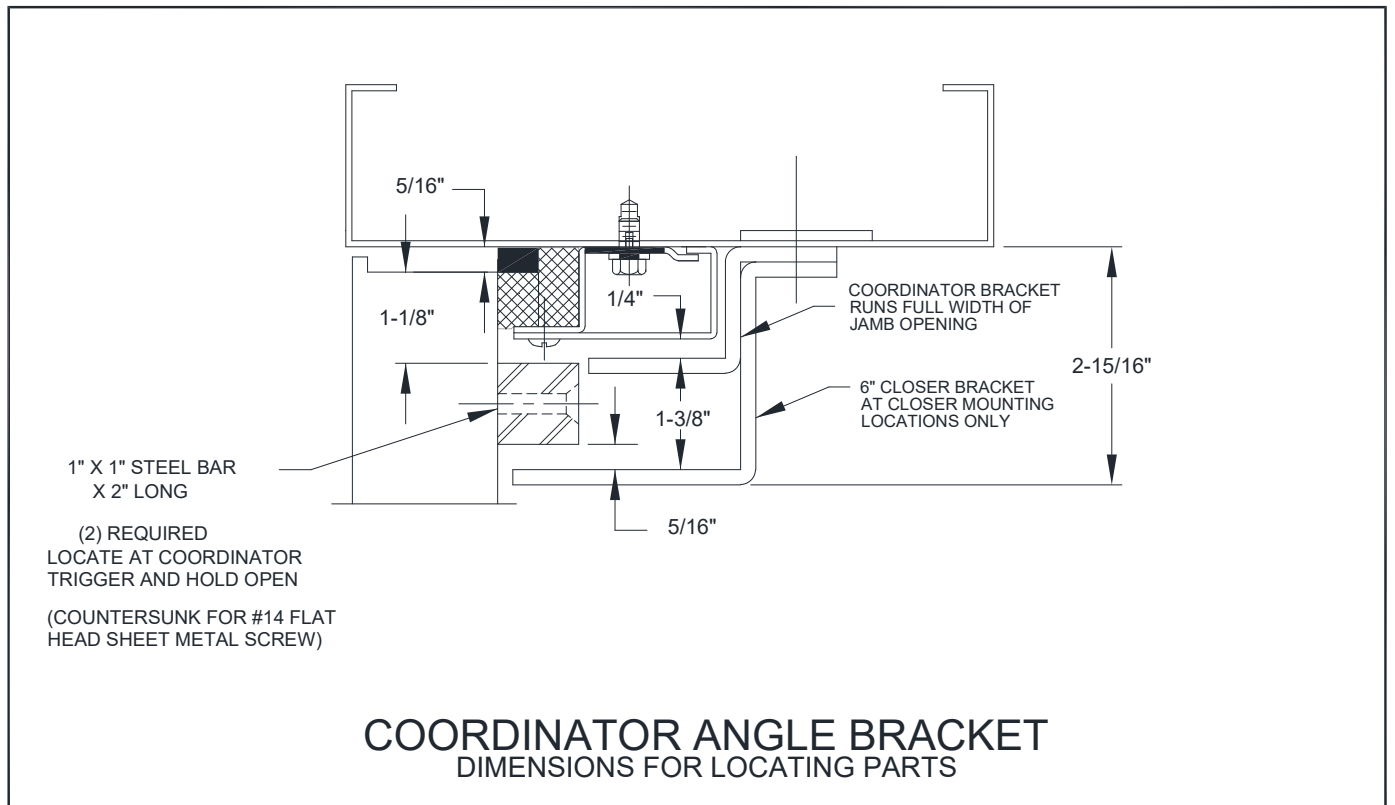


Surface mounted split type: When both leaves are required to be active and both are equipped with surface mounted vertical rods, Overly provides a split type astragal designed to work in this situation. The overall

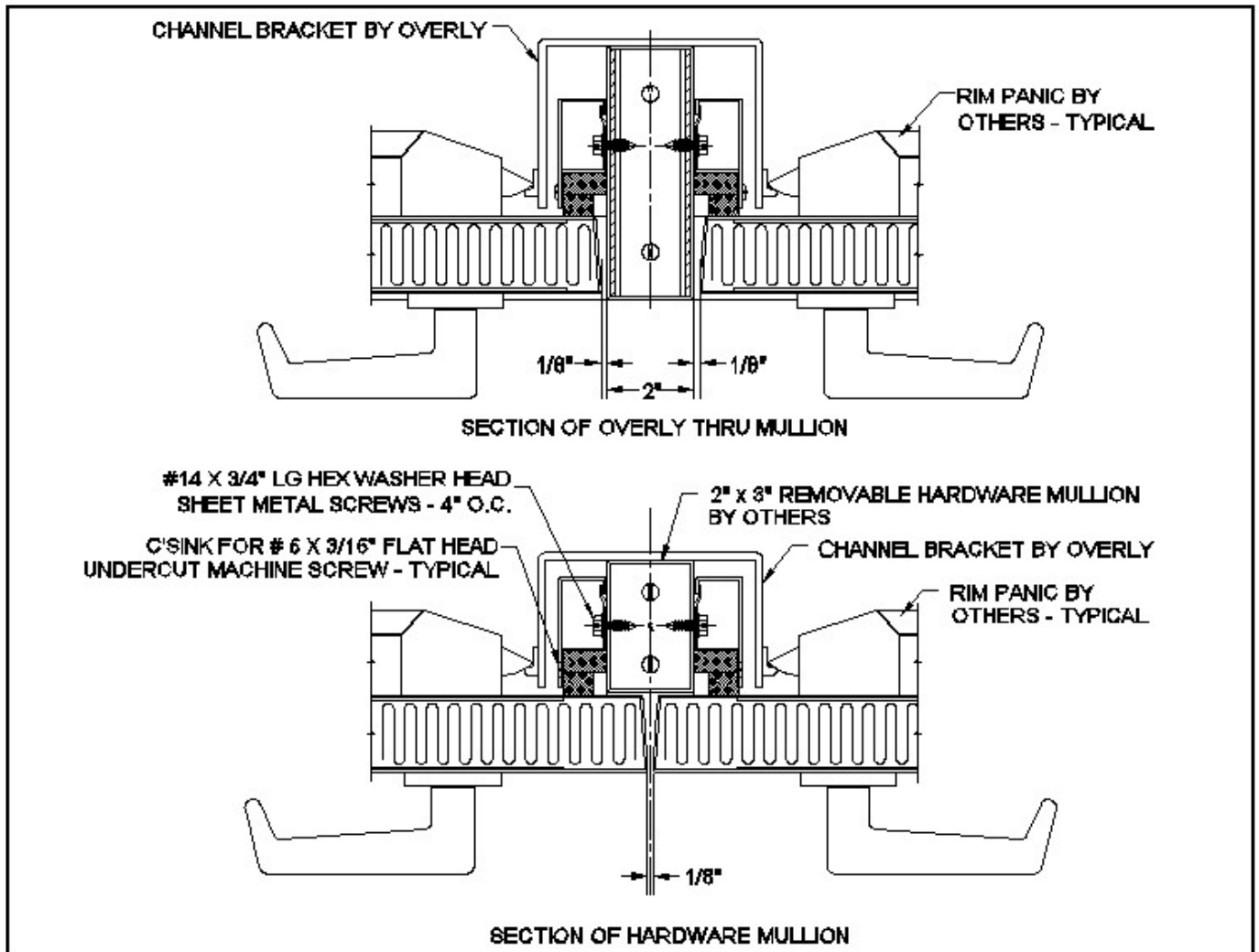
acoustical effectiveness is not as good as when the overlapping types are used, but is acceptable for most applications. This astragal seal is intended for use when both leaves are required to be active.



Coordinator Bracket: When a bar type is used, such as the Glynn Johnson, the doors will need to be prepped with special brackets and door trigger blocks as shown in the picture below. If drop down coordinator is desired, we recommend a 9" length to allow active leaf to clear astragal and allow proper closing of the doors.

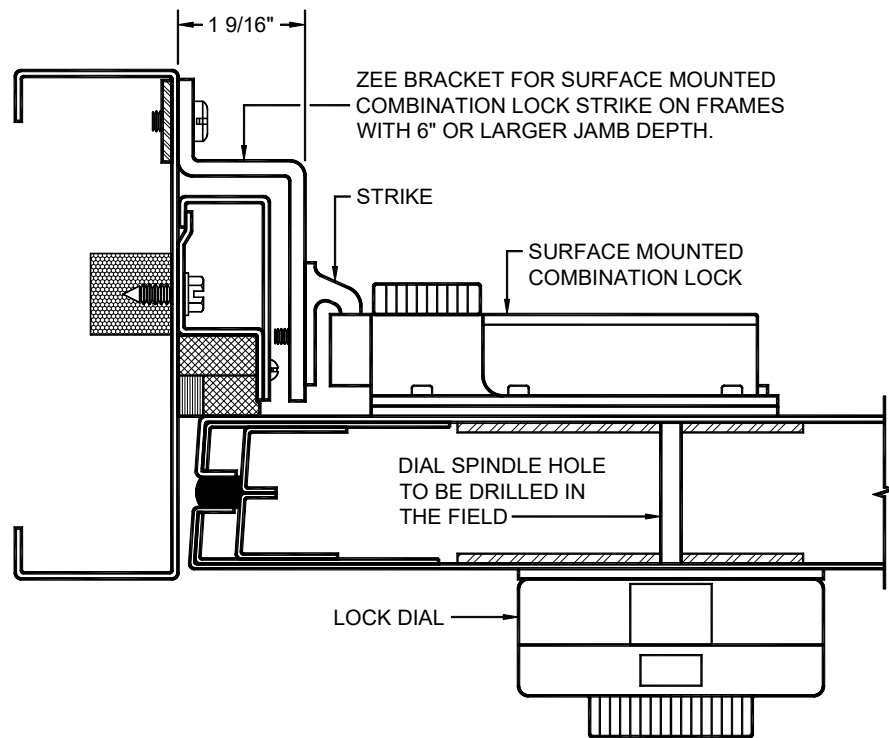


Overly Thru and Hardware Mullions: To accommodate ADA width, mullions being utilized may require a 72" opening to be a 74" (Add 2" extra). Overly provides it's own thru and hardware mullions for use with its gasketing systems. We do not recommend the use of commercial hardware mullions with our acoustical products.

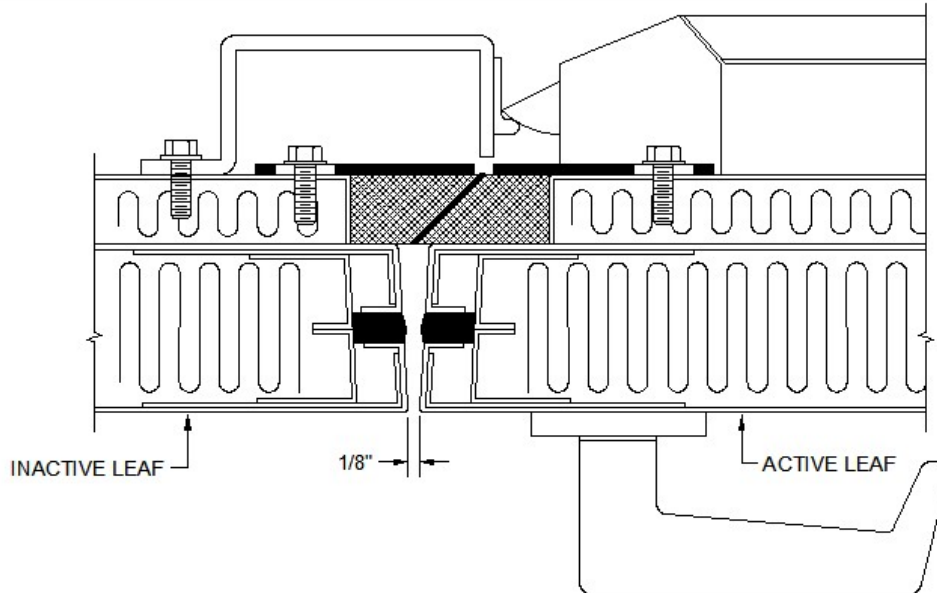


Surface Mounted Auxiliary Locks:

Surface mounted auxiliary locks such as the Sargent & Greenleaf 8470, Kaba Mas CD-X10 combination locks or a Yale 197 deadlock require a strike bracket when the device is mounted on the stop side of doors.

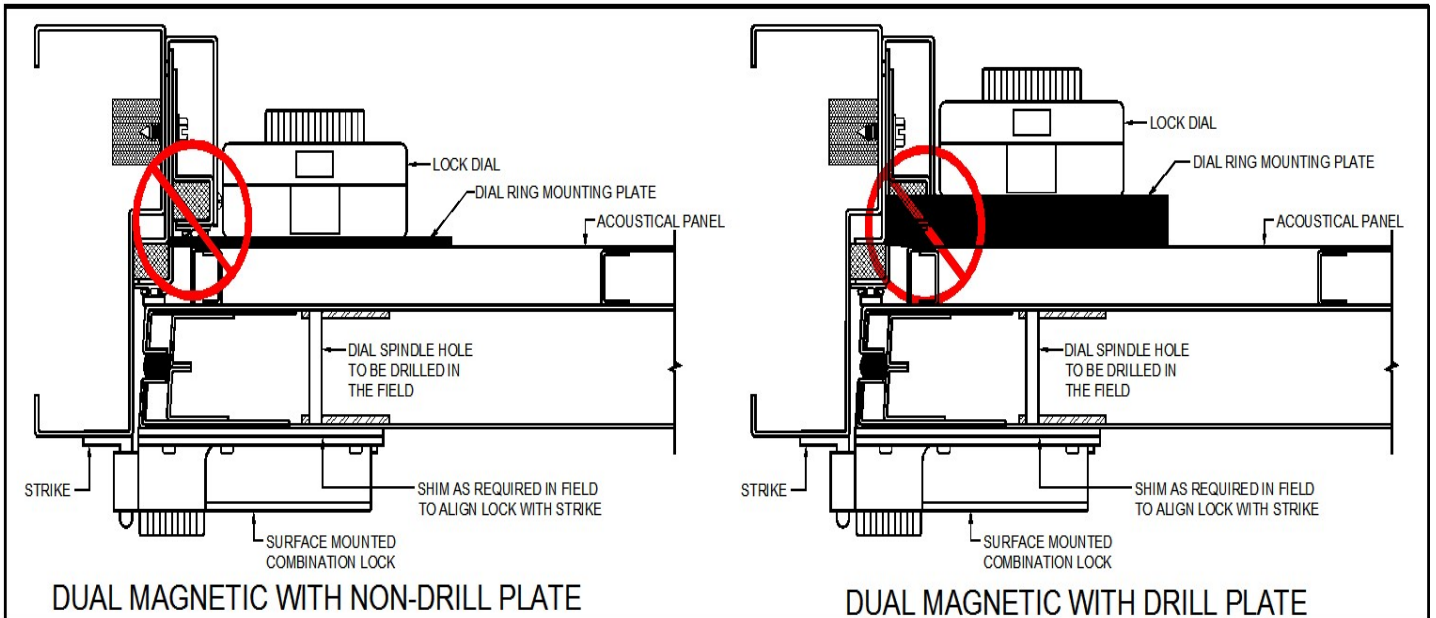
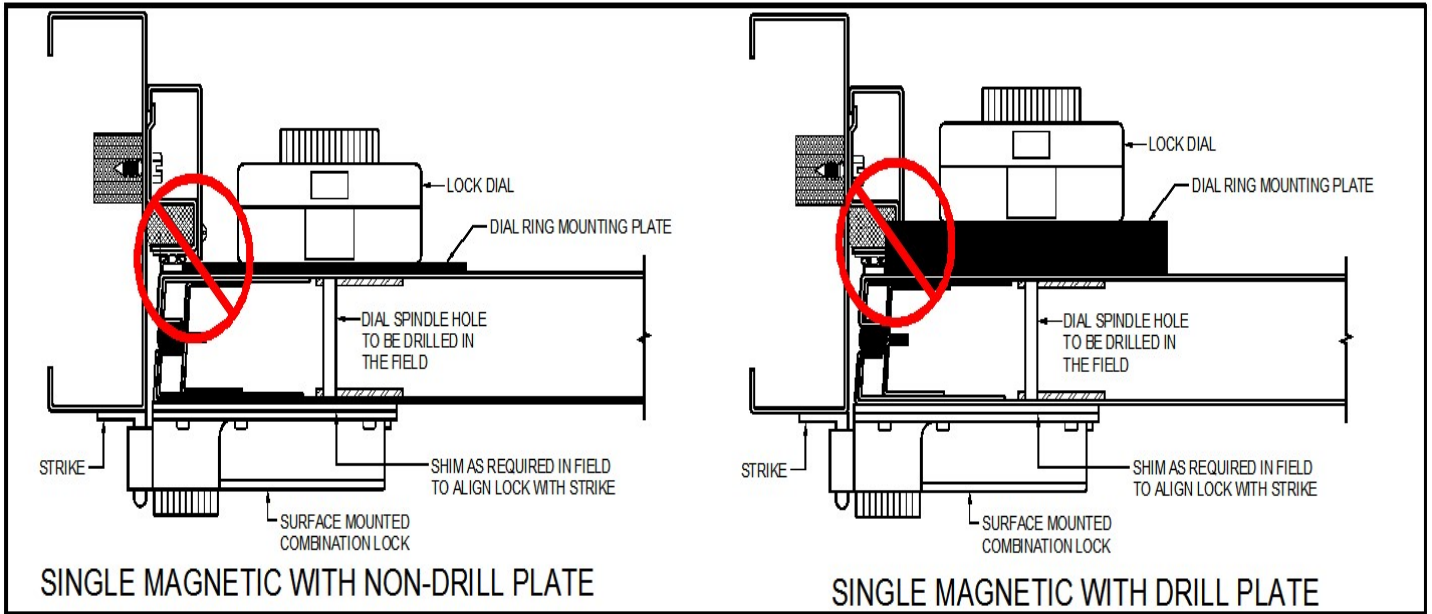


LOCK JAMB SECTION
 SHOWING COMBINATION LOCK STRIKE BRACKET
 REQUIRED WHEN LOCK IS MOUNTED ON STOP SIDE OF DOOR

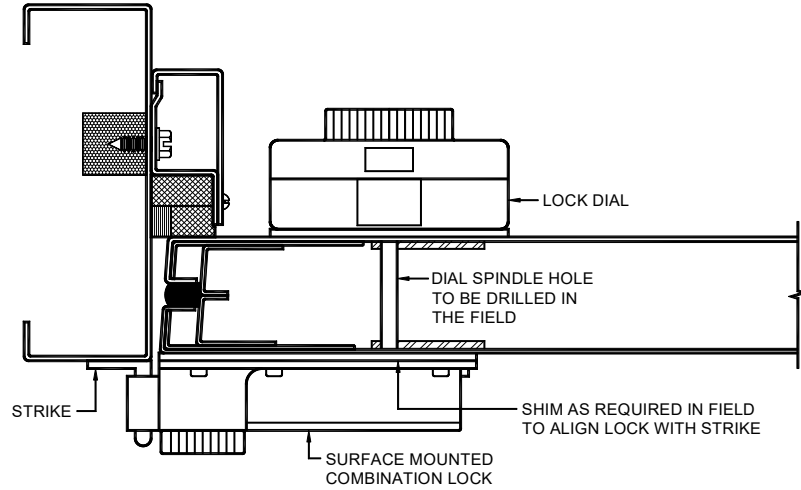


SECTION THRU MEETING STILES
 SHOWING CONCEALED PANEL ASTRAGAL STRIKE
 MOUNTING BRACKET FOR PAIRS OF DOORS

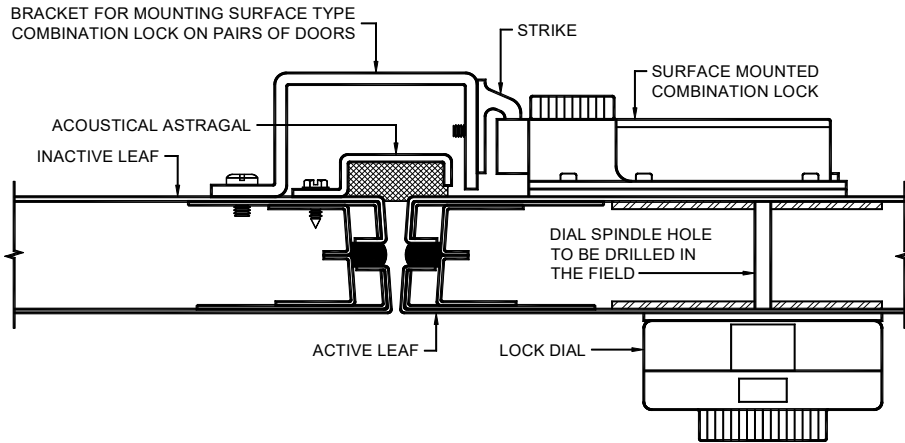
When mounting CD-X10 locks on in-swing openings, you can not use either the non-drill resistant or drill resistant dial ring mounting plates. Both will interfere with Overly single and dual sound door sealing systems. Consult factory for options if plate must be used.



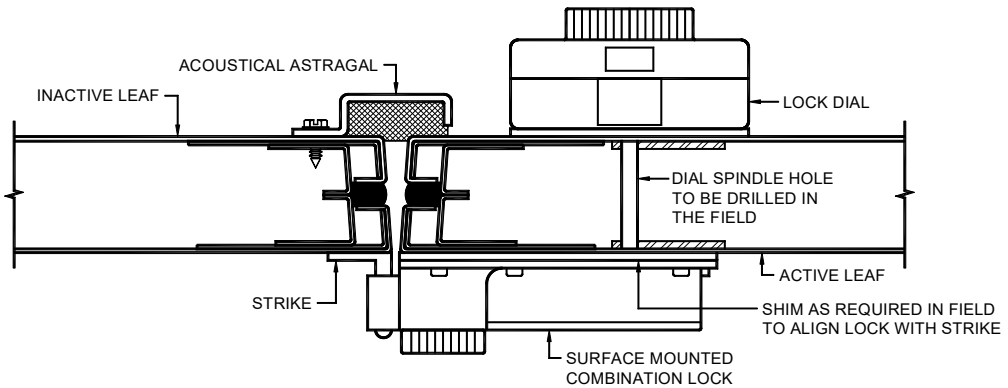
**LOCK JAMB SECTION (IN-SWING UNITS)
SHOWING COMBINATION LOCK SEAL INTERFERENCE
WITH THE DIAL RING MOUNTING PLATE WITH THE CD-X09**



LOCK JAMB SECTION
 SHOWING COMBINATION LOCK STRIKE BRACKET
 REQUIRED WHEN LOCK IS MOUNTED ON STOP SIDE OF DOOR



SECTION THRU MEETING STILES
 SHOWING COMBINATION LOCK STRIKE BRACKET
 REQUIRED WHEN LOCK IS MOUNTED ON STOP SIDE OF DOOR



SECTION THRU MEETING STILES
 SHOWING COMBINATION LOCK INSTALLATION
 WHEN LOCK IS MOUNTED ON HINGE SIDE OF DOOR

Thresholds:

All models of Overly Sound Retardant doors must have a smooth, level surface for the door bottom to seal against. If carpeting is to be used, a threshold must be installed. The height of the threshold should be at least equal to and preferably 1/8" higher than the carpet. It is recommended that the threshold be installed against the sub-floor and run the carpet up to the threshold. Do not install the threshold on top of the carpeting. Thresholds are to be set in a good grade of acoustical sealant.

Note: The use of fluted and/or abrasive coated thresholds will cause premature wearing and failure of the door bottom neoprene.

The position of the thresholds should be such that the leading edge of the threshold be placed no deeper than the door side trim of the frame.

