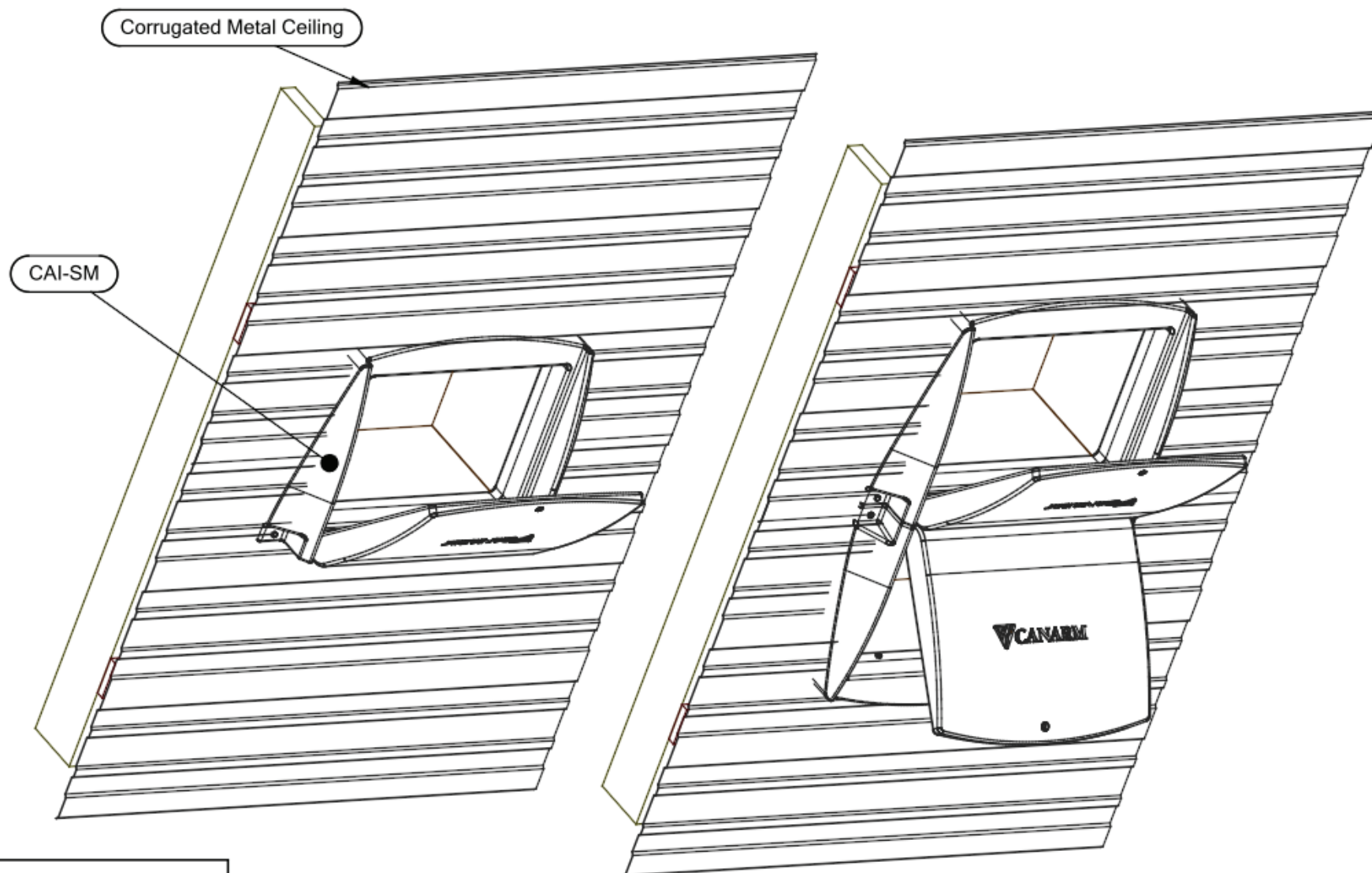


CAI-SM AND CAI-SM X2 FRAMING AND INSTALL GUIDE



PRODUCT LINE
INSTRUCTIONS

CURRENT REVISION
REV 1

INITIALS

M.M

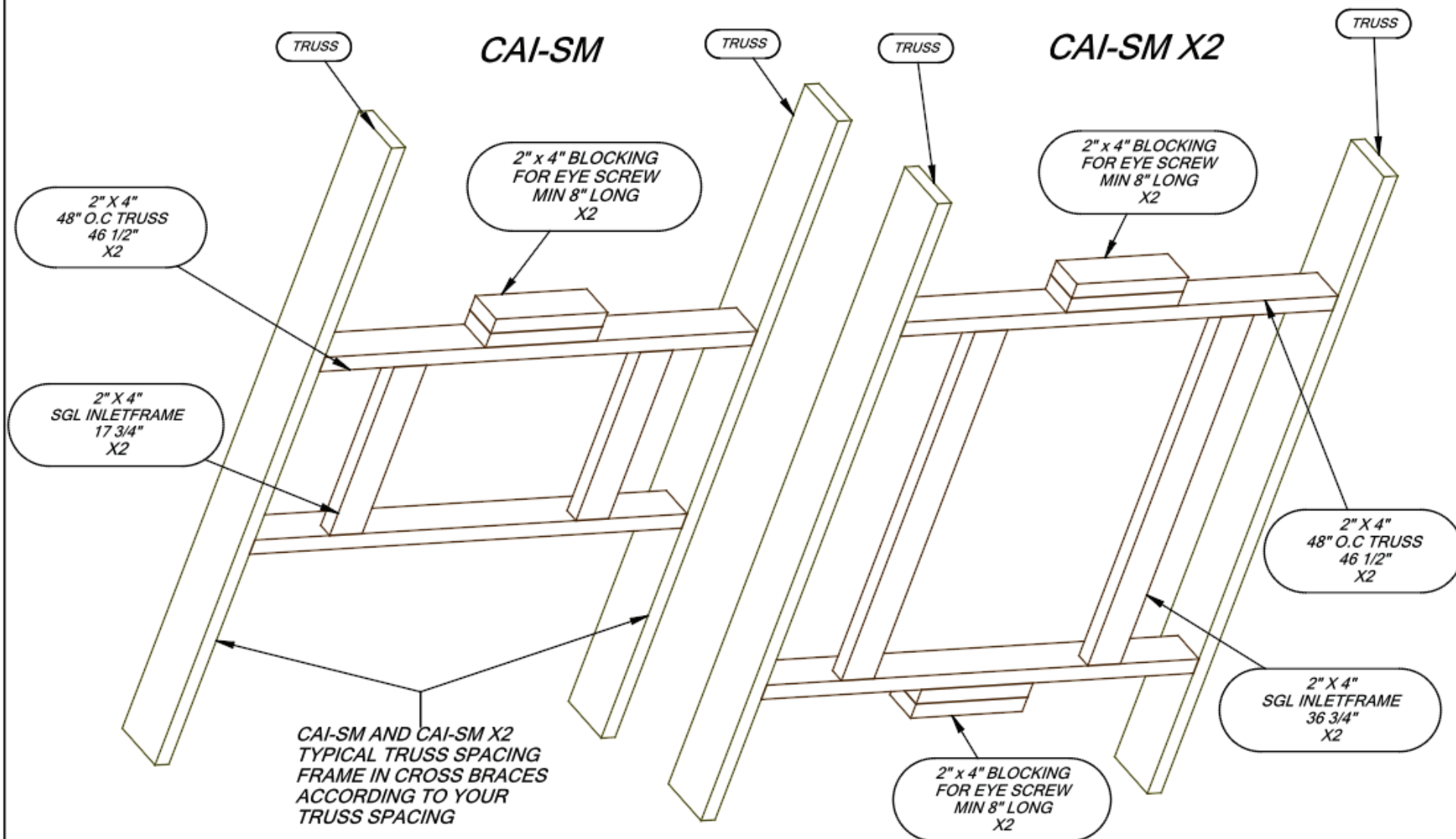
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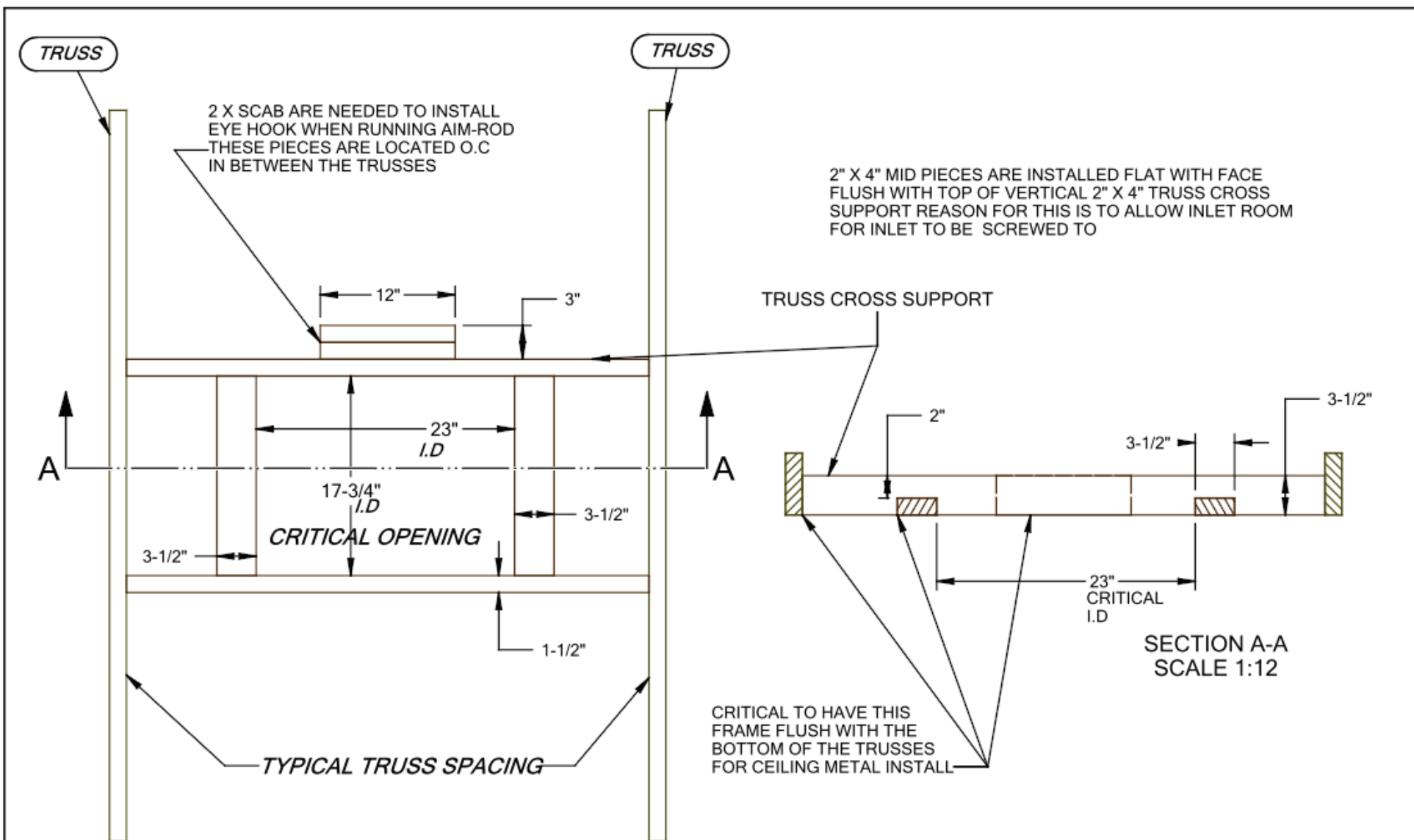
FRAMING AND INSTALL OF INLETS

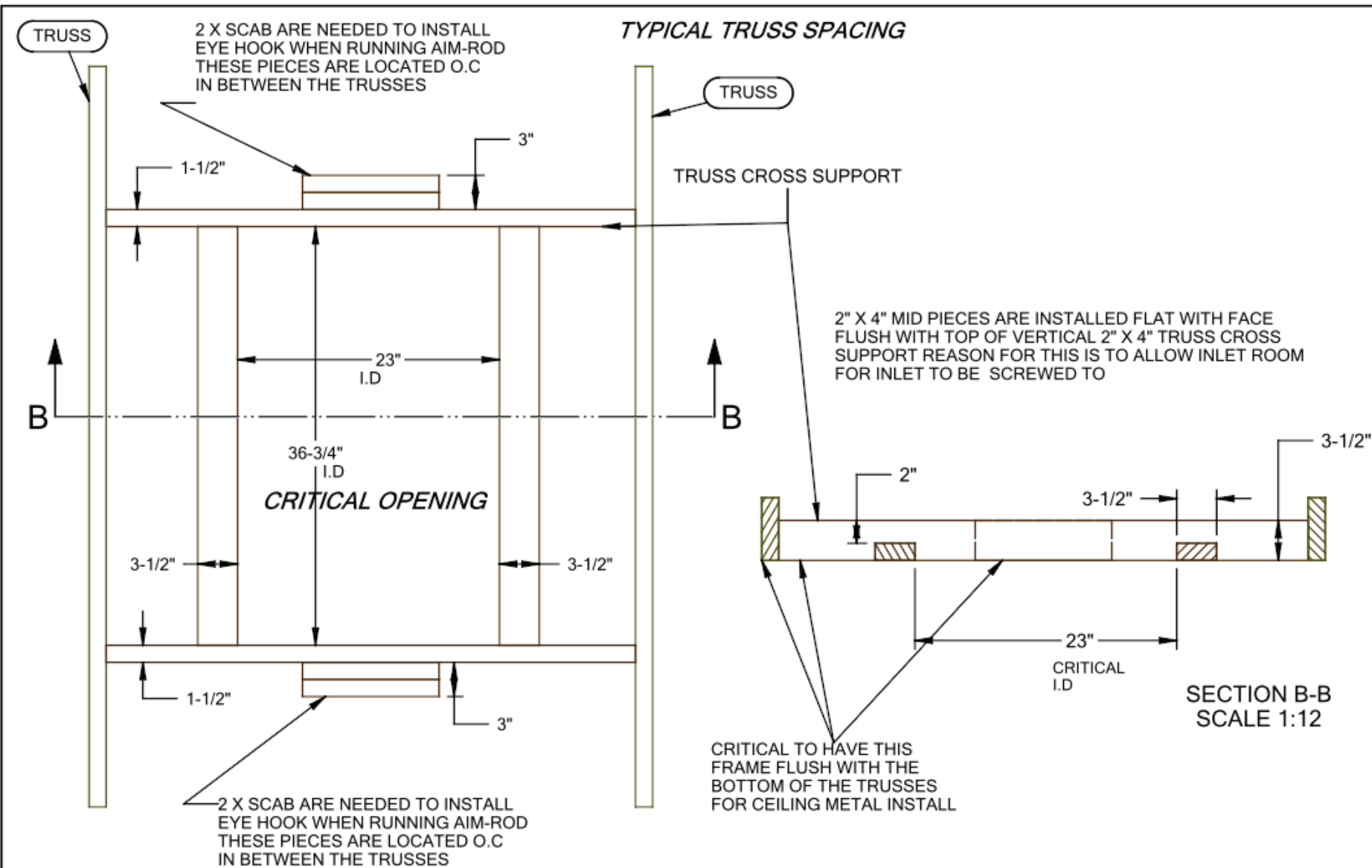
DWG NO.

CAI-SM-FRAMING & INSTALL

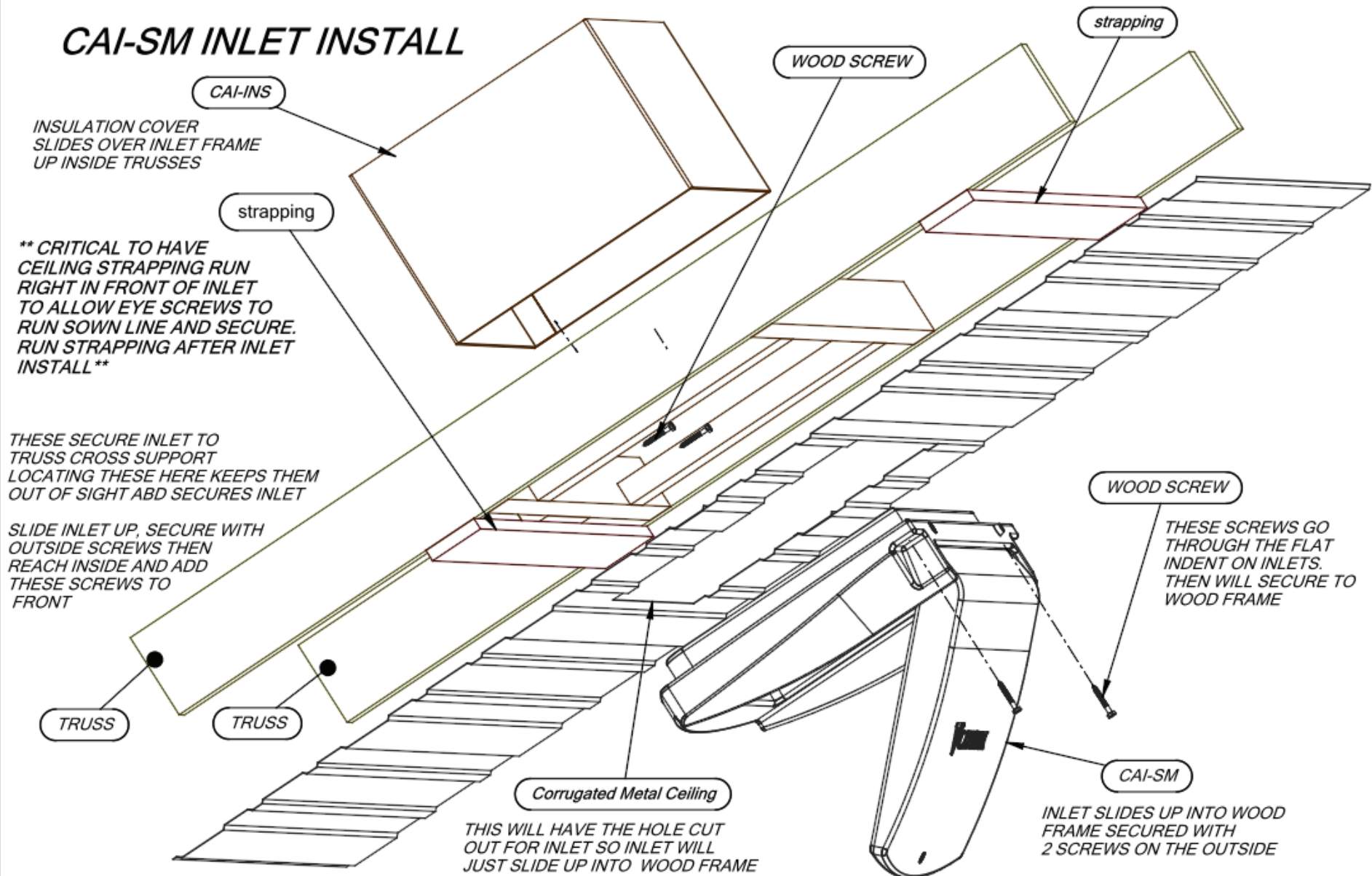
SUGGESTED FRAMING DETAILS FOR CAI-SM AND CAI-SM X2



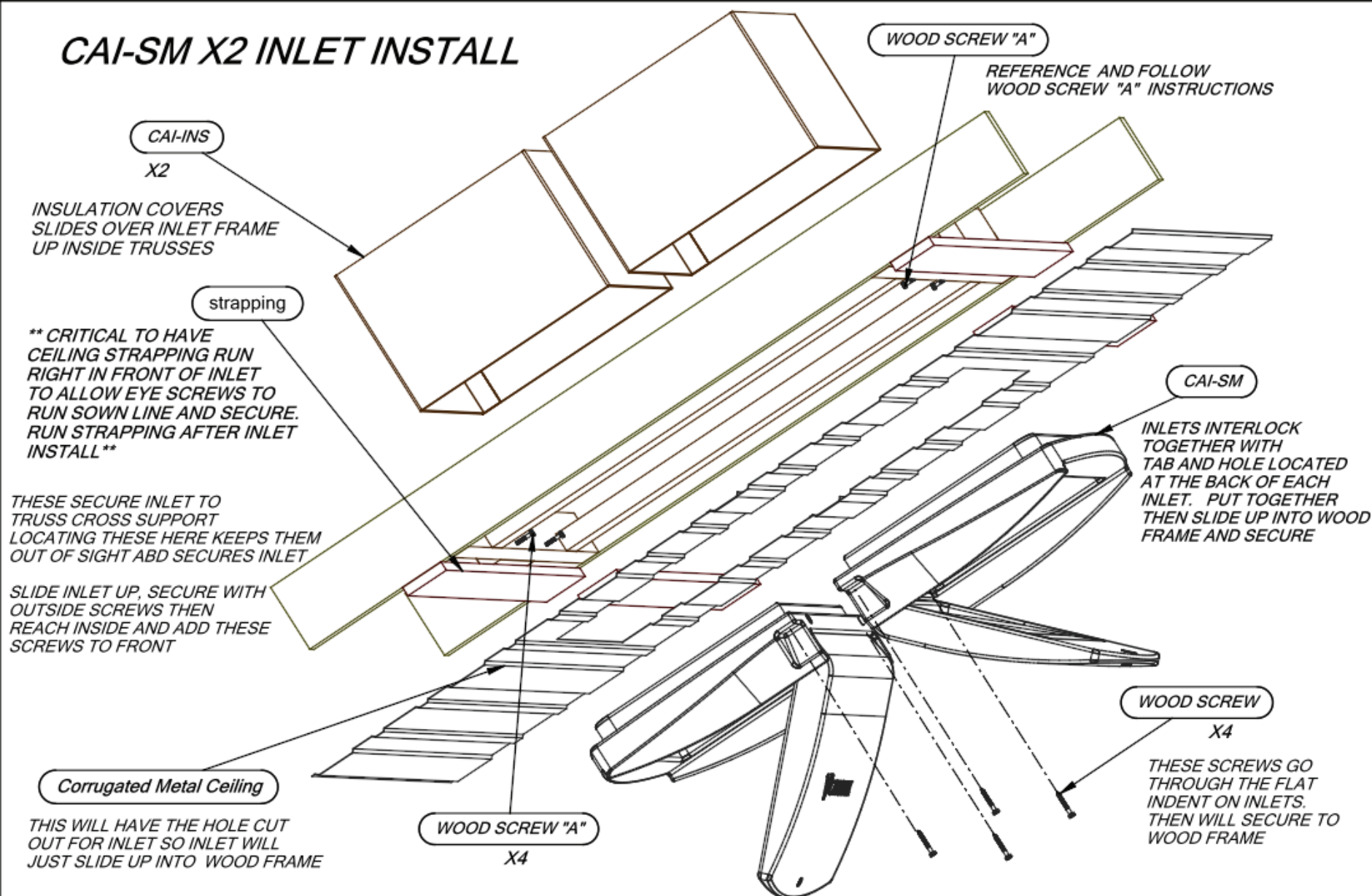




CAI-SM INLET INSTALL



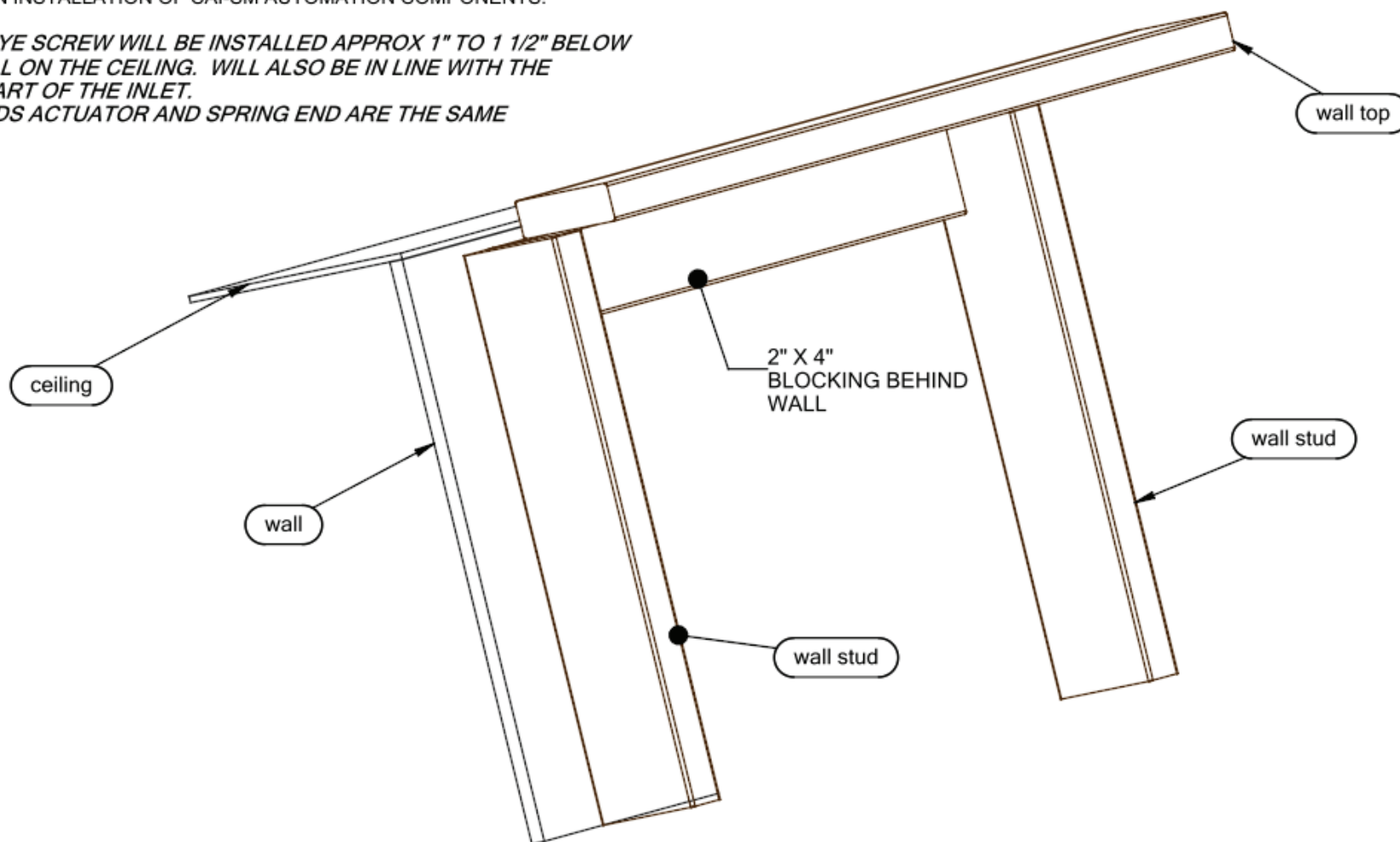
CAI-SM X2 INLET INSTALL



BLOCKING AT BOTH ENDS OF CAI-SM ROW IN WALLS

ADD 2"X4" PIECE BETWEEN STUDS AT TOP OF WALL. THE BOARD SHOULD BE FLUSH WITH THE INSIDE OF THE WALL TO MAKE INSTALL OF PLASTIC FLAT. THIS SHOULD BE PUT PLACE BEFORE PLASTIC ON WALL TO AVOID HAVING TO REMOVE PLASTIC OR ANYTHING ELSE UPON INSTALLATION OF CAI-SM AUTOMATION COMPONENTS.

NOTE: EYE SCREW WILL BE INSTALLED APPROX 1" TO 1 1/2" BELOW THE STEEL ON THE CEILING. WILL ALSO BE IN LINE WITH THE FRONT PART OF THE INLET.
BOTH ENDS ACTUATOR AND SPRING END ARE THE SAME

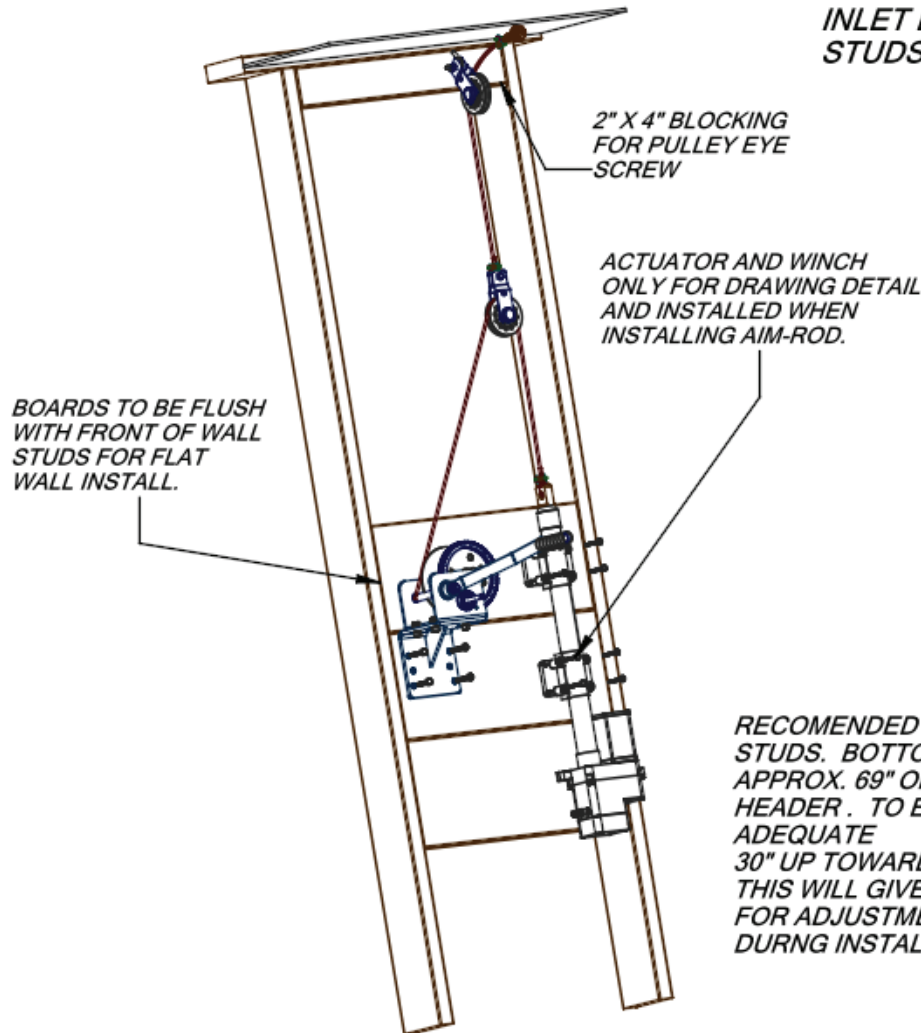


ACTUATOR BLOCKING RECOMENDATIONS

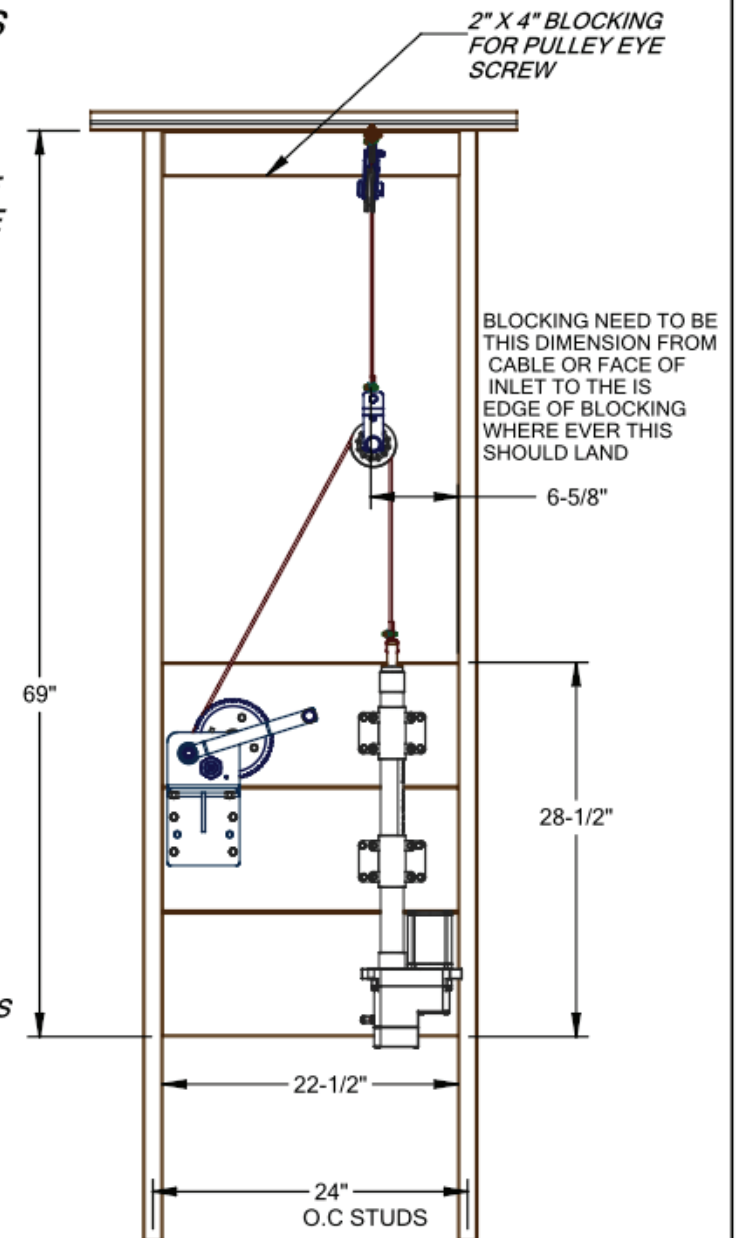
ACTUATOR BLOCKING IS IMPORTANT FOR SECURING THE ACTUATOR TO UPON INSTALL. THE ACTUATOR HAS A DESIRED HEIGHT OFF CEILING AND SO SHOULD THE BLOCKING TO SUPPORT THAT.

MINIMUM ACTUATOR BLOCKING * 22 1/2" X 28 1/2" *

FRAMING SHOWN AS IF INLET LINE IS IN MIDDLE STUDS



RECOMENDED 2" X 10" BETWEEN STUDS. BOTTOM OF BOARD AT APPROX. 69" OFF INSIDE OF TOP HEADER. TO ENSURE BLOCKING IS ADEQUATE 30" UP TOWARDS HEADER. THIS WILL GIVE ENOUGH ROOM FOR ADJUSTMENTS NEEDED DURNG INSTALL



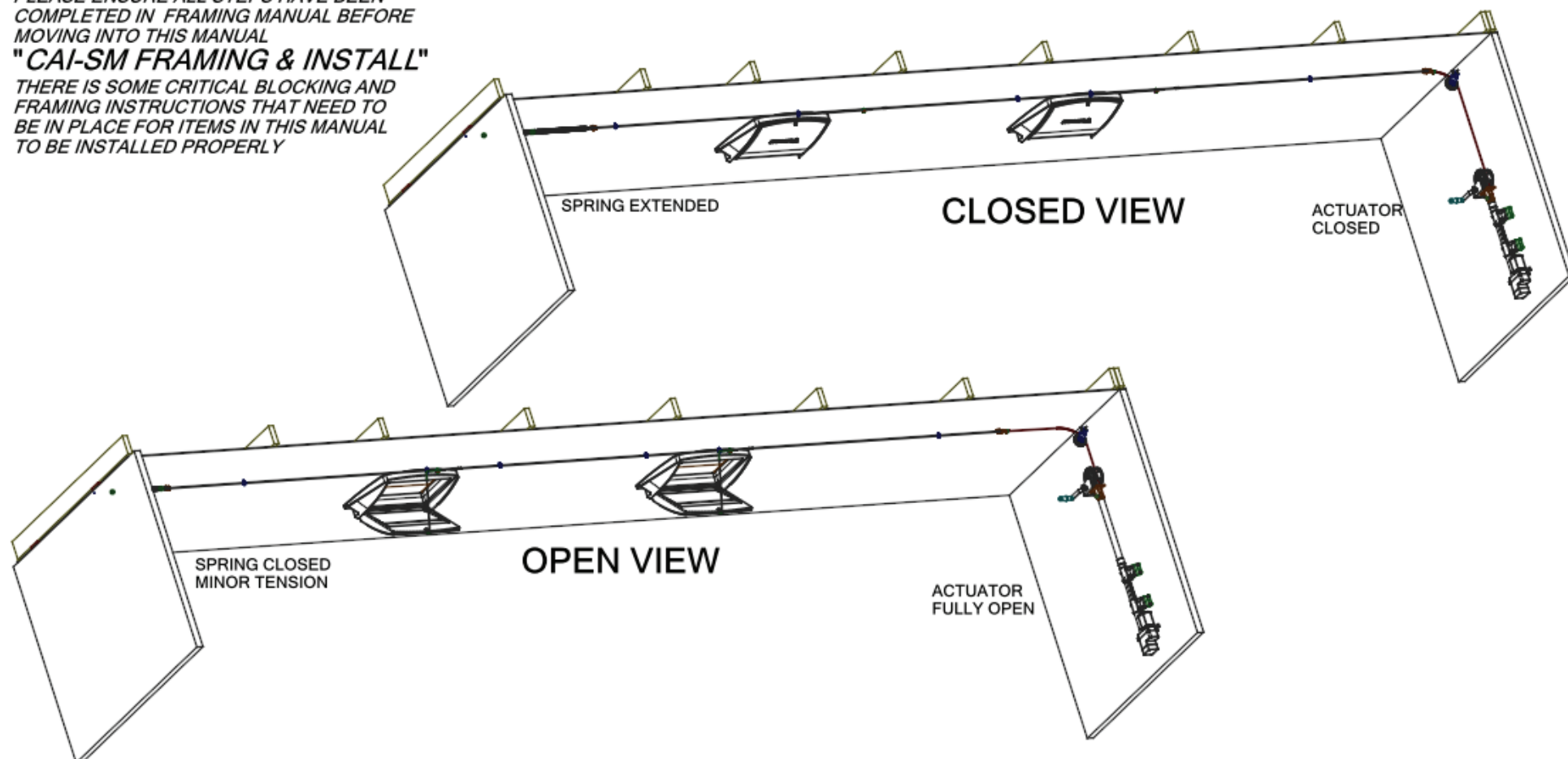
CEILING INLET AIR ROD/ SPRING INSTALLATION MANUAL

NOTE :

PLEASE ENSURE ALL STEPS HAVE BEEN COMPLETED IN FRAMING MANUAL BEFORE MOVING INTO THIS MANUAL

"CAI-SM FRAMING & INSTALL"

THERE IS SOME CRITICAL BLOCKING AND FRAMING INSTRUCTIONS THAT NEED TO BE IN PLACE FOR ITEMS IN THIS MANUAL TO BE INSTALLED PROPERLY



NOTE: BEFORE STARTING SHOULD MAKE SURE THERE IS ENOUGH BLOCKING BEHIND WALLS FOR EYE SCREWS, PULLEY AND ACTUATOR. THESE WILL NEED SOMETHING TO SECURE INTO. PLEASE REF CAI-SM FRAMING & INSTALL MANUAL



PRODUCT LINE
INSTRUCTION MANUAL

CURRENT REVISION
REV 1

INITIALS

M.M

PART DESCRIPTION:

CEILING INLET AIR ROD/ SPRING INSTALL MANUAL

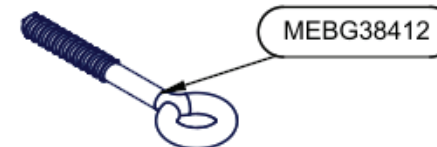
DWG NO.

CAI-SM-SPRING INSTALL

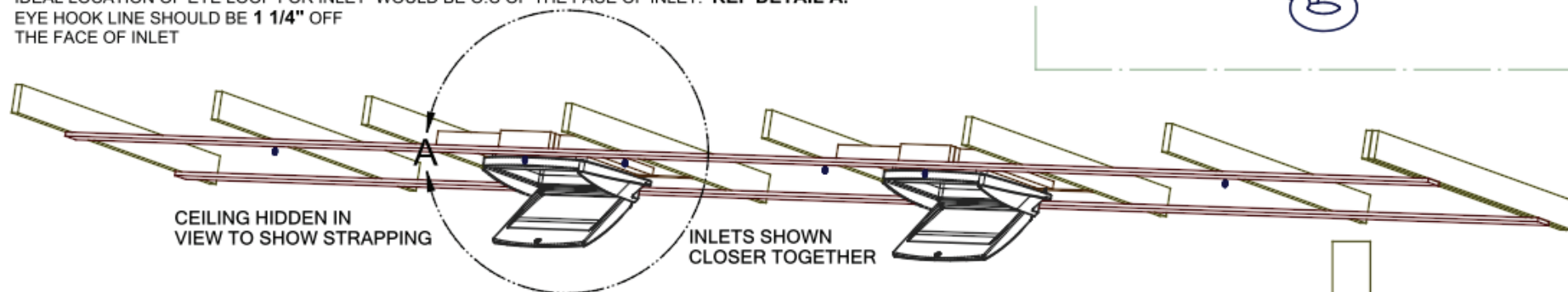
STEP 1 -- EYE HOOK INSTALLATION

GO DOWN ROW AND INSTALL EYE HOOKS ON EVERY OTHER TRUSS APPROX. **EVERY 8'**. IF USING THE TRUSS LOCATION. THERE SHOULD BE STRAPPING RAN DOWN THE SAME LINE UNDER CEILING ENSURE TO LEAVE THE APPROPRIATE DISTANCE AWAY FROM INLET EYE HOOK (**REF BOTTOM NOTE**) AND THEN RUN APPROX EVERY 8' -- TRY TO KEEP AWAY FROM CONNECTORS. IDEAL LOCATION OF EYE LOOP FOR INLET WOULD BE O.C OF THE FACE OF INLET. **REF DETAIL A.** EYE HOOK LINE SHOULD BE **1 1/4"** OFF THE FACE OF INLET

PARTS USED IN THIS STEP

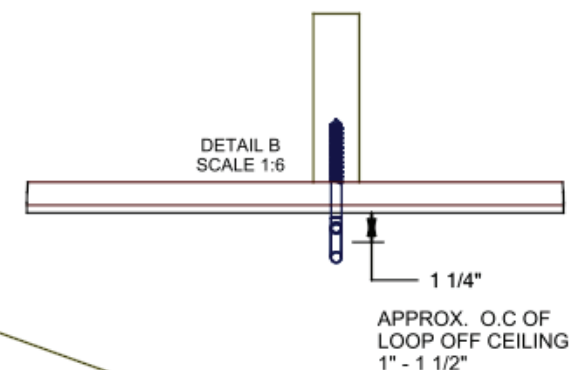


MEBG38412



THERE MUST BE AN EYE SCREW INSTALLED INFRONT OF EVERY INLET. THERE SHOULD BE ADDITIONAL 2X4'S AND STRAPPING IN PLACE FOR THIS TO HAPPEN. **REF -- RSO FOR FRAMING DETAILS**

THE LOOP HOLE SHOULD BE O.C OF THE INLET FACE. EYE HOOK SHOULD BE **1 1/4"** OFF FACE OF INLET.

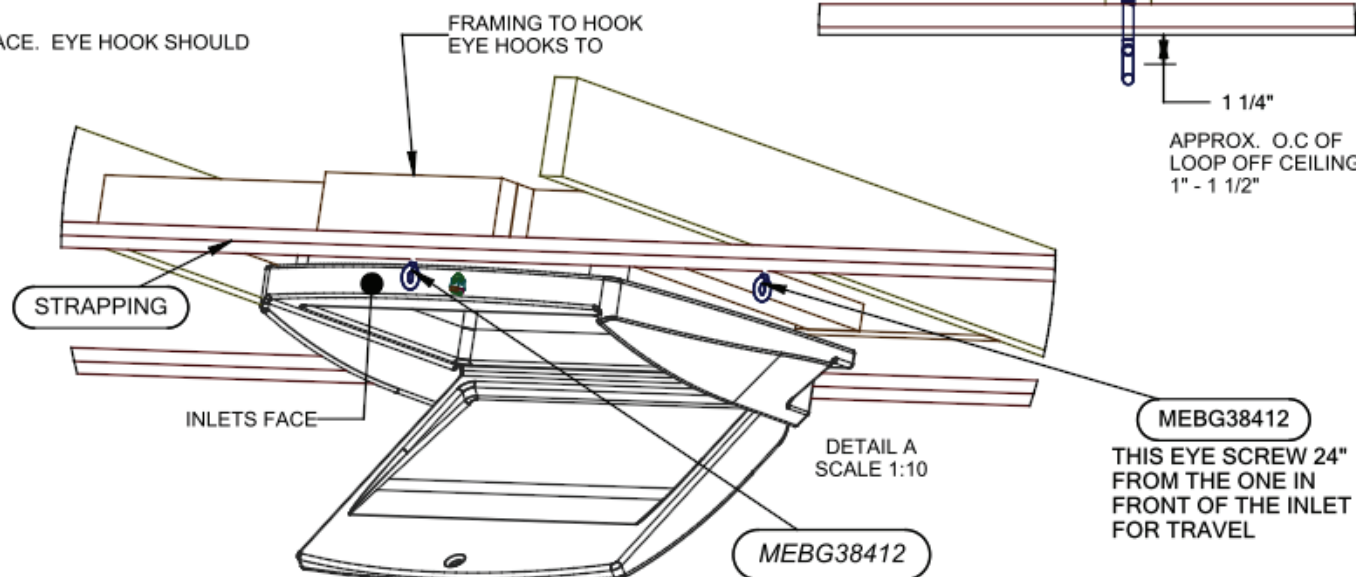


DETAIL B
SCALE 1:6

1 1/4"

APPROX. O.C OF
LOOP OFF CEILING
1" - 1 1/2"

NOTE:
WHEN INSTALLING EYE HOOKS
THE EYE HOOKS TO THE ACTUATOR
SIDE MUST BE AT LEAST 24" FROM
INLET CENTER EYE HOOK. THIS WILL
ALLOW THE ROPE CONNECTORS TO
TRAVEL THE 18" WITHOUT BINDING ON
NEXT EYE HOOK.



DETAIL A
SCALE 1:10

MEBG38412

THIS EYE SCREW 24"
FROM THE ONE IN
FRONT OF THE INLET
FOR TRAVEL

STEP 2 -- AIM ROD AND COUPLER INSTALLATION

START TO INSERT AIM ROD THROUGH LOOPS AT SPRING END. FIRST AIM ROD ON SPRING END WILL GET "CAI-EN" THREADED ON. THIS HAS TO BE DONE AFTER AIM ROD INSTALLED GOING TOWARDS SPRING END.

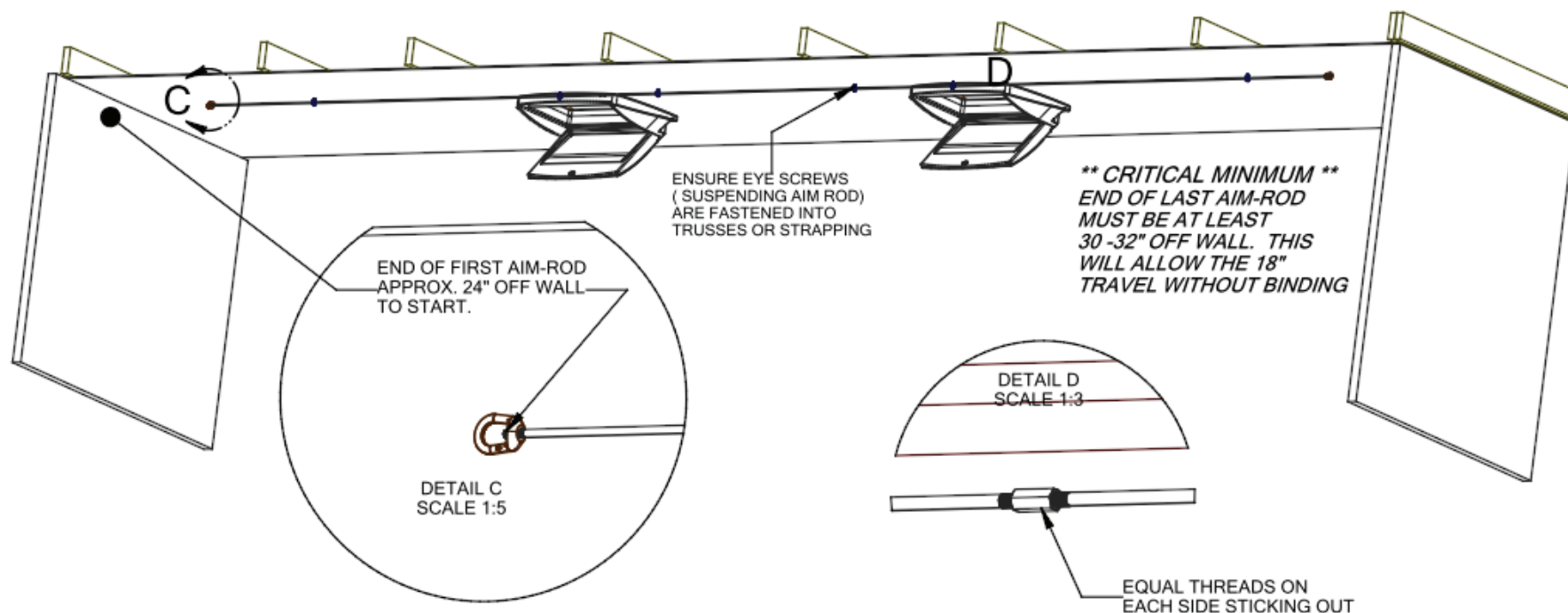
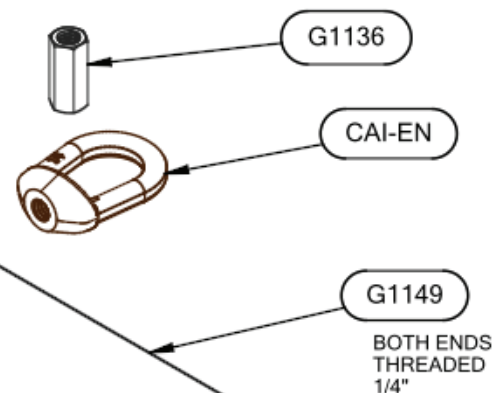
ONCE THAT IS COMPLETE MOVE ON DOWN THE ROW CONNECTING EACH AIM ROD WITH "G1136" CONNECTOR.

NOTE: HERE YOU CAN USE LOCKTITE IF YOU WANT BUT ENSURE YOU HAVE THE SAME AMOUNT OF THREAD STICKING OUT BOTH SIDES OF CONNECTOR.

WHEN YOU GET TO ACTUATOR END AND YOU HAVE MADE SURE YOU HAVE AT LEAST THE DESIRED MINIMUM DIMENSION OFF WALL THEN ADD "CAI-EN" TO THE END OF LAST AIM ROD.

NOTE: IF YOU ARE UNABLE TO REACH THE MINIMUM REQUIREMENT GO BACK ONE AIM ROD AND FOLLOW CONNECTION INSTRUCTIONS. CABLE WILL JUST LONGER.

PARTS USED IN THIS STEP



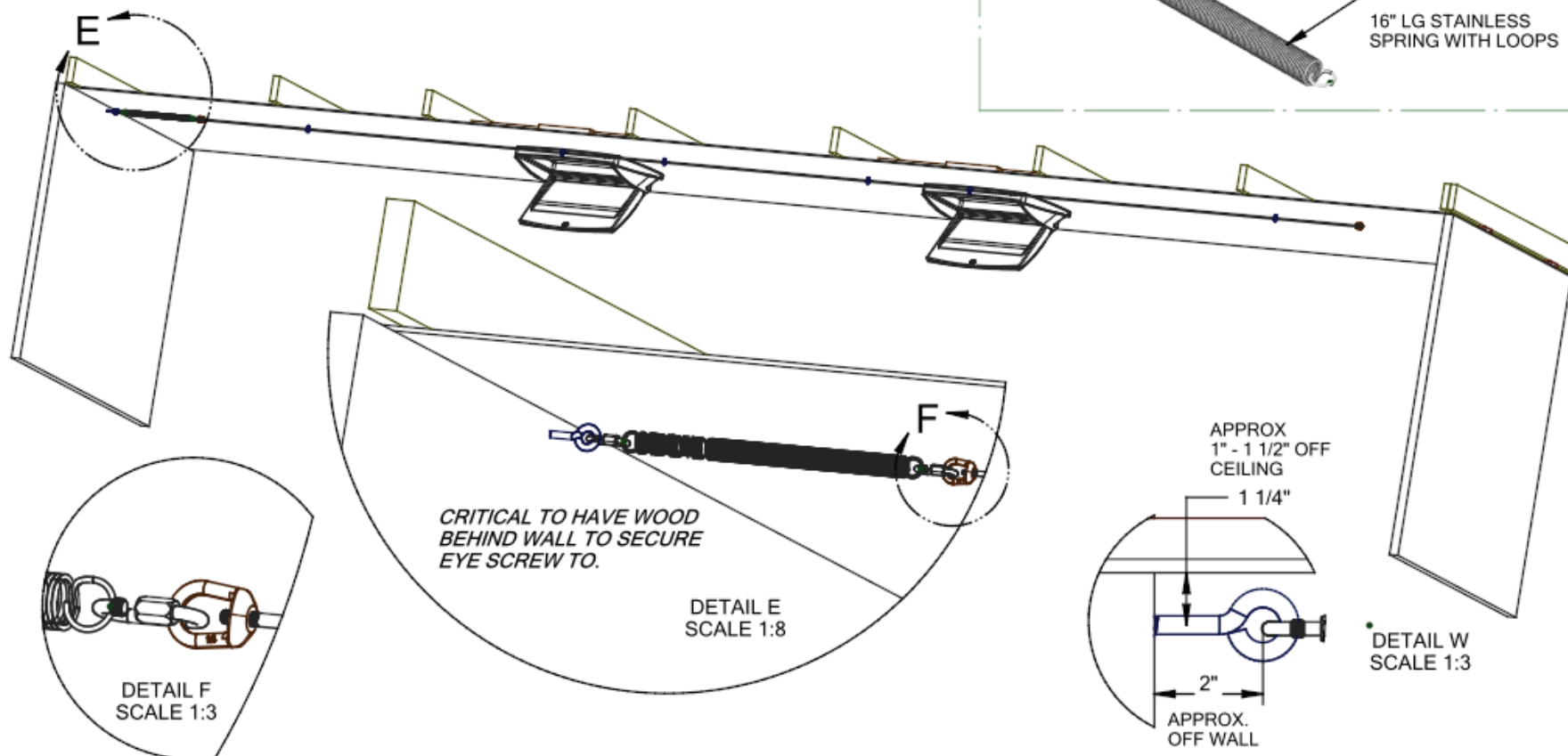
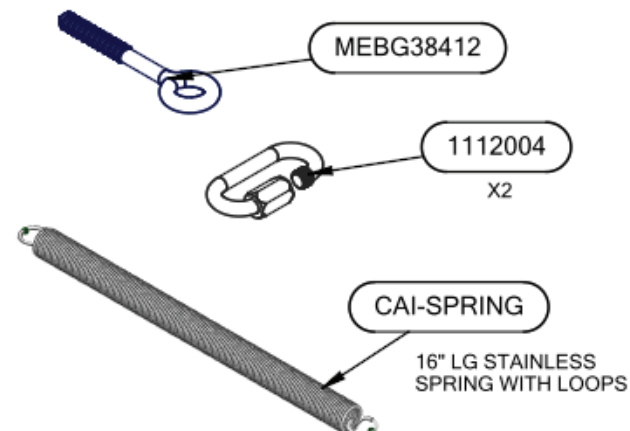
STEP 3 -- ATTACHING SPRING TO AIM ROD

FIRST ATTACH EYE BOLT "MEBG38412" TO OUTSIDE WALL. EYE LOOP SHOULD BE ON THE SAME LINE AS AIM ROD HOLDING EYE HOOKS. THAT DIMENSION IS 1" - 1 1/2" O.C FROM CEILING.

NOTE: THERE NEEDS TO BE WOOD BEHIND THE WALL TO ATTACH THE EYE SCREW TO SO IT WILL BE SECURE.

ATTACH SPRING TO AIM ROD AND WALL EYE SCREW USING "2 X 1112004" QUICK CONNECTS.

PARTS USED IN THIS STEP



STEP 4 -- ADDING EYE HOOK AND PULLEY

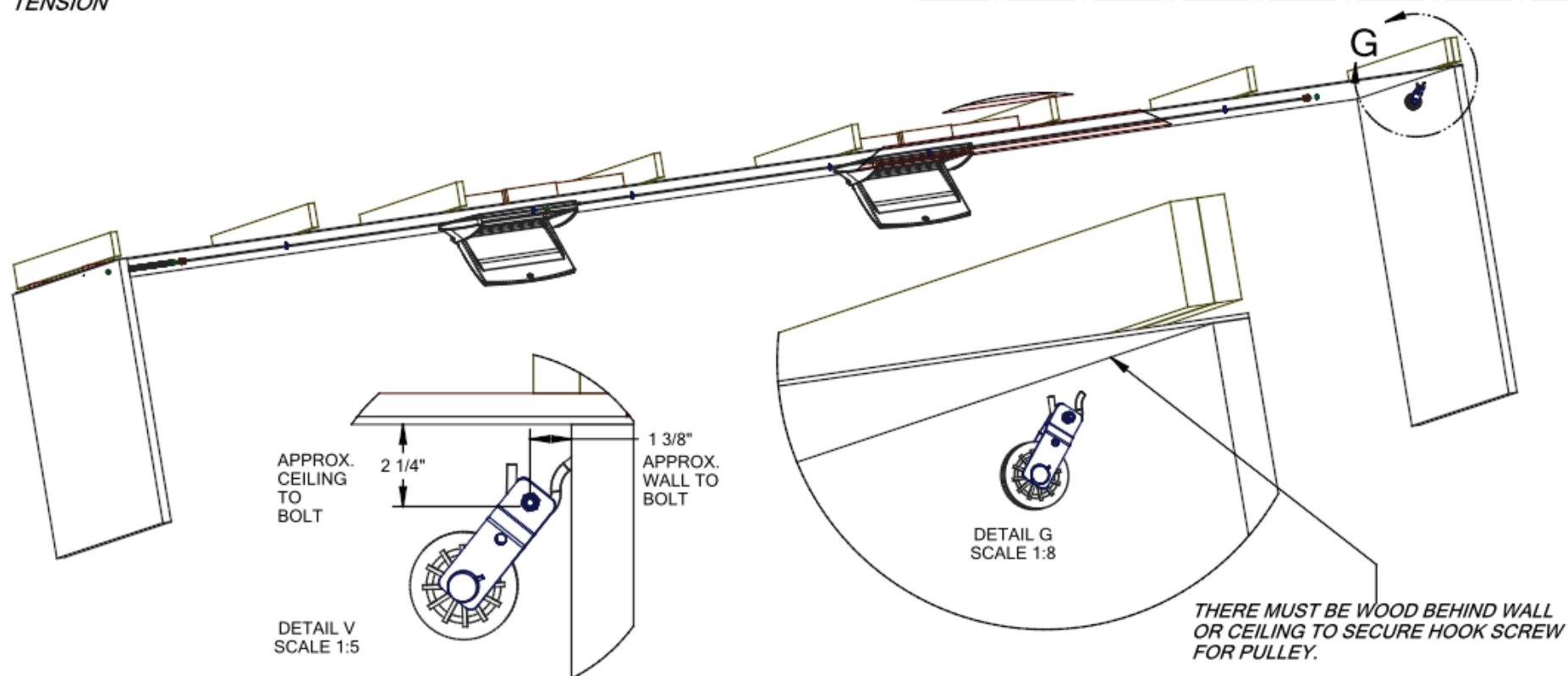
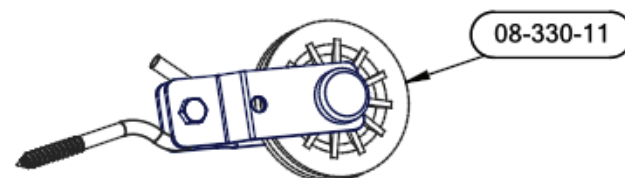
BEFORE SECURING EYE HOOK AND PULLEY "08-330-11" THERE MUST BE WOOD BEHIND THE WALL OR CEILING FOR SCREW TO GO INTO. YOU CAN ALSO GO INTO CORNER IF SPACE ALLOWS.

NOTE:

EYE HOOK SHOULD BE 1 1/4" TO 1 1/2" OFF WALL (O.C OF HOOK TO WALL)

THE EYE HOOK SHOULD ALSO BE ON SAME LINE AS THE ALREADY INSTALLED AIM ROD. TRY TO AVOID HAVING THE PULLEY TOO LOW FROM CEILING THIS WILL CAUSE THE AIM ROD TO GO DOWN TOWARDS PULLEY CAUSING TENSION

PARTS USED IN THIS STEP



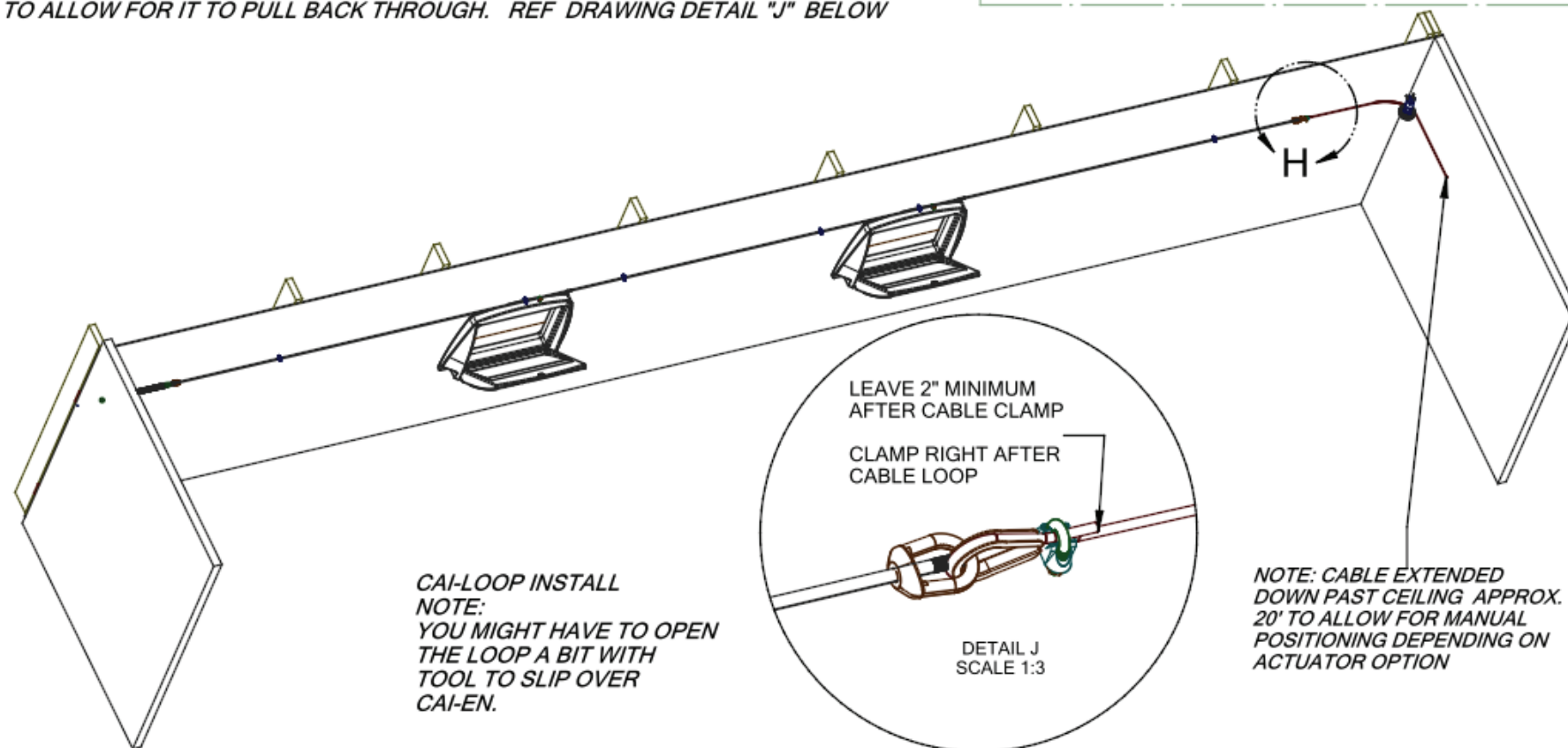
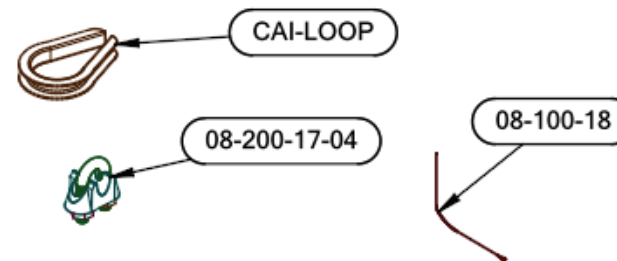
STEP 5 -- ATTACHING CABLE TO AIM ROD

USING "CAI-LOOP" ATTACH CABLE TO AIM ROD END NUT. FIRST OPEN AND SLIDE LOOP OVER END NUT. WHEN THIS IS COMPLETE YOU CAN THEN RUN THE CABLE THROUGH LOOP AND USE "08-200-17-04" CABLE CLAMP TO SECURE IN PLACE.

RUN CABLE THROUGH ALREADY INSTALLED PULLEY AND LEAVE 20' OF CABLE HANGING FROM CEILING. SUGGESTED TO LEAVE MORE AND CUT TO DESIRED LENGTH TO ROLL ONTO WINCH.

NOTE: KEEP AT LEAST 2" OF WIRE TAIL PAST WIRE CLAMP SO NOT TO ALLOW FOR IT TO PULL BACK THROUGH. REF DRAWING DETAIL "J" BELOW

PARTS USED IN THIS STEP



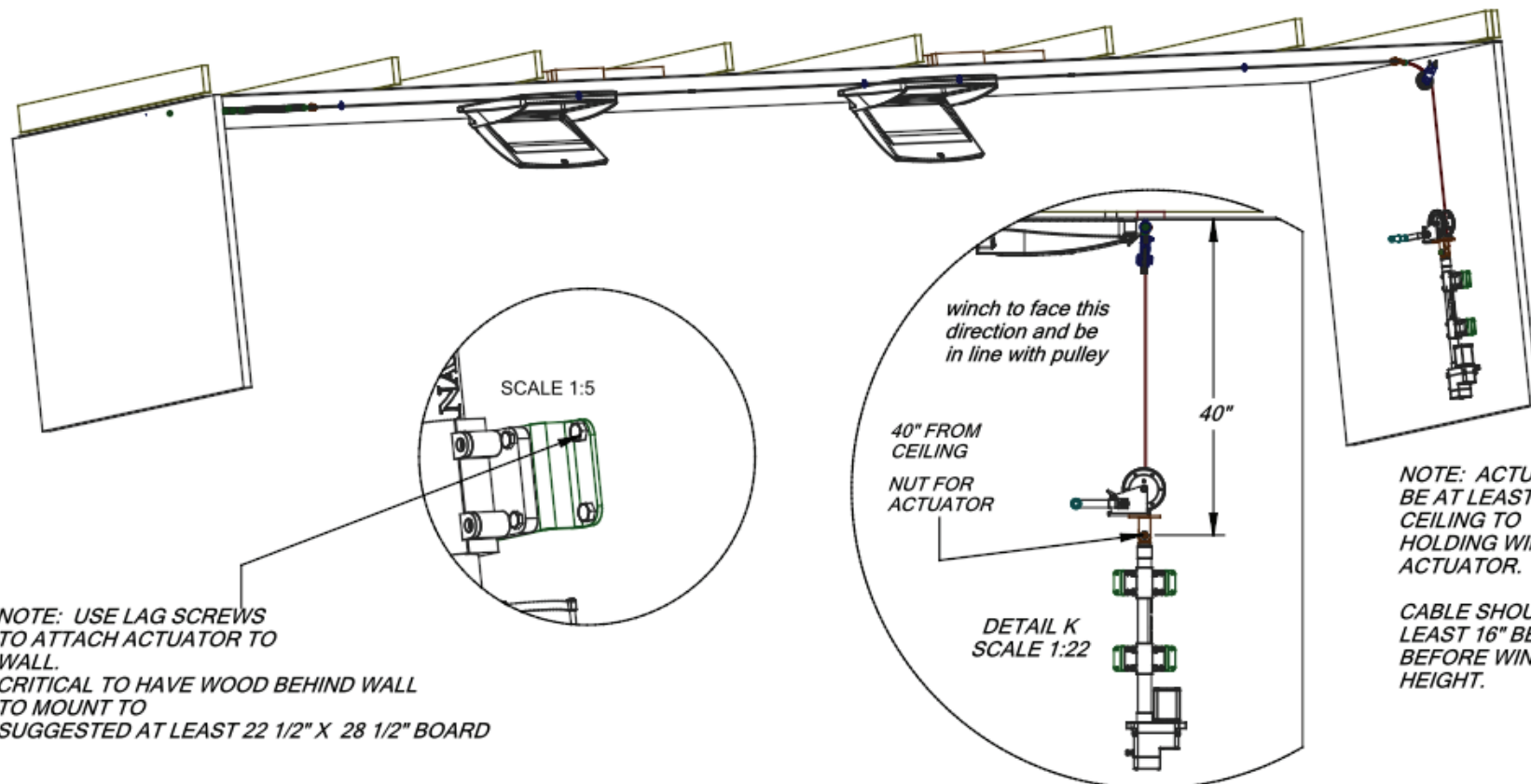
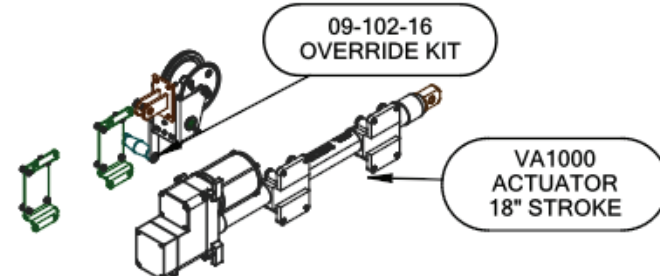
STEP 6 -- INSTALLING ACTUATOR AND OVERRIDE KIT

BEFORE INSTALLING ACTUATOR TO WALL PLEASE REFERENCE INSTRUCTIONS FOR OVERRIDE KIT FOR ACTUATOR 09-102-16.

LOCATE ACTUATOR ON WALL AT LEAST 40" TO O.C OF NUT SHOWN IN **DETAIL K**. THIS ALLOWS FOR ROOM FOR WINCH HANDLE WHEN ACTUATOR IS FULLY OPEN AND NOT HITTING CEILING.

NOTE: FOR LINING ACTUATOR UP WITH ALREADY INSTALLED PULLEY KEEP THE CABLE RUNNING DOWN THE OUTSIDE FACE OF WINCH SO CABLE IS NICE AND STRAIGHT

PARTS USED IN THIS STEP



NOTE: USE LAG SCREWS TO ATTACH ACTUATOR TO WALL. CRITICAL TO HAVE WOOD BEHIND WALL TO MOUNT TO SUGGESTED AT LEAST 22 1/2" X 28 1/2" BOARD

NOTE: ACTUATOR SHOULD BE AT LEAST 40" FROM CEILING TO O.C OF BOLT HOLDING WINCH TO ACTUATOR.

CABLE SHOULD HANG AT LEAST 16" BELOW WINCH BEFORE WINDING AT ANY HEIGHT.

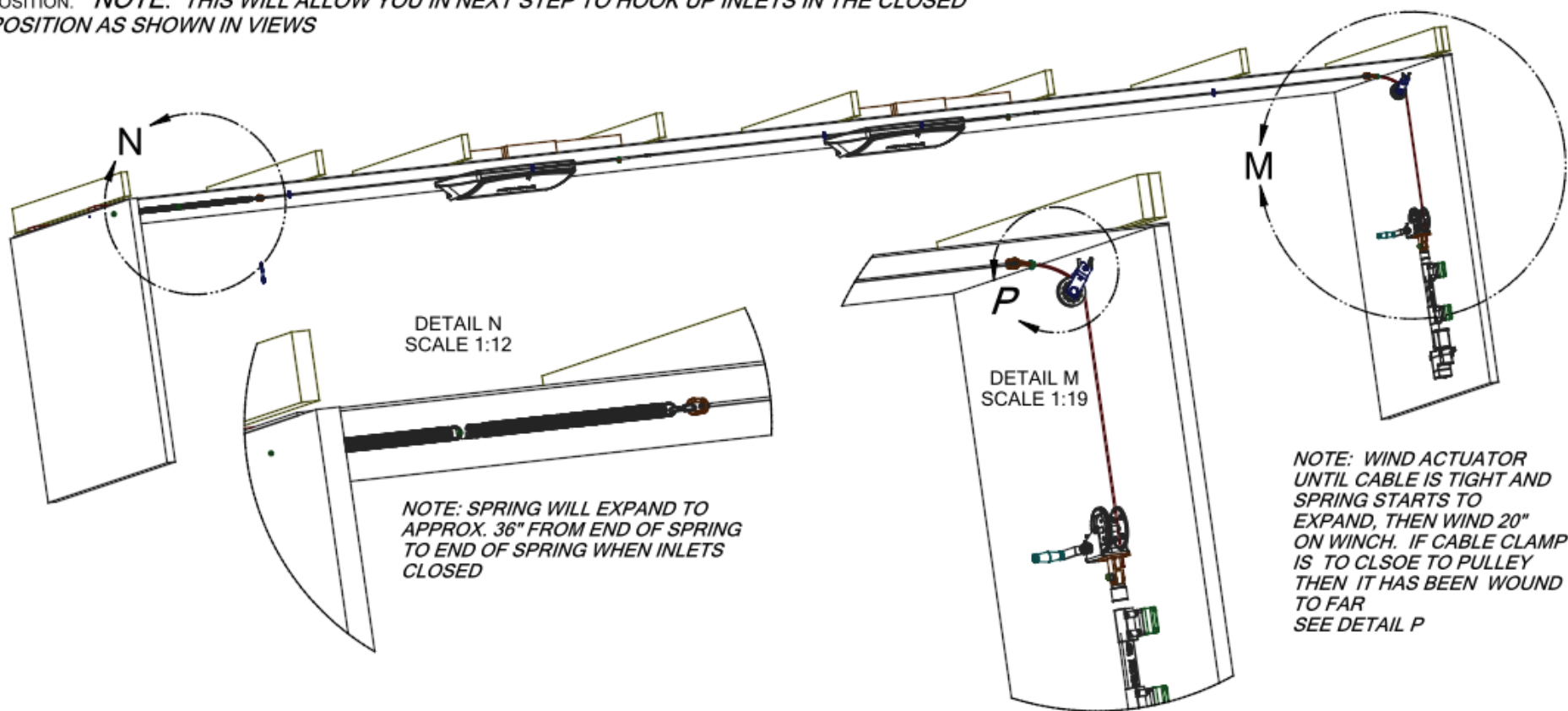
STEP 7 -- CABLE TO WINCH/ CLOSED INLET CABLE SETTING

ATTACH AND WIND EXTRA LENGTH OF CABLE TIGHT ON WINCH.
WIND UNTIL ALL EXTRA CABLE HAS BEEN WOUND AND THE LINE IS SNUG.

WHEN TIGHT YOU CAN NOW WIND THE WINCH AROUND 1 OR 2 FULL TURNS TO ALLOW FOR STARTING TENSION ON THE SPRING. THE SPRING SHOULD START TO EXTEND 1 -2".

NOTE: THIS WILL KEEP TENSION ON THE SPRING WHEN ACTUATOR OPENS THE INLETS AND KEEP THE SPRING FROM SAGGING.

AFTER THE STARTER TENSION HAS BEEN ESTABLISHED WIND APPROX. 20" OF CABLE ON TO THE WINCH TO EXTEND THE SPRING AND BRING THE AIM ROD TO THE INLET CLOSED POSITION. **NOTE: THIS WILL ALLOW YOU IN NEXT STEP TO HOOK UP INLETS IN THE CLOSED POSITION AS SHOWN IN VIEWS**



DETAIL P
SCALE 1:9

CRITICAL
DO NOT LET
CLAMP GET
TOO CLOSE TO
PULLEY IN
CLOSED
POSITION

DETAIL N
SCALE 1:12

**NOTE: SPRING WILL EXPAND TO
APPROX. 36" FROM END OF SPRING
TO END OF SPRING WHEN INLETS
CLOSED**

DETAIL M
SCALE 1:19

**NOTE: WIND ACTUATOR
UNTIL CABLE IS TIGHT AND
SPRING STARTS TO
EXPAND, THEN WIND 20"
ON WINCH. IF CABLE CLAMP
IS TOO CLOSE TO PULLEY
THEN IT HAS BEEN WOUND
TO FAR
SEE DETAIL P**

SPECIALTY ACTUATOR SET UP -- HALF PULL LAYOUT

AFTER CABLE IS ATTACHED TO AIM ROD RUN CABLE THROUGH CORNER PULLEY AND ATTACH TO SECONDARY PULLEY. THIS PULLEY WILL HANG THERE SUSPENDED AFTER ATTACHED. USE CABLE CLAMP WITH 1-2" TAIL TO ENSURE CABLE DOES NOT COME BACK THROUGH.

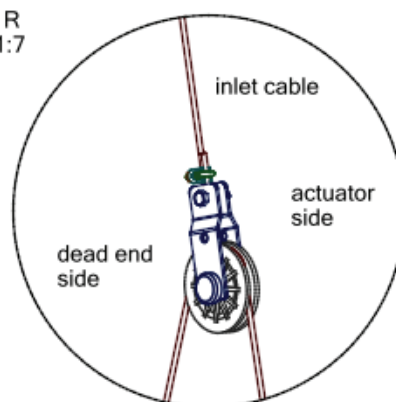
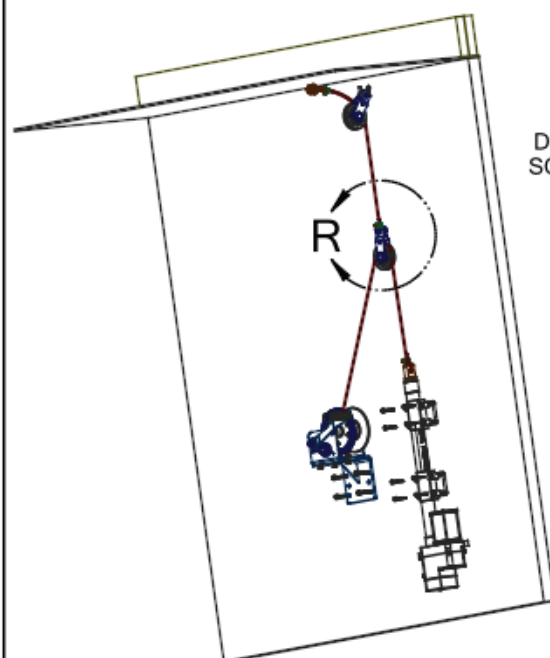
NOTE: MINIMUM DISTANCE TO START WITH OFF CEILING IS 22" - 24" TO O.C OF PULLEY.

LINE UP ACTUATOR SO IT IS IN LINE WITH THE OUTSIDE OF THE PULLEY TO KEEP CABLE STRAIGHT. LOCATE WINCH BESIDE ACTUATOR AND OFFSET AS PER DRAWING DIMENSIONS BELOW.

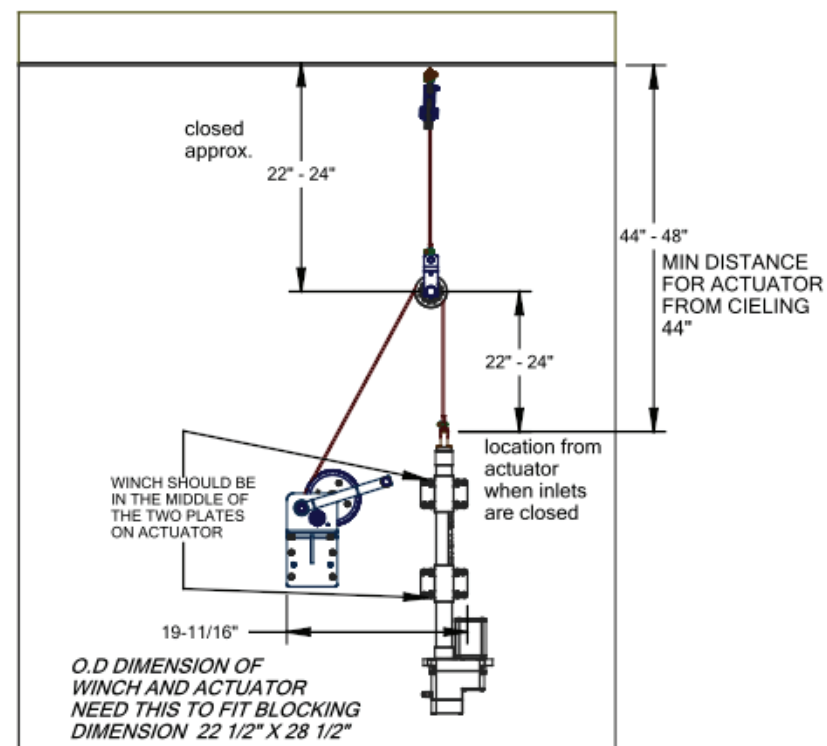
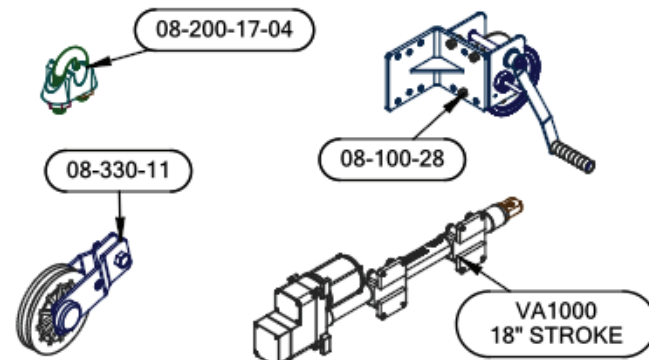
NOTE: BOTH ACTUATOR AND WINCH WILL NEED BLOCKING BEHIND WALL TO PROPERLY SECURE WOOD LAGS TO. SHOULD BE INSTALLED 22 1/2" X 28 1/2" MINIMUM.

ATTACH CABLE THROUGH ACTUATOR TOP HOLE WITH CABLE CLAMP SUPPLIED. RUN CABLE THROUGH PULLEY FROM AIM ROD AND ATTACH TO WINCH. ENSURE TO LEAVE 16" PAST WINCH TO GET THE WINCH STARTED WHEN TIGHTENING.

USE THE WINCH TO BRING THE SUSPENDED PULLEY DOWN TO REQUIRED LENGTH OFF ACTUATOR. NOTE: THIS PROCESS USES THE FULL 18" STROKE BUT WILL ONLY PRODUCE 9" OF TRAVEL ON INLET AIM ROD.



PARTS USED IN THIS STEP



STEP 8 -- ASSEMBLING INLET DOOR TO AIM ROD

ROPE THAT COMES IN PACKAGE **08-150-16** GETS FED THROUGH THE OUTSIDE (LOGO SIDE) TO THE INSIDE. THE ROPE WILL GO IN THROUGH HOLE, SLIDE A WASHER ON THE ROPE AND TIE IN A KNOT OR TWO. THIS WILL ALLOW THE ROPE TO NOT MAKE IT'S WAY OUT OF THE INLET. REF DETAIL U
NOTE: PULL TIGHT SO ROPE GOES SNUGLY INTO HOLE

TAKE OTHER END OF ROPE AND PUT IT THROUGH THE EYE SCREW CONNECTED TO THE CEILING THE AIM ROD GOES THROUGH. WHILE HOLDING THE INLET DOOR CLOSED ONCE AGAIN PULL THE ROPE TIGHT TO ENSURE THE KNOT IS SNUGLY IN THE INLET DOOR.

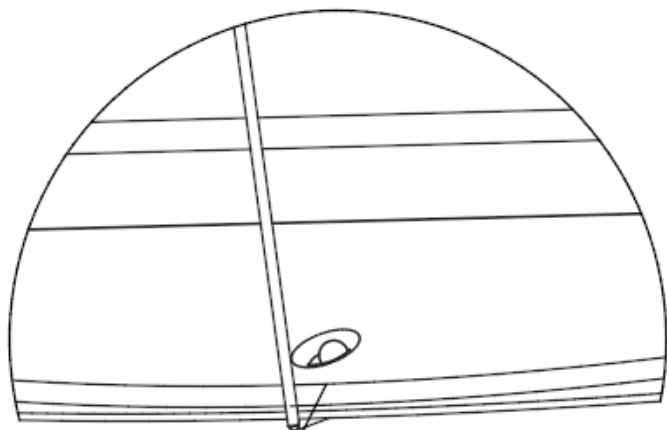
NOTE: AT THIS POINT KEEP TENSION ON THE ROPE TO KEEP KNOT INSIDE INLET DOOR SECURE.

FOLLOWING THE CRITICAL DRAWING IN DETAIL "T" BELOW ATTACH THE CABLE CLAMP 20" AWAY FROM THE INLET EYE SCREW AS WE ARE INSTALLING THESE DOORS WHEN THE SYSTEM IS FULLY CLOSED.
 NOTE: MAKE SURE TO READ THE CRITICAL DETAIL "T" DIAGRAM FOR DIMENSIONS NEEDED EITHER WAY. ALSO MAKE SURE CABLE CLAMP IS TIGHT AND SECURE.

CUT OFF ANY EXCESS ROPE YOU MIGHT HAVE AFTER INSTALLING THE CABLE CLAMP AS THIS WILL ONLY GET INTO THE WAY.

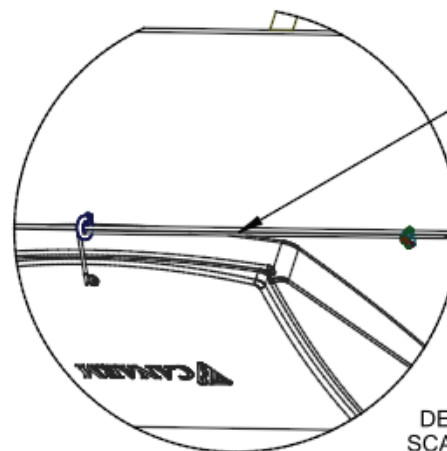
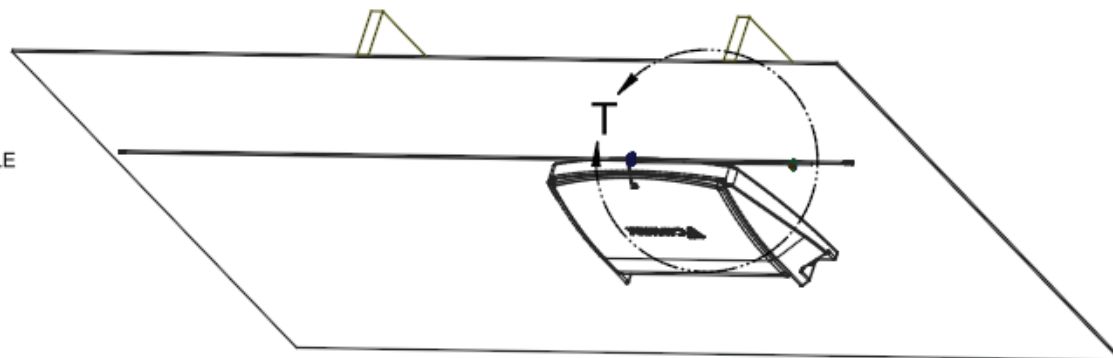
PARTS USED IN THIS STEP

CAI INLET PACKAGE 08-150-16
 INCLUDES
 ROPE, CABLE CLAMP AND WASHER



DETAIL U
 SCALE 1:3

ROPE UP THROUGH HOLE
 THEN THROUGH WASHER PROVIDED.
 TIE IN KNOT AND PULL TIGHT INTO HOLE.



DETAIL T
 SCALE 1:10

CRITICAL TO HAVE 20" SPACE
 BETWEEN CABLE CLAMP AND
 EYE SCREW IN FRONT OF INLET
 WHEN INLET CLOSED AND 20"
 FROM NEXT EYE SCREW TO
 ACTUATOR PULL SIDE WHEN
 OPEN TO ALLOW FOR FREE
 TRAVEL EITHER WAY.