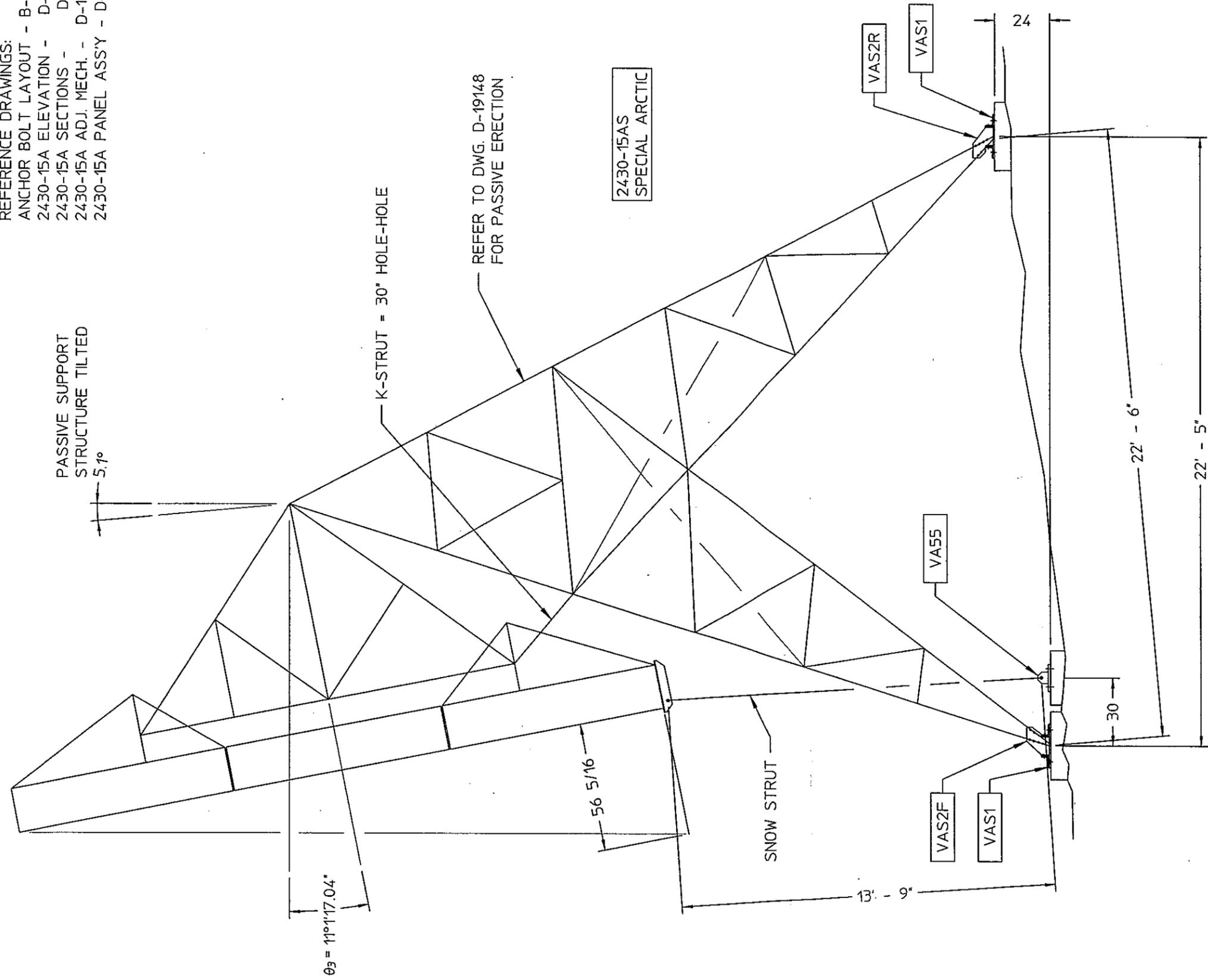


REFERENCE DRAWINGS:
 ANCHOR BOLT LAYOUT - B-122291
 2430-15A ELEVATION - D-19148
 2430-15A SECTIONS - D-19149
 2430-15A ADJ. MECH. - D-19150
 2430-15A PANEL ASSY - D-18701



ELEVATION

1/4" = 1'-0"

NOTE:
 SUBSTITUTE SHOE PLATES VAS2F AND VAS2R FOR VAS2 SHOES WHICH ARE SHOWN ON DRAWING D-19148. VAS2F AND VAS2R ARE SPECIAL SHOE PLATES WHICH ALLOW THE STANDARD PASSIVE SUPPORT STRUCTURE TO BE BOLTED IN THE TILTED POSITION AS SHOWN ABOVE

TILTED SHOE INSTALLATION
 TYEE BENCH PASSIVE REPEATER
 THE FOUR POOL DAM POWER AGENCY

valmont
 STRUCTURES
 1-877-467-4763
 1-800-547-2151
 Plymouth, IN
 Salem, OR

BY SM
 CK JM
 DATE 17JUN06
 S.O. 19164-06

REVISIONS			
REV	DESCRIPTION	DATE	BY/CK

MAXIMUM PIER REACTIONS

LOADING: 30 PSF +12" ICE @ 30 LB/CU-FT
60 PSF + 4" ICE @ 50 LB/CU-FT

2430-15AS PASSIVE REPEATER:

UPLIFT - 60 PSF NO ICE - 25.19 KIPS
DOWNLOAD - 60 PSF +4" ICE - 39.14 KIPS
SHEAR - 60 PSF +4" ICE - 18.72 KIPS

SNOW STRUT REACTIONS

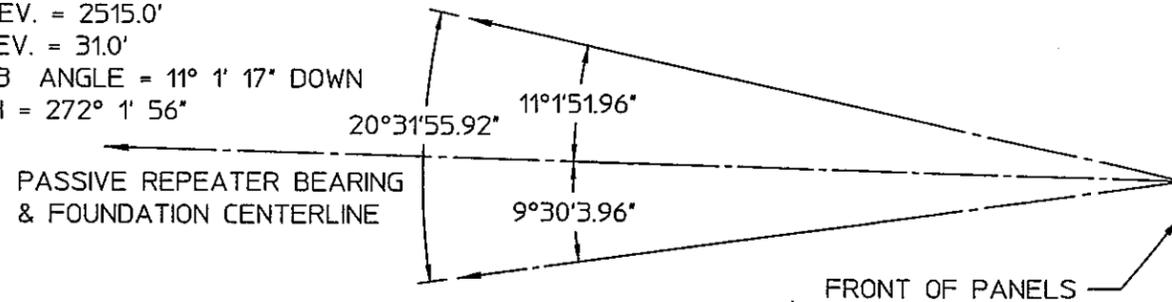
DOWNLOAD - 60 PSF +4" ICE - 32.45 KIPS
SHEAR - 60 PSF +4" ICE - 5.7 KIPS

REFERENCE DRAWING:

TILTED SHOE INSTALLATION - B-122276

SITE #2: POWER HOUSE
LATITUDE = 56° 13' 1.1" N
LONGITUDE = 131° 29' 11.4" W
SITE ELEV. = 25.0'
ANT ELEV. = 50.0'
VERTICAL ANGLE = 21° 44' 8" DOWN
AZIMUTH = 282° 40' 51"

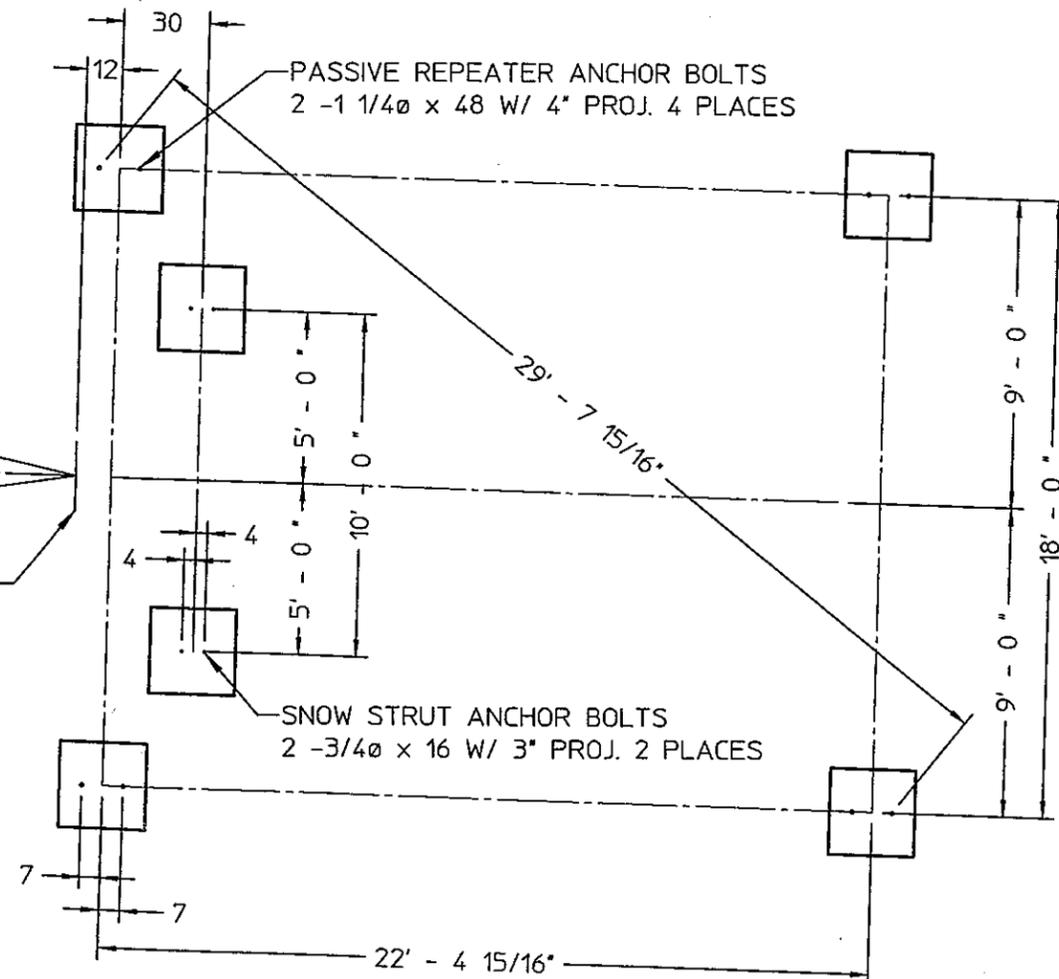
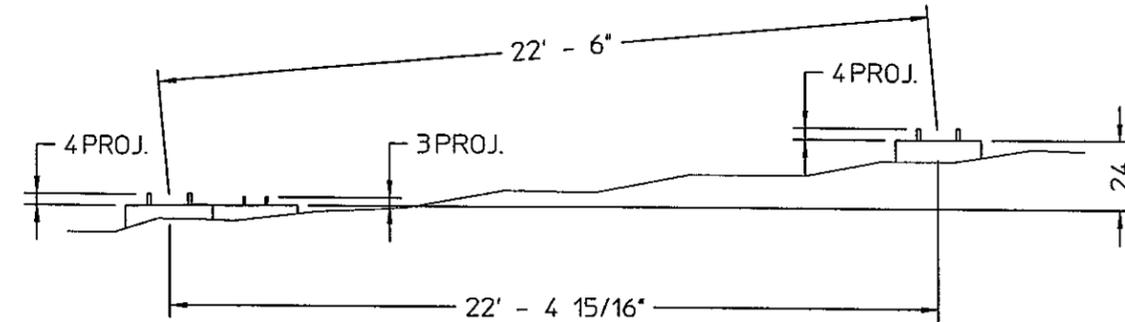
PASSIVE SITE: TYEE BENCH
LATITUDE = 56° 12' 47.7" N
LONGITUDE = 131° 27' 24.42" W
SITE ELEV. = 2515.0'
ANT ELEV. = 31.0'
THETA 3 ANGLE = 11° 1' 17" DOWN
AZIMUTH = 272° 1' 56"



SITE #1: BURNETT
LATITUDE = 56° 8' 12.6" N
LONGITUDE = 132° 24' 8.1" W
SITE ELEV. = 3425.0'
ANT ELEV. = 26.0'
VERTICAL ANGLE = 0° 2' 12" UP
AZIMUTH = 262° 8' 55"

NOTES:

- REACTIONS GIVEN ARE MAXIMUM CALCULATED, THESE MAY BE THE RESULTANTS OF FRONT OR REAR WIND LOAD WITH OR WITHOUT ICE.
- ICE WEIGHT: 12" ICE @ 31.2 LB/CU-FT.
- THE TOPS OF ALL FOOTINGS SHALL BE LEVEL WITH EACH OTHER WITHIN 1/4", UNLESS NOTED.



ANCHOR BOLT LAYOUT

3/16"=1'-0"

REVISIONS

REV	DESCRIPTION	DATE	BY/CK

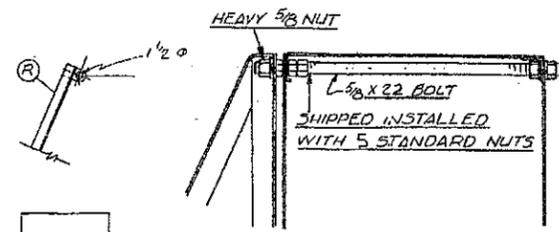
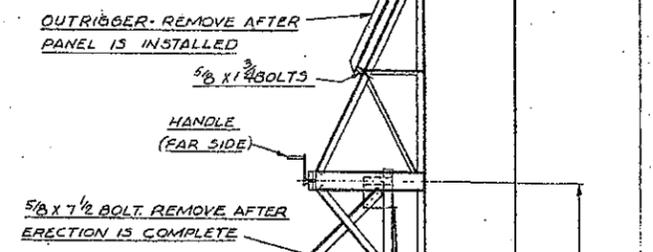
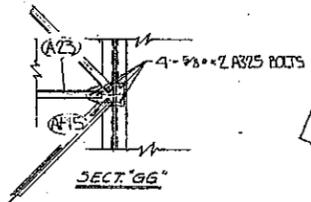
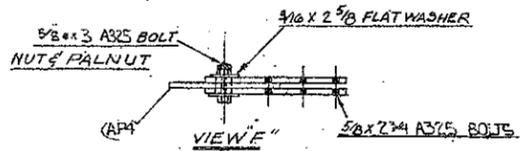
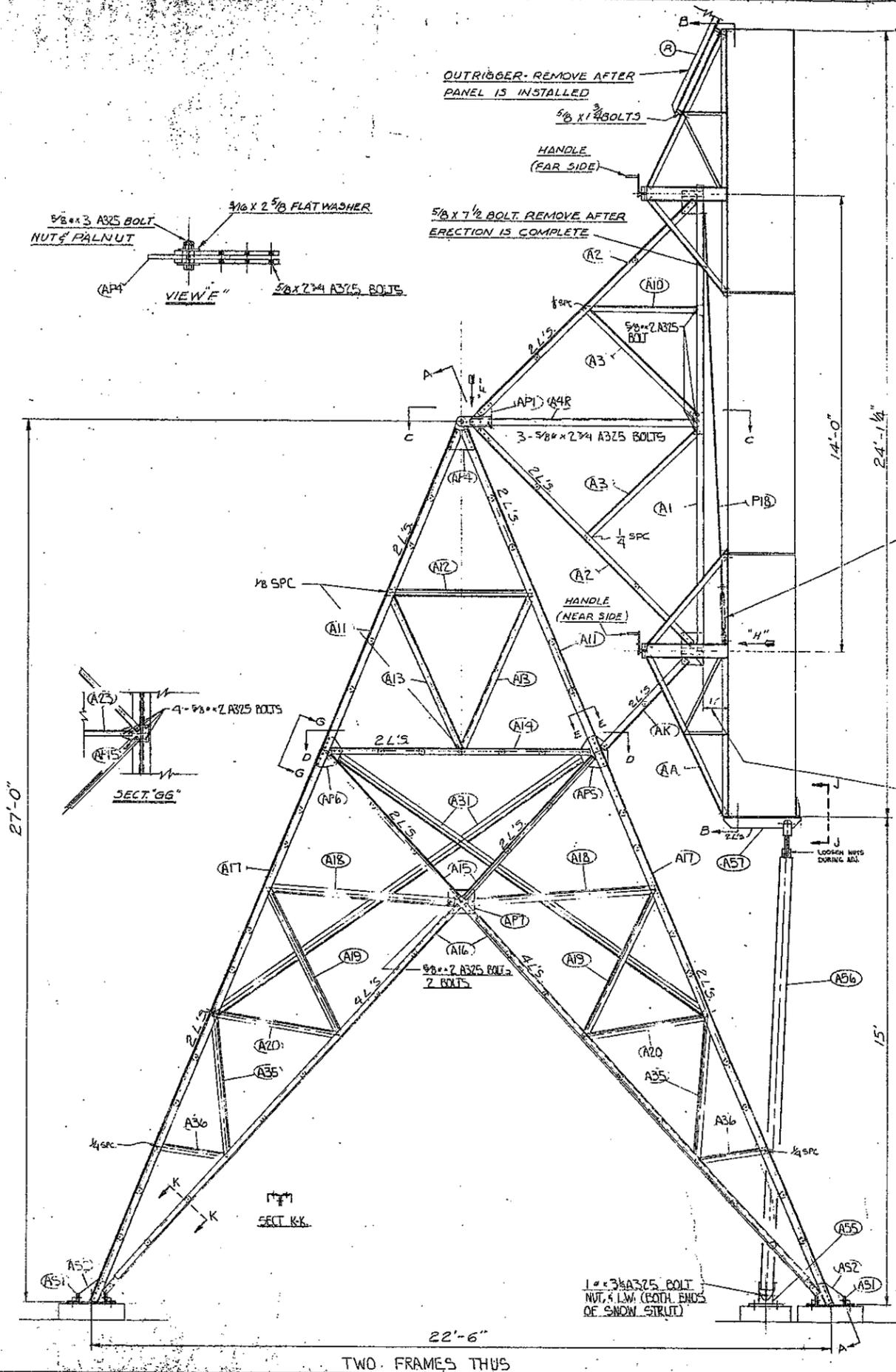
ANCHOR BOLT LAYOUT
2430-15AS @ TYEE BENCH
THE FOUR DAM POOL POWER AGENCY

BY	SM
CK	JM-SM
DATE	29 JUN 06
S.O.	19164-06

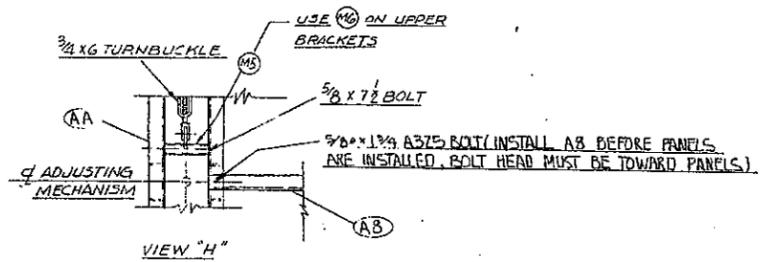
valmont
STRUCTURES
1-877-467-4763 Plymouth, IN
1-800-547-2151 Salem, OR

SHEET 1 OF 1

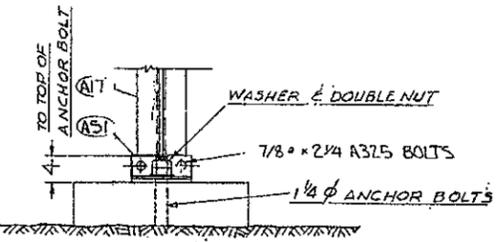
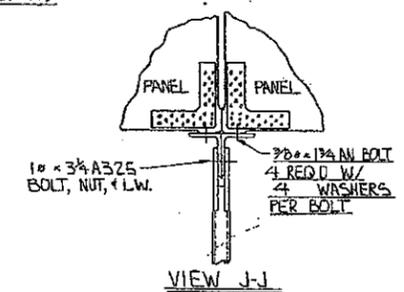
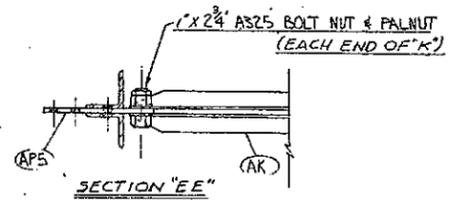
DWG. NO. B-122291



TURNBUCKLE - USE TO POSITION PANELS VERTICALLY FOR INSERTION OF LOCK BOLTS AND EASE OF ADJUSTMENT

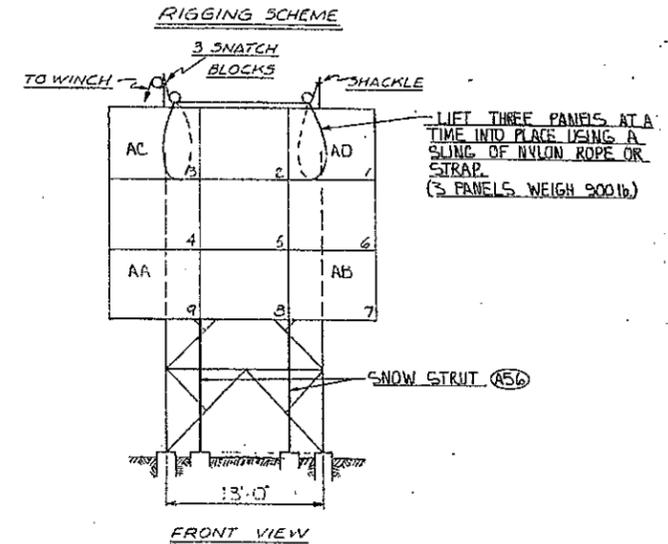


HOLD 11" DURING ASSEMBLY



PIECE PART NO. EXAMPLE
 5 V A16 - PIECE NO. 7430
 15' GROUND CLEARANCE

- GENERAL NOTES**
1. ALL BOLTS 5/8 x 2 1/4 A325 BOLTS UNLESS NOTED
 2. DOUBLE ANGLES SHIPPED WITH SPACERS INSTALLED
 3. INSTALL LOCKWASHERS UNDER ALL NUTS EXCEPT ELASTIC STOPNUTS.



REFERENCE DRAWINGS
 PARTS LIST B-19154 75HT
 SECTIONS D-19149
 ADJUSTING MECHANISM D-19150
 PANEL ASSEMBLY B-18701

US PATENT 2,966,033
 CANADIAN PATENT 643,002

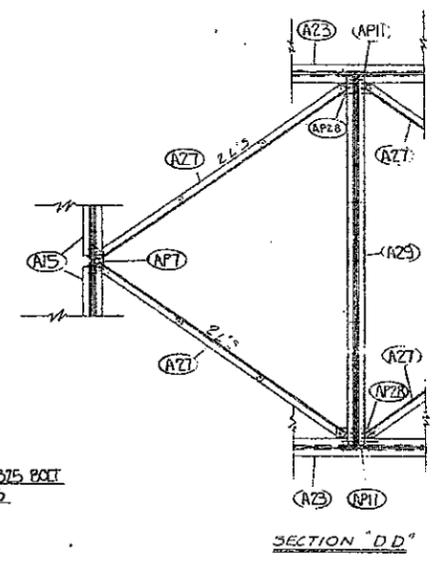
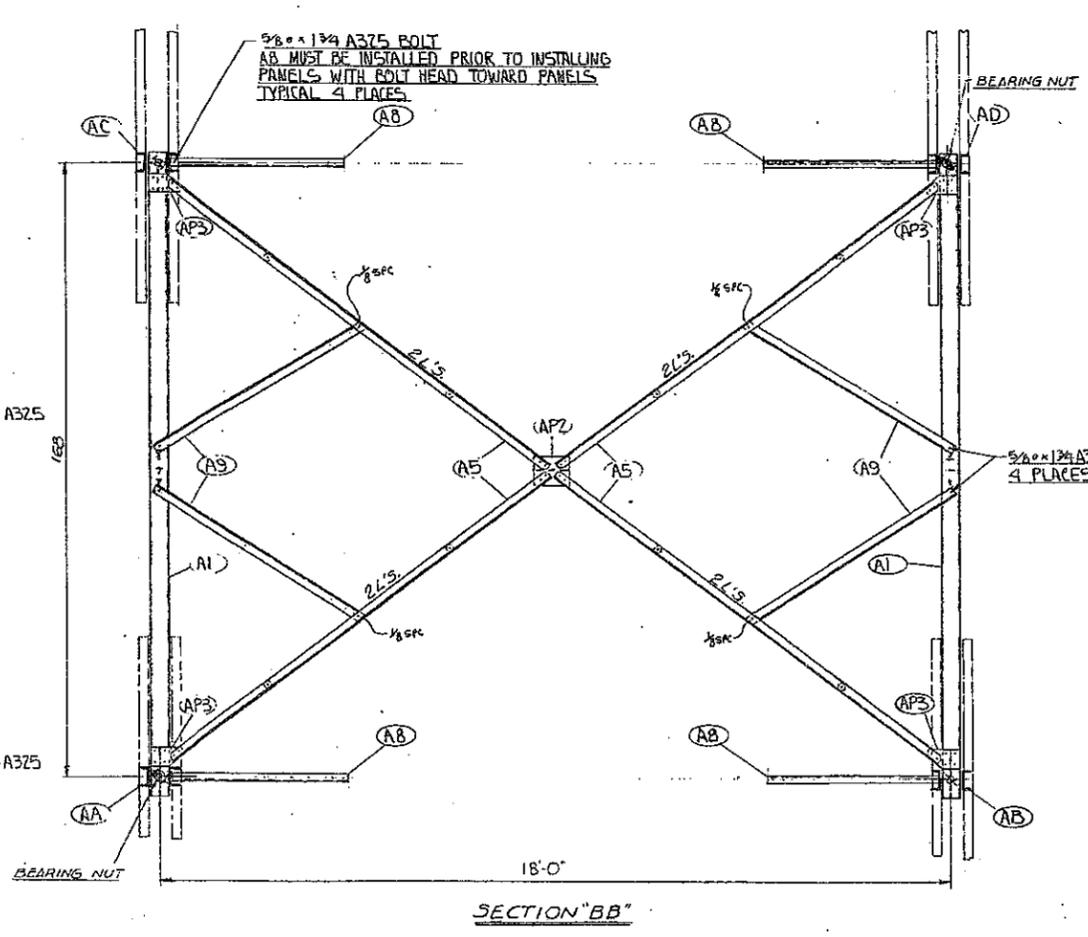
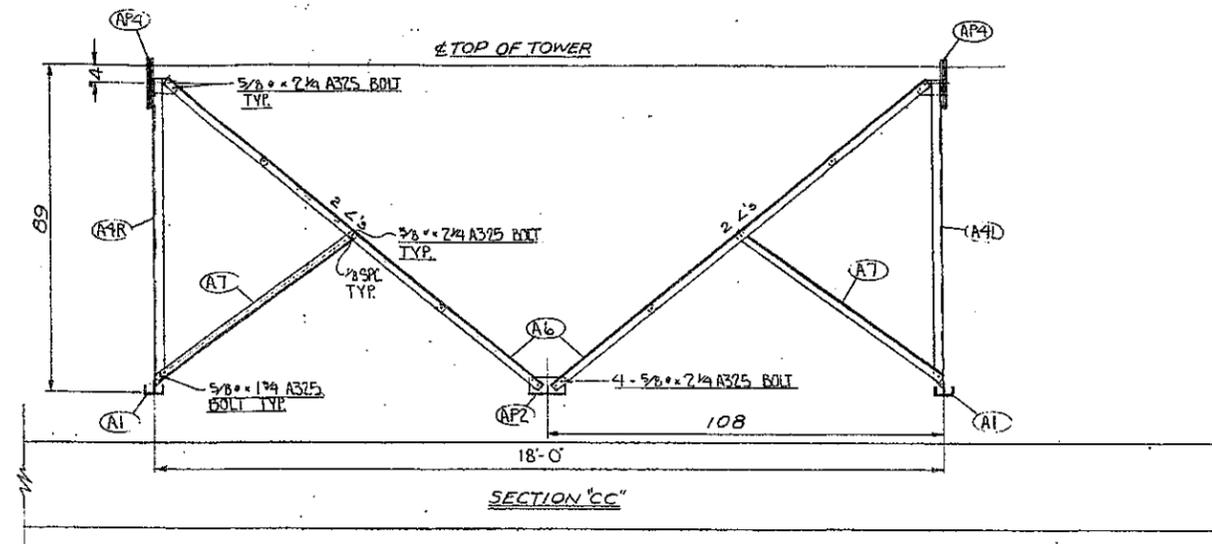
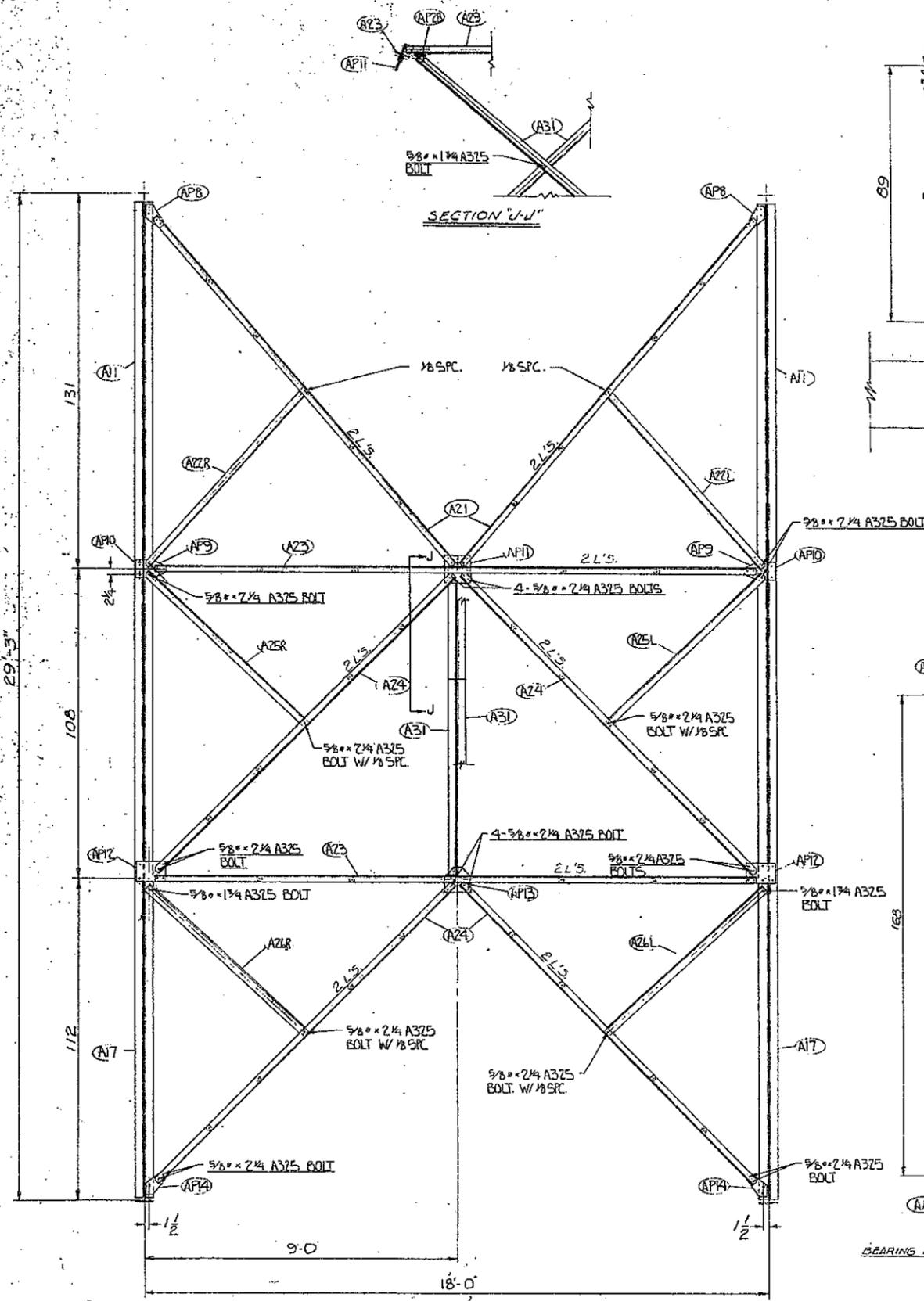
2430-15A ARCTIC PASSIVE	
SIDE ELEVATION	
MICROFLECT COMPANY 3575 25TH ST S.E. SALEM, OREGON	
SCALE: 2" = 1'-0"	DATE 24 MAY 74
DLD/DH	DWG. D-19148

TWO FRAMES THUS

- GENERAL NOTES**
1. ALL BOLTS 5/8" x 2" A325 BOLTS UNLESS NOTED
 2. DOUBLE ANGLES SHIPPED WITH SPACERS INSTALLED.
 3. INSTALL LOCKWASHER UNDER ALL NUTS EXCEPT ELASTIC STOPNUTS.

PIECE-PART NO. EXAMPLE

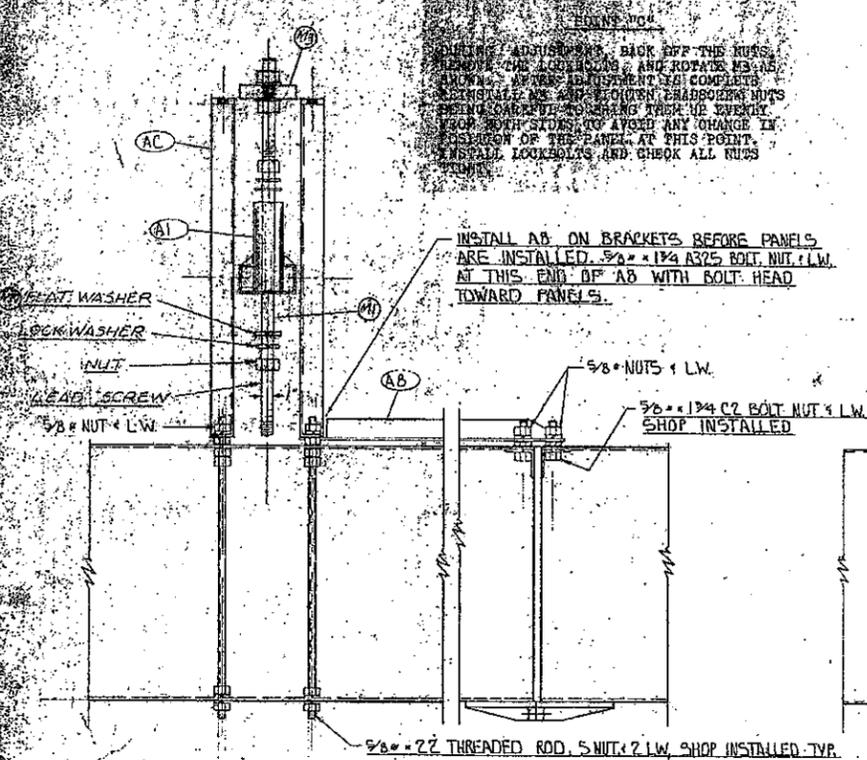
5 V A7 ← PIECE NO.
2430
15' GROUND CLEARANCE



US PATENT 2,968,033
CANADIAN PATENT 643,002

2430-15A ARCTIC PASSIVE	
SECTIONS "AA-DD"	
MICROFLECT COMPANY 3575 25TH ST. S.E. SALEM OREGON.	
SCALE: 1/2" = 1'-0"	DATE: 24 MAY 74
DLG/DH	CWG-D-19149

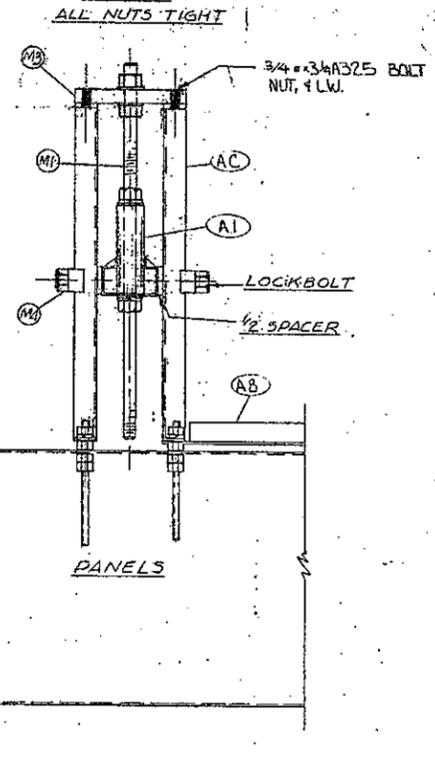
ADJUSTING POSITION



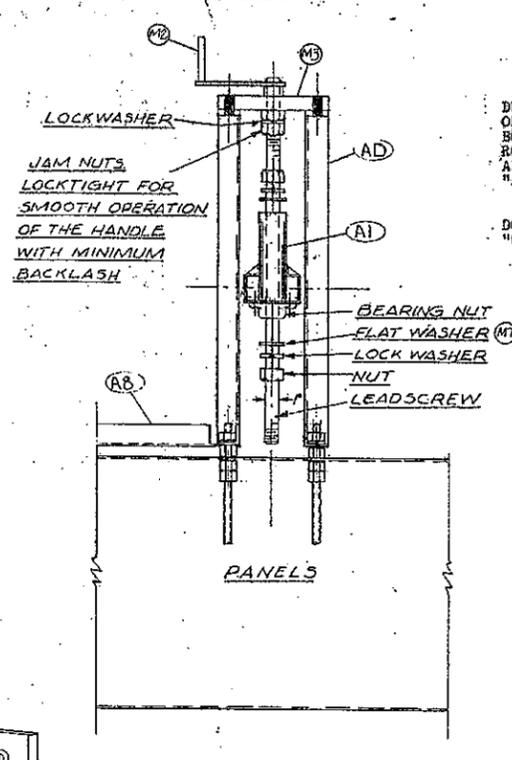
POINT "D"
 DURING ADJUSTMENT, BACK OFF THE NUTS ON THE LEADSCREW AND REMOVE THE LOCK BOLTS. TEN TURNS OF THE HANDLE WILL ROTATE THE UNIT 25.5 MINUTES OF ARC ABOUT A HORIZONTAL AXIS THROUGH POINTS "A" AND "B".

INSTALL AB ON BRACKETS BEFORE PANELS ARE INSTALLED. 5/8" x 1 1/4" A325 BOLT NUT & LW AT THIS END OF AB WITH BOLT HEAD TOWARD PANELS.

LOCKED POSITION ALL NUTS TIGHT



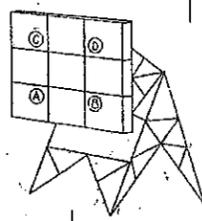
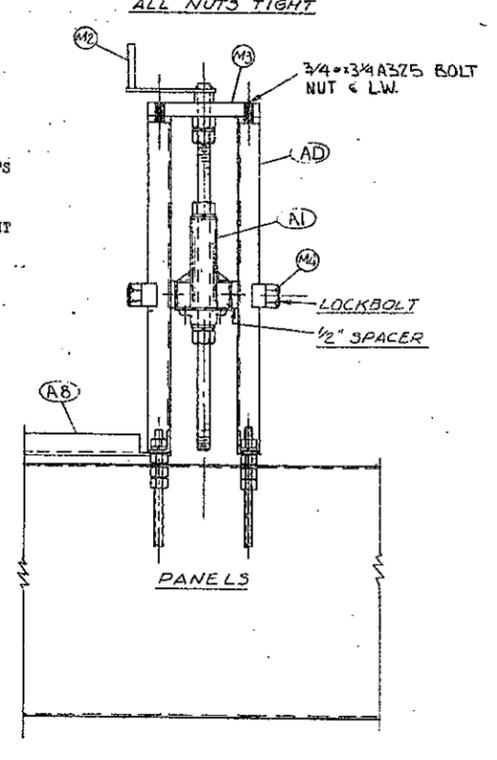
ADJUSTING POSITION



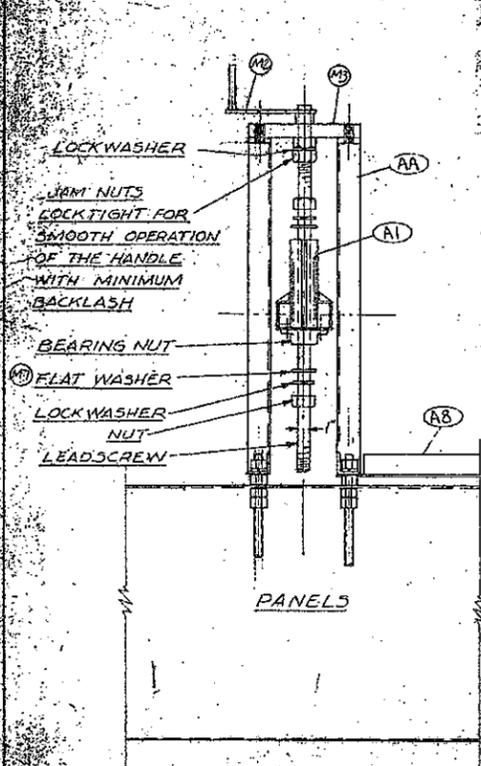
POINT "D"
 DURING ADJUSTMENT, BACK OFF THE NUTS ON THE LEADSCREW AND REMOVE THE LOCK BOLTS. TEN TURNS OF THE HANDLE WILL ROTATE THE UNIT 25.5 MINUTES OF ARC ABOUT A HORIZONTAL AXIS THROUGH POINTS "A" AND "B".

CAUTION!
 DO NOT ROTATE THIS HANDLE UNLESS POINT "C" IS IN THE "ADJUSTING" POSITION.

LOCKED POSITION ALL NUTS TIGHT



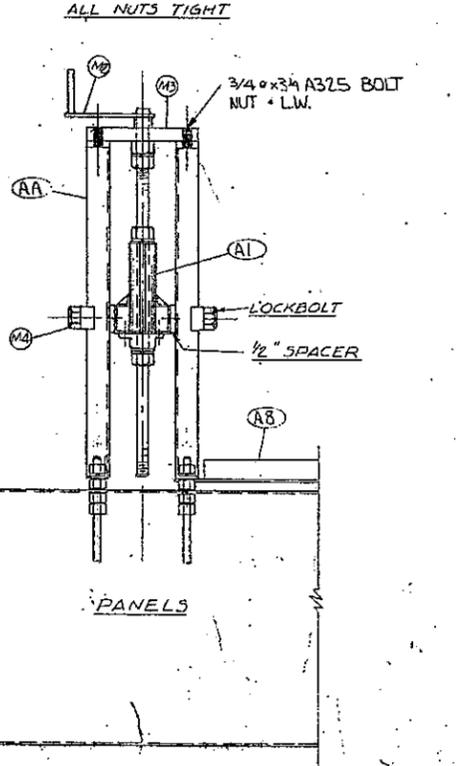
ADJUSTING POSITION



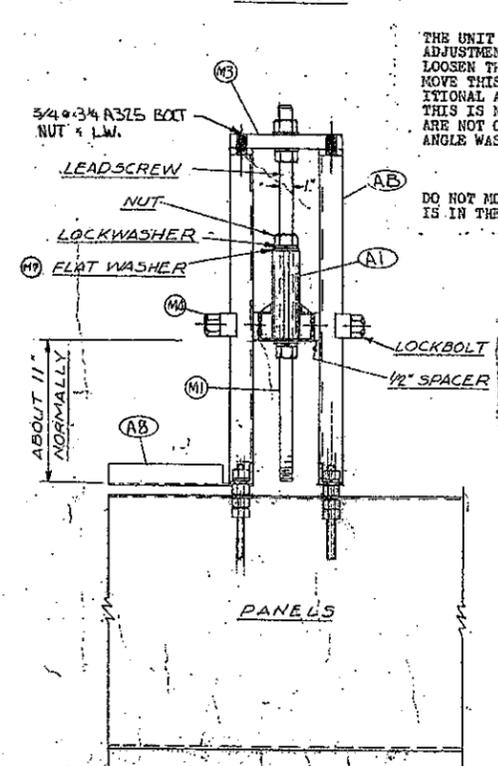
POINT "A"
 DURING ADJUSTMENT, BACK OFF THE NUTS ON THE LEADSCREW AND REMOVE THE LOCK BOLTS. TEN TURNS OF THIS HANDLE WILL ROTATE THE UNIT 20.2 MINUTES OF ARC ABOUT A VERTICAL AXIS THROUGH POINTS "B" AND "D".

CAUTION!
 DO NOT ROTATE THIS HANDLE UNLESS POINT "C" IS IN THE "ADJUSTING" POSITION.

LOCKED POSITION ALL NUTS TIGHT

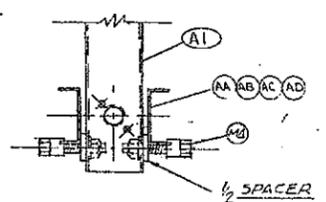


LOCKED AND ADJUSTING POSITION



POINT "B"
 THE UNIT PIVOTS ABOUT THIS POINT DURING ADJUSTMENT AND IT IS ONLY NECESSARY TO LOOSEN THE LOCKBOLTS DURING ADJUSTMENT. MOVE THIS POINT BACK OR FORWARD IF ADDITIONAL ADJUSTING RANGE IS REQUIRED. THIS IS NOT REQUIRED UNLESS THE FOOTINGS ARE NOT ON THE PROPER BEARING OR THE FACE ANGLE WAS INCORRECTLY SPECIFIED.

CAUTION!
 DO NOT MOVE THIS POINT UNLESS POINT "C" IS IN THE "ADJUSTING" POSITION.



LOCKBOLT DETAIL (TYPICAL)

GENERAL NOTES

1. PRIOR TO ADJUSTMENT, CHECK TO MAKE SURE THAT THE 7/8" BOLTS HAVE BEEN REMOVED FROM THE UPPER BRACKETS AND DISCARDED.
2. TO PERMIT EASY ROTATION OF THE HANDLES, IT MAY BE NECESSARY TO ADJUST THE TURNBUCKLES ON THE LOWER END OF AP18.
3. AFTER ADJUSTMENT IS COMPLETED, VARY THE LENGTH OF THE TURNBUCKLES TO MAKE IT EASY TO INSTALL THE LOCKBOLTS.
4. IF AT ANY TIME IT BECOMES DIFFICULT TO TURN THE HANDLES, STOP AND DETERMINE THE CAUSE AND TAKE CORRECTIVE ACTION. DON'T EVER FORCE THE HANDLES UNDER ANY CIRCUMSTANCES.
5. BRACKETS AA, AB, AC, AND AD, ARE IDENTICAL AND INTERCHANGABLE.

US PATENT 2,968,033
 CANADIAN PATENT 643,002

REFERENCE
 PANEL ASSY. 8-18701

**ADJUSTING MECHANISM
 2430-15A ARCTIC PASSIVE**

MICROELECT COMPANY 2575 25TH ST. S. VANCOUVER, BRITISH COLUMBIA, CANADA	
SCALE: 1 1/2" = 1'-0"	DATE: 28 MAY 74
D.L.D. / OH	DWG D-19150

GENERAL NOTES

THE COMPLETED ASSEMBLY MUST BE FLAT WITHIN $\frac{1}{8}$ " OVER THE ENTIRE FACE. TO ACCOMPLISH THIS, THE ENTIRE UNIT HAS BEEN FACTORY ASSEMBLED AND HELD FLAT TO A HIGH DEGREE OF ACCURACY WHILE THE CORNER CASTINGS WERE RIVETED IN PLACE. THEREFORE, CAREFULLY SELECT AND POSITION THE PANELS IN THE LOCATION SHOWN BELOW. DO NOT, UNDER ANY CIRCUMSTANCES, USE ANY DRILL OR REAMER. IF THE HOLES DON'T LINE UP THE PANELS MUST BE INCORRECTLY LOCATED OR POSITIONED. FOLLOW THE ERECTION INSTRUCTIONS CAREFULLY.

SHOP PAINT

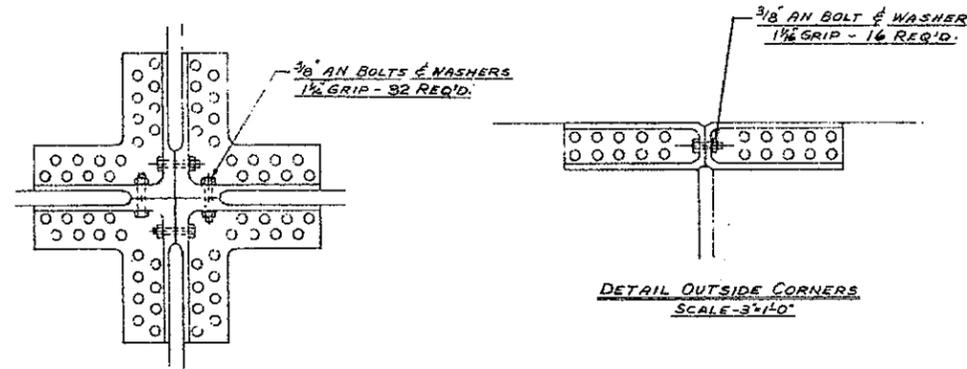
APPLY 2 COATS OF TARSET TO THE AREA 1" FROM MOUNTING HOLES TO PREVENT ELECTROLYTIC ACTION BETWEEN THE ALUMINUM AND THE ZINC. INCLUDE AREA WITHIN THE HOLES & UNDER BOLT HEAD. ALSO APPLY TO SNOW STRUT BEARING AREA.

BOLTS

32 - $\frac{3}{8}$ " BOLTS WITH $1\frac{1}{2}$ " GRIP - FOR INSIDE CORNERS
16 - $\frac{3}{8}$ " BOLTS WITH $1\frac{1}{2}$ " GRIP - FOR OUTSIDE CORNERS

USE PROPER SIZE WASHER UNDER ALL NUTS.
24 - $\frac{3}{8}$ " x 22 BOLTS SHIPPED INSTALLED IN THE PANELS

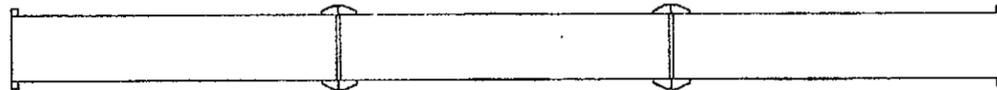
8 - $\frac{3}{8}$ " x $1\frac{3}{4}$ " C2 BOLTS INSTALLED IN PANELS



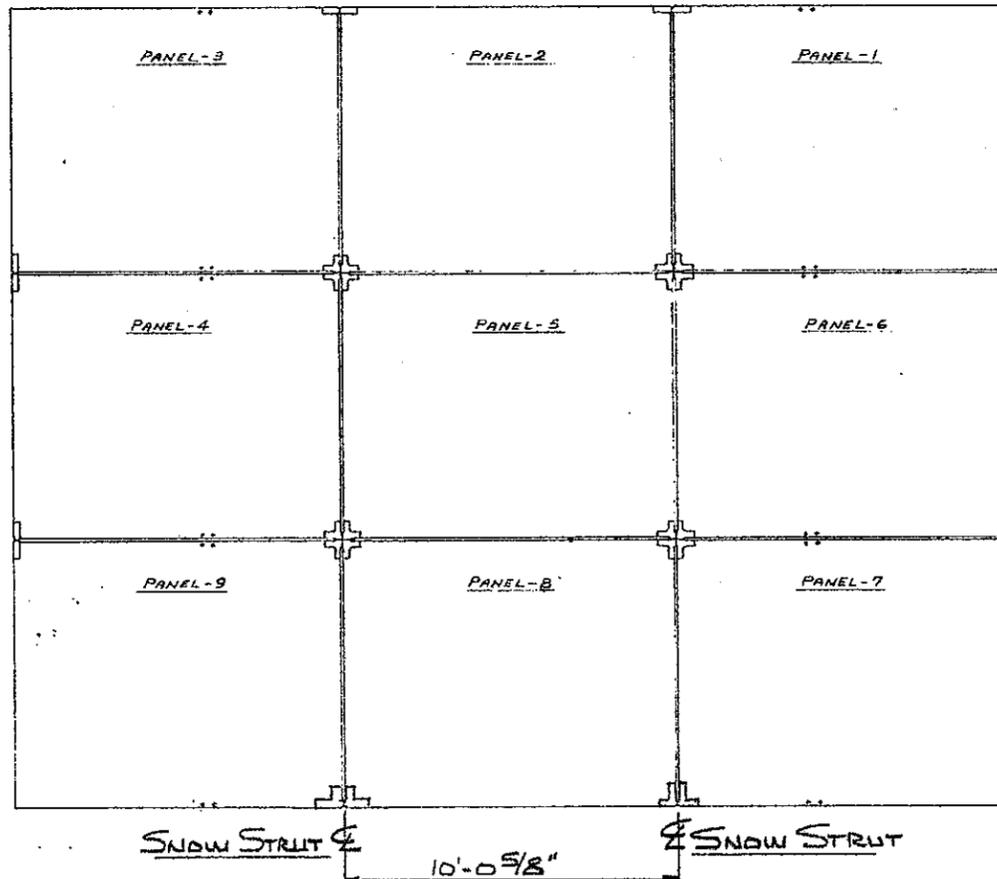
DETAIL - INSIDE CORNERS
SCALE - 3"=1'0"

NOTE: THE BACKSIDE IS THE SAME AS THE FRONT

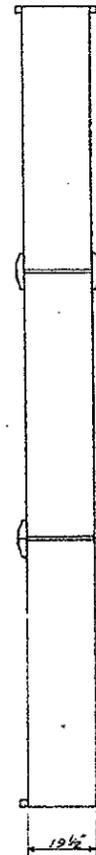
DETAIL OUTSIDE CORNERS
SCALE - 3"=1'0"



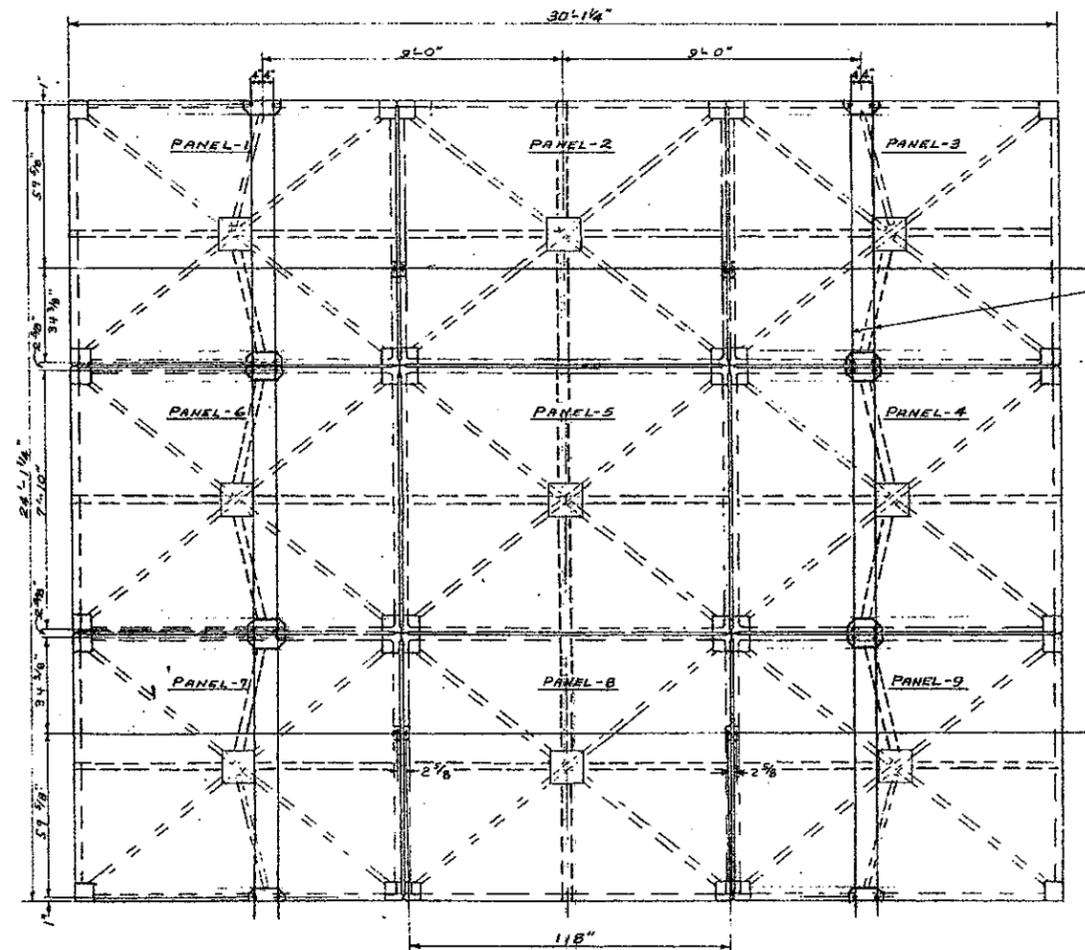
TOP VIEW



FRONT ELEVATION



END VIEW



TOTAL OF 24 - $\frac{1}{4}$ " ϕ MOUNTING HOLES IN THE BACK AND FRONT PLUS 8 IN BACK ONLY
REAR ELEVATION

NOTE: ALL 12 HOLES IN FRONT FACE AS WELL AS BACK.

ALL HOLES $\frac{1}{16}$ " ϕ UNLESS NOTED.

ARCTIC MODEL
2430

PASSIVE REPEATER

PANEL ASSEMBLY DETAIL

MICROFLECT COMPANY

SALEM, OREGON

DWN. JR	DATE - 4 MAY 74
	SCALE -
APP. DLD	DWG. No. B-18701

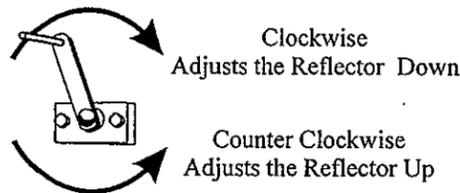
Passive Repeater Adjustment Instructions

Model 2430 *Standard* Illustrated
(Other Models Similar)

Station D Vertical Adjustment Point

1. Remove and discard the 7 1/2" (19 cm) bolt. **
2. Remove the (M4) lock bolts and spacers.
3. Back off the lead screw (M2) nuts on each side of the guide tube of the #1 channel (see page 2).

After the free point station C is loosened and in "free condition", the passive repeater can be adjusted up or down (vertical or elevation adjustment) by turning the lead screw handle.



Adjust for the maximum power level. There are minor lobes on each side of the major lobe, so the unit should be rotated far enough in each direction to be certain that the unit is aligned on the major lobe.

The final step in the alignment is to adjust the reflector *up* slightly. Turn the adjustment handle *counter clockwise* until the received power level decreases about one half (0.5) dB.

Station B Pivot Point

This station remains stationary and the reflecting surface pivots about this point during adjustment.

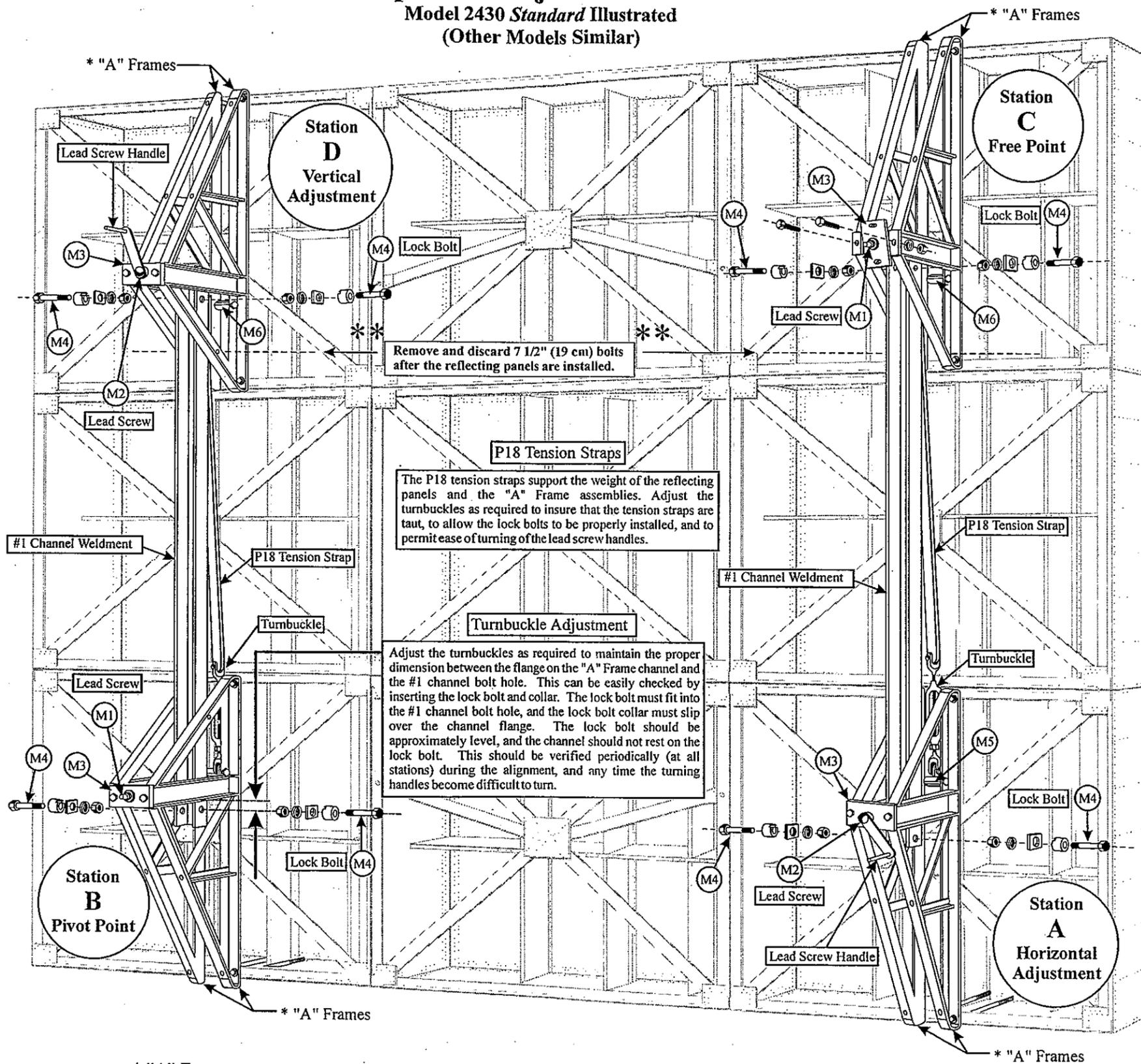
1. Loosen or remove the lock bolts (M4). The lead screw nuts remain tight against the guide tube of the #1 channel (see page 2).
2. Disconnect the snow struts (*arctic models only*) at the bottom of the reflecting panels.

If the Adjustment Range is Exceeded:

1. Station C becomes the pivot point and must be locked down.
2. Station B becomes the free point and must be in the "free condition".
3. Station D becomes the horizontal adjustment point.
4. Station A becomes the vertical adjustment point.

Turnbuckle Adjustment Notes:

1. Adjust the turnbuckles as required to insure that:
 - > The P18 tension straps remain taut.
 - > The lead screws remain centered in the guide tubes.
 - > The turning handles rotate easily.
 - > The lock bolts are properly installed.
2. When adjusting the turnbuckle at station B, loosen the lead screw nuts 1/2 turn (see page 2).
3. Recheck the alignment after adjusting the turnbuckles.



* "A" Frames

Refer to the installation drawings for the proper part number and orientation of these members. These members are inverted, relative to this illustration, for the models 1620, 1624, 2024, and 2032.

Station C Free Point

Station C is the free point station and must be in "free condition" before the passive repeater can be adjusted.

1. Remove and discard the 7 1/2" (19 cm) bolt. **
2. Remove the (M4) lock bolts and spacers.
3. Back off the lead screw (M2) nuts on each side of the guide tube of the #1 channel (see page 2).
4. Remove the bolts attaching the M3 plate, and rotate the plate 90°.

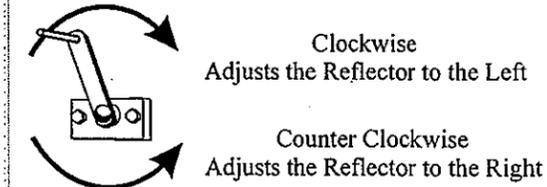
If the Adjustment Handles are Difficult to Turn:

1. Verify that the 7 1/2" (19 cm) bolts are removed. **
2. Verify that all lock bolts (M4) and spacers are removed.
3. Verify that the lead screw nuts are backed off (page 2).
4. Verify that station C is in the "free condition".
5. Verify that the M2 lead screws are lubricated (page 2).
6. Check the "back lash" at the turning handles (page 3).
7. See "Turnbuckle Adjustment" and adjust as necessary.

Station A Horizontal Adjustment Point

1. Remove the (M4) lock bolts and spacers.
2. Back off the lead screw (M2) nuts on each side of the guide tube of the #1 channel (see page 2).
3. Disconnect the snow struts (*arctic models only*) at the bottom of the reflecting panels.

After the free point station C is loosened and in "free condition", the passive repeater can be adjusted to the left or the right (horizontal or azimuth adjustment) by turning the lead screw handle.



Adjust for the maximum power level. There are minor lobes on each side of the major lobe, so the unit should be rotated far enough in each direction to be certain that the unit is aligned on the major lobe.



Passive Repeater Adjustment Instructions
Standard, Arctic, and Typhoon Models:
1620, 1624, 2024, 2032, 2430
Arctic Model 3032

Microflect, 3575 25th St. S.E., Salem, OR 97302 USA

by: RO Aug. 20, 96 B-94941-1 Sheet 1 of 4

Caution! Do not attempt to adjust the passive repeater during high winds.

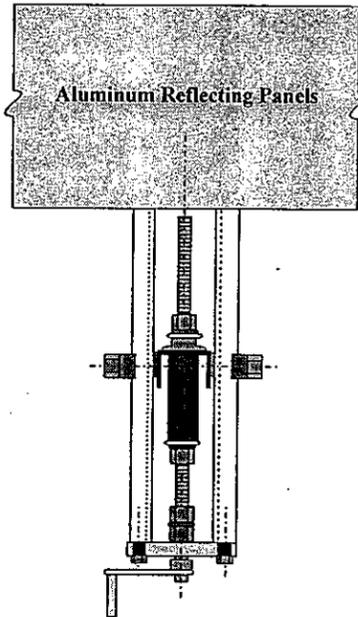
Passive Repeater Adjustment Mechanism

Plan View

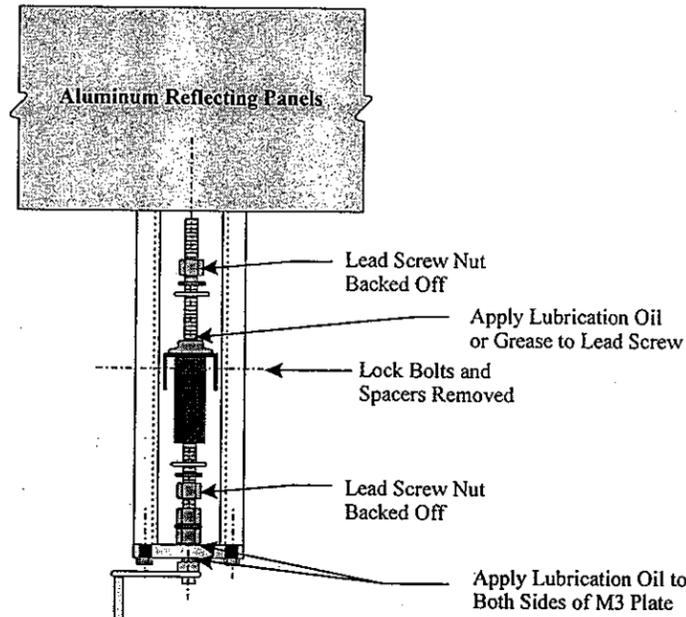
Model 2430 *Standard Illustrated*
(Other Models Similar)

Station D Vertical Adjustment Point

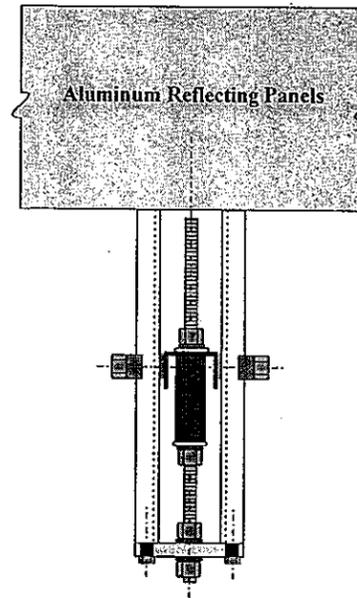
Locked Position



Adjusting Position

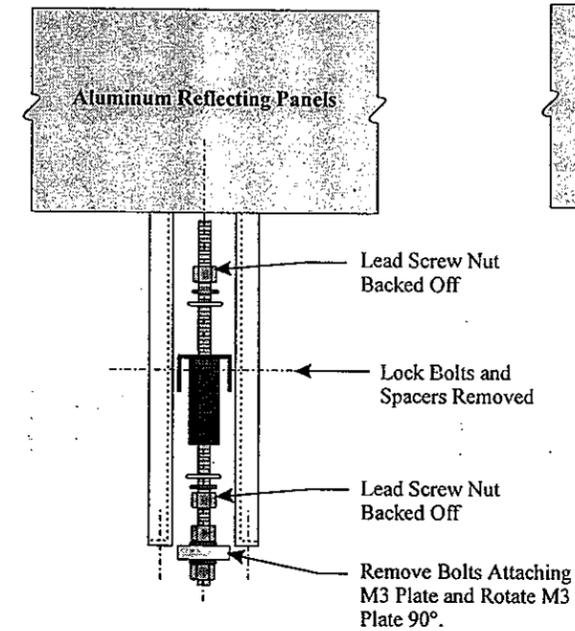


Locked Position

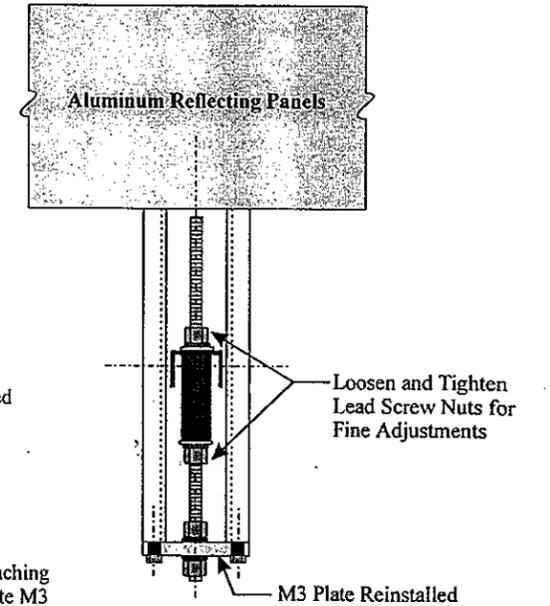


Station C Free Point

Adjusting Position

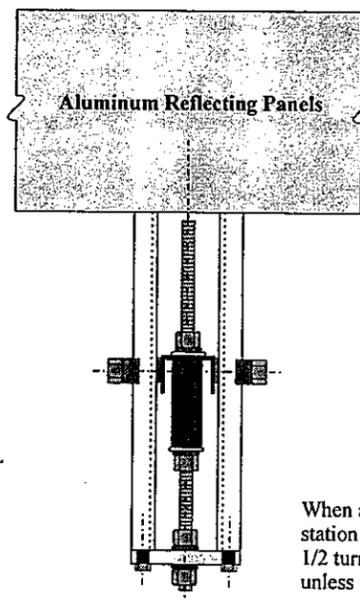


Final Adjusting Position

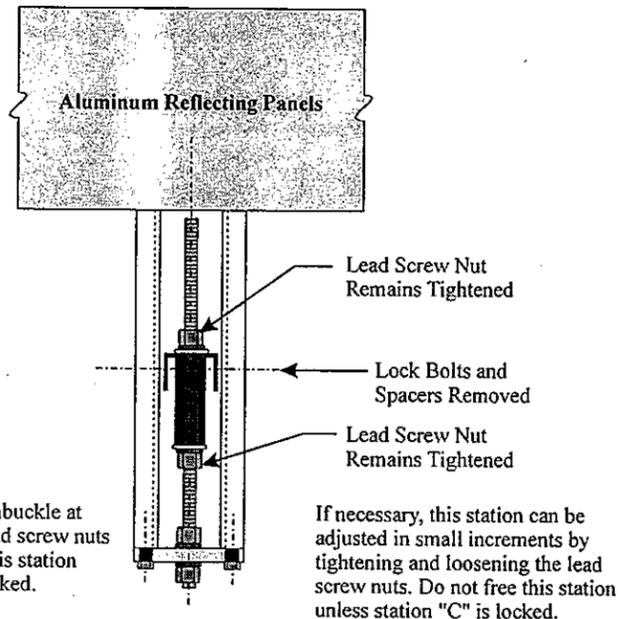


Station B Pivot Point

Locked Position

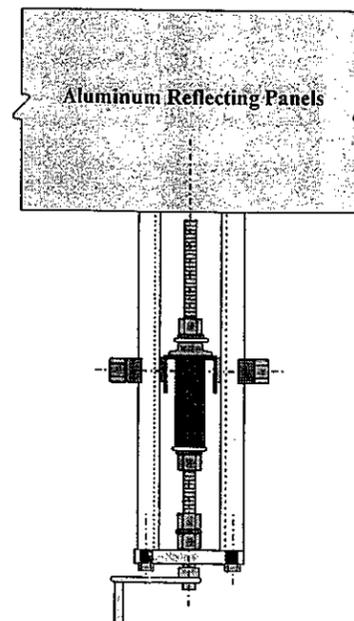


Adjusting Position

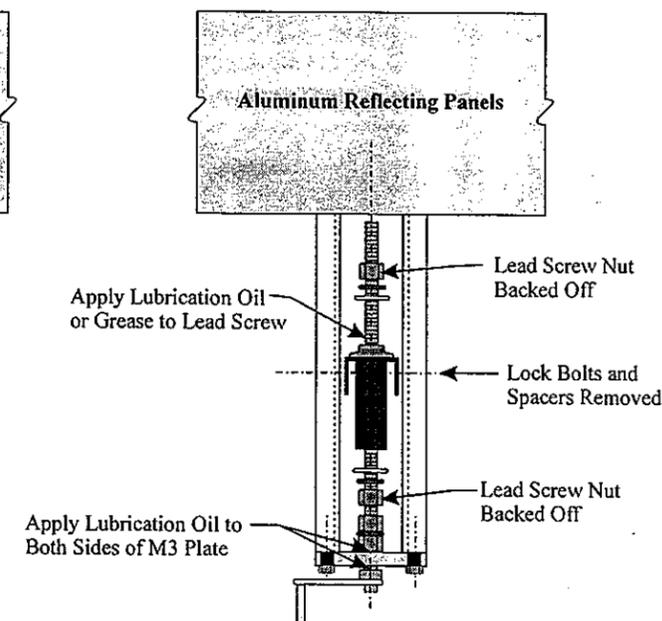


Station A Horizontal Adjustment Point

Locked Position



Adjusting Position



Lubricating the Lead Screws

The M2 lead screw assemblies at stations "A" and "D" should be lubricated for ease of adjustment. Apply grease or lubricating oil on the lead screw near the bearing nut, and where the turning handle assembly bears against the M3 plate.



Passive Repeater Adjustment Instructions
Standard, Arctic, and Typhoon Models:
1620, 1624, 2024, 2032, 2430
Arctic Model 3032

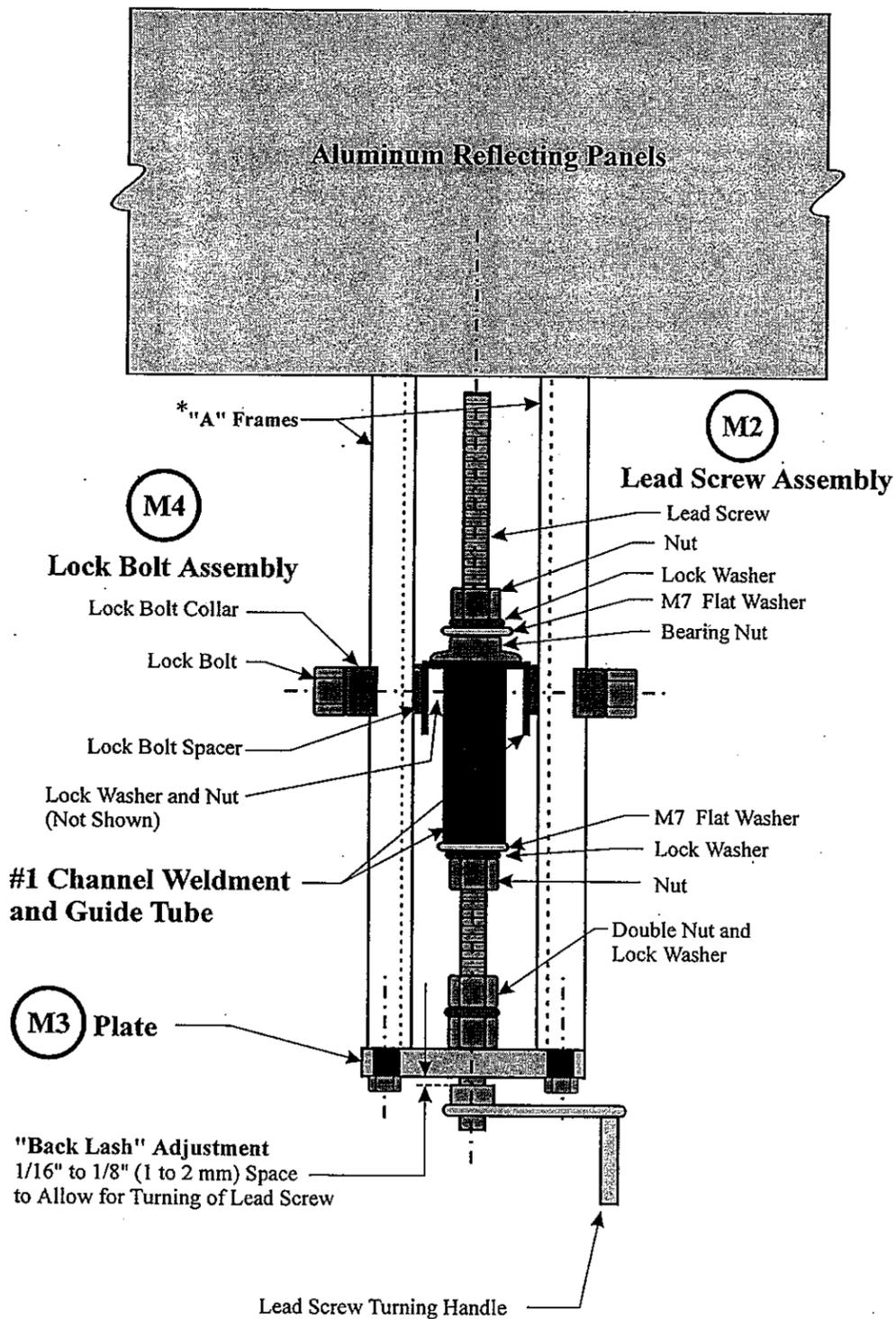
Microflect, 3575 25th St. S.E., Salem, OR 97302 USA

by: RO Aug. 20, 96 **B-94941-2** Sheet 2 of 4

Passive Repeater Adjustment Mechanism

Plan View Locked Position

Station A and Station D Horizontal and Vertical Adjustment Points



Locking Down the Passive Repeater

Install, but do not tighten, the lock bolts at all stations. If the lock bolts do not line up with the #1 channel bolt holes, review the "Turnbuckle Adjustment" instructions on page 1. If the turnbuckles require adjustment, recheck the alignment to insure that the passive repeater has not moved.

Install the M3 plate at the free point station "C".

If alignment gages and surveying instruments are available: Tighten the lead screw nuts first. The surveyor should carefully observe the gages to be certain that each station is locked down in the precisely aligned position. The towerman will need to tighten the lead screw nuts by alternating back and forth on both sides of the guide tube, as directed by the surveyor. Tighten the lock bolts.

If alignment gages and surveying instruments are not available: Tighten the lock bolts first. Tighten the lead screw nuts by alternating back and forth on both sides of the guide tube so that no movement occurs during the lock down.

Lock Bolt (M4) Installation

The lock bolt spacer must be installed between the channel of the "A" Frame and the #1 channel. If the spacer will not fit between these two members, loosen the bolts on the M3 plate and spread the "A" Frames with a pry bar.

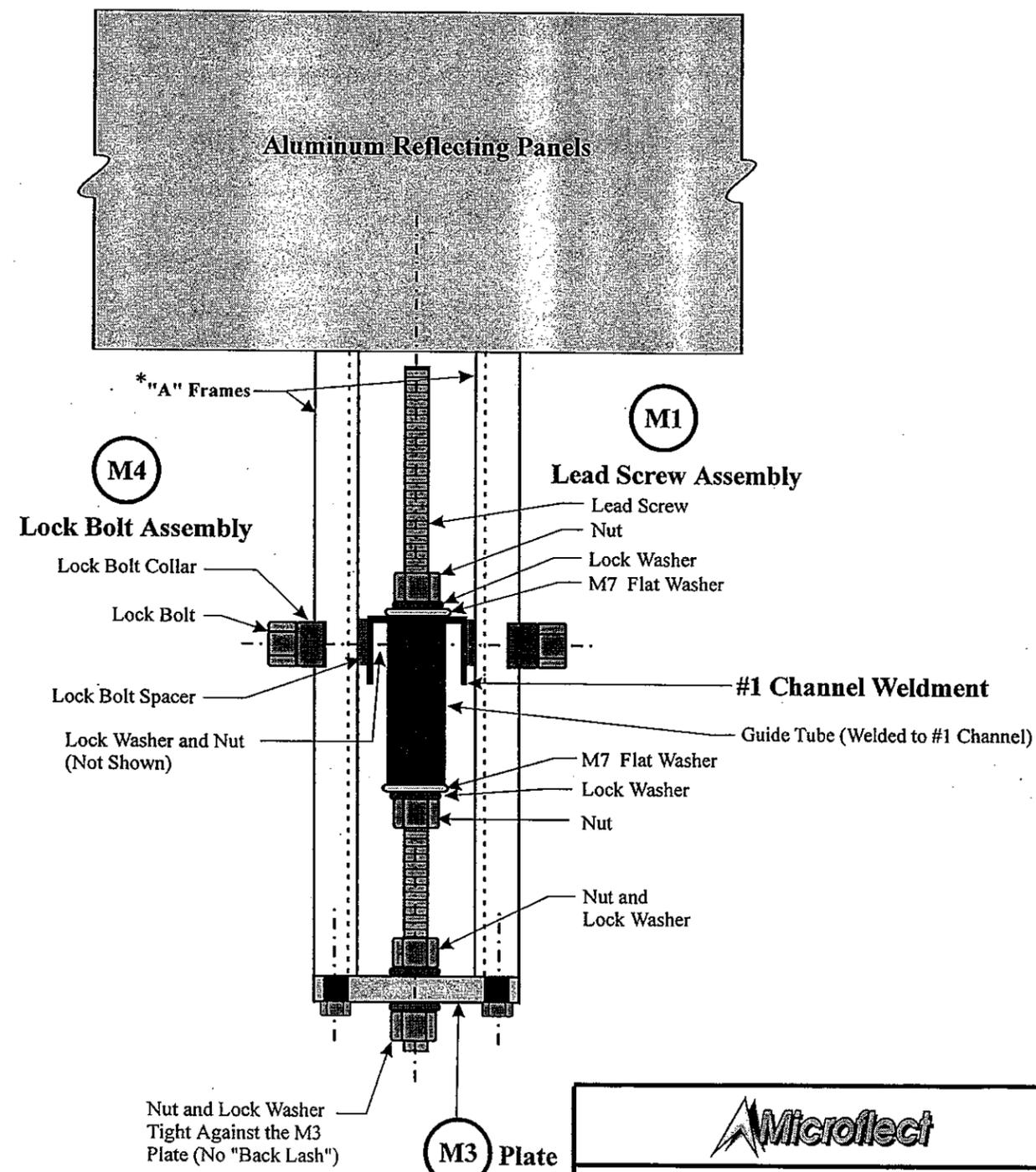
In order to install the lock bolts, the "A" Frames must be properly positioned relative to the holes in the #1 channel. The turnbuckles may be used to raise or lower the "A" Frames as required. See the "Turnbuckle Adjustment" instructions on page 1.

*

"A" Frames

Refer to the installation drawings for the appropriate part designator for these weldments. These weldments attach directly to the aluminum reflecting panels for the 1620, 1624, 2024, and 2430 models. The model 2032 uses a channel weldment (part no. 33) for this connection.

Station B and Station C Pivot Point and Free Point



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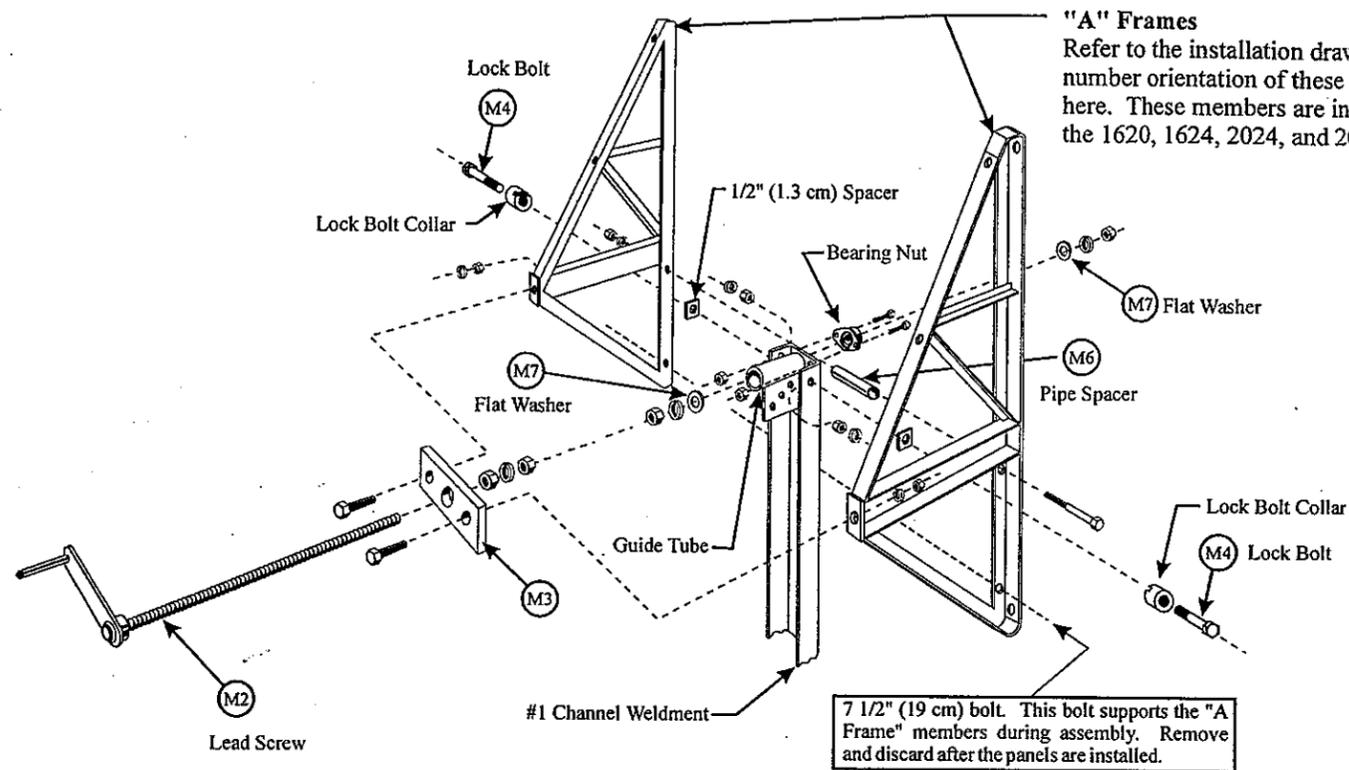
by: RO Aug. 20, 96 **B-94941-3** Sheet 3 of 4

Passive Repeater Adjustment Mechanism

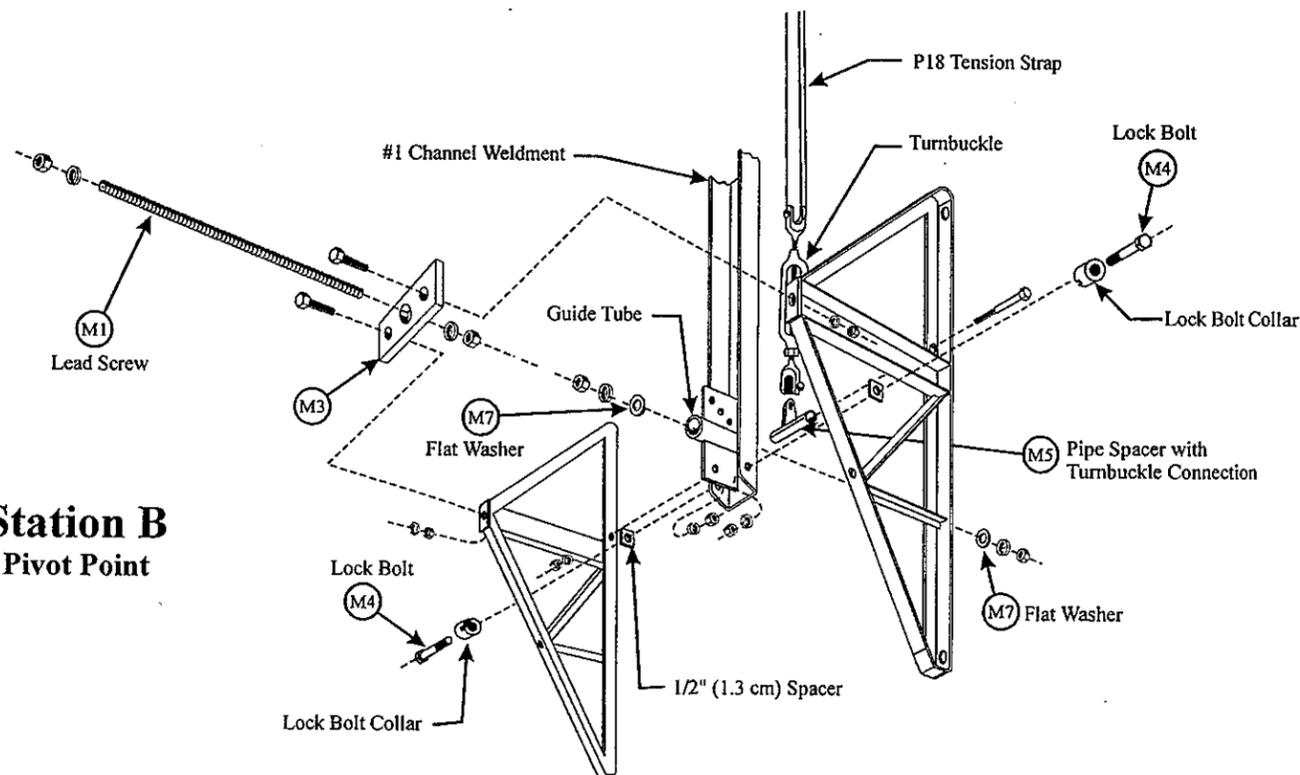
Exploded View

Model 2430 *Standard* Illustrated
(Other Models Similar)

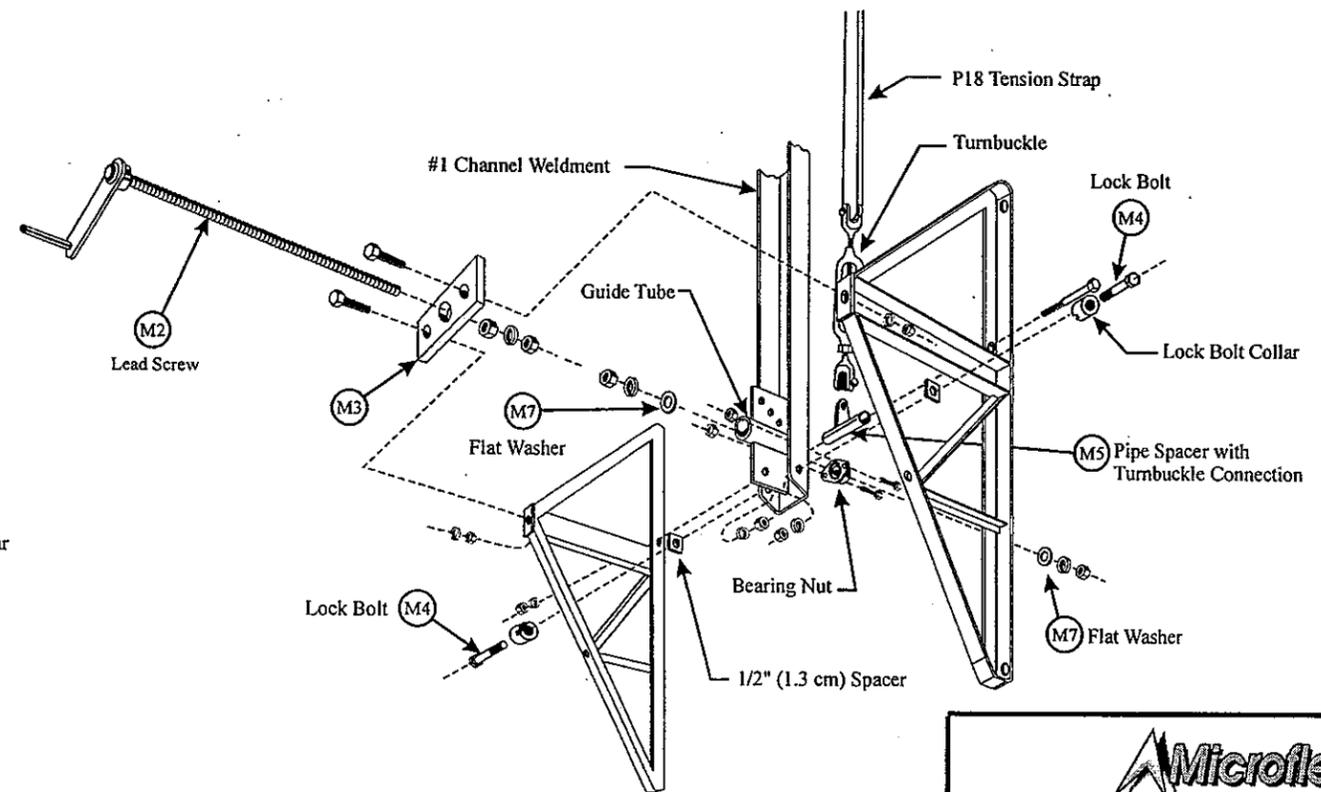
Station D
Vertical Adjustment Point



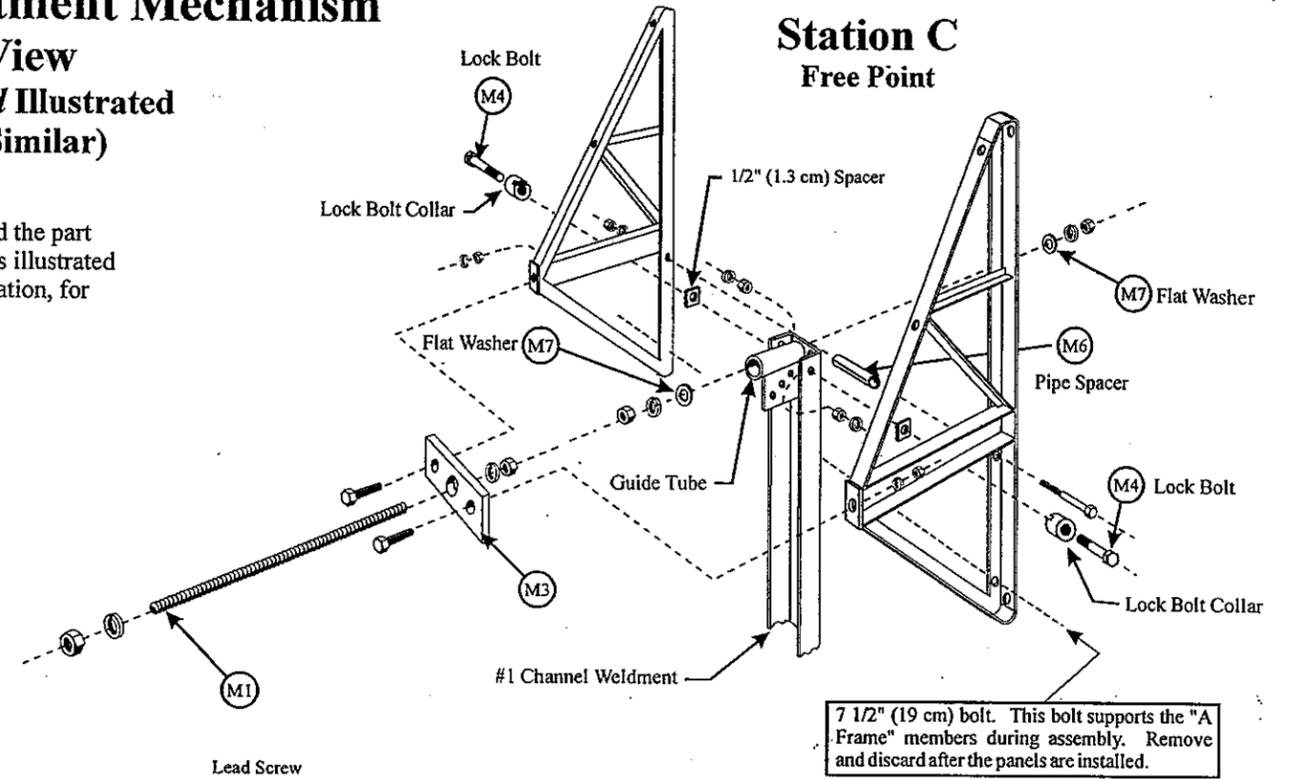
Station B
Pivot Point



Station A
Horizontal Adjustment Point



Station C
Free Point



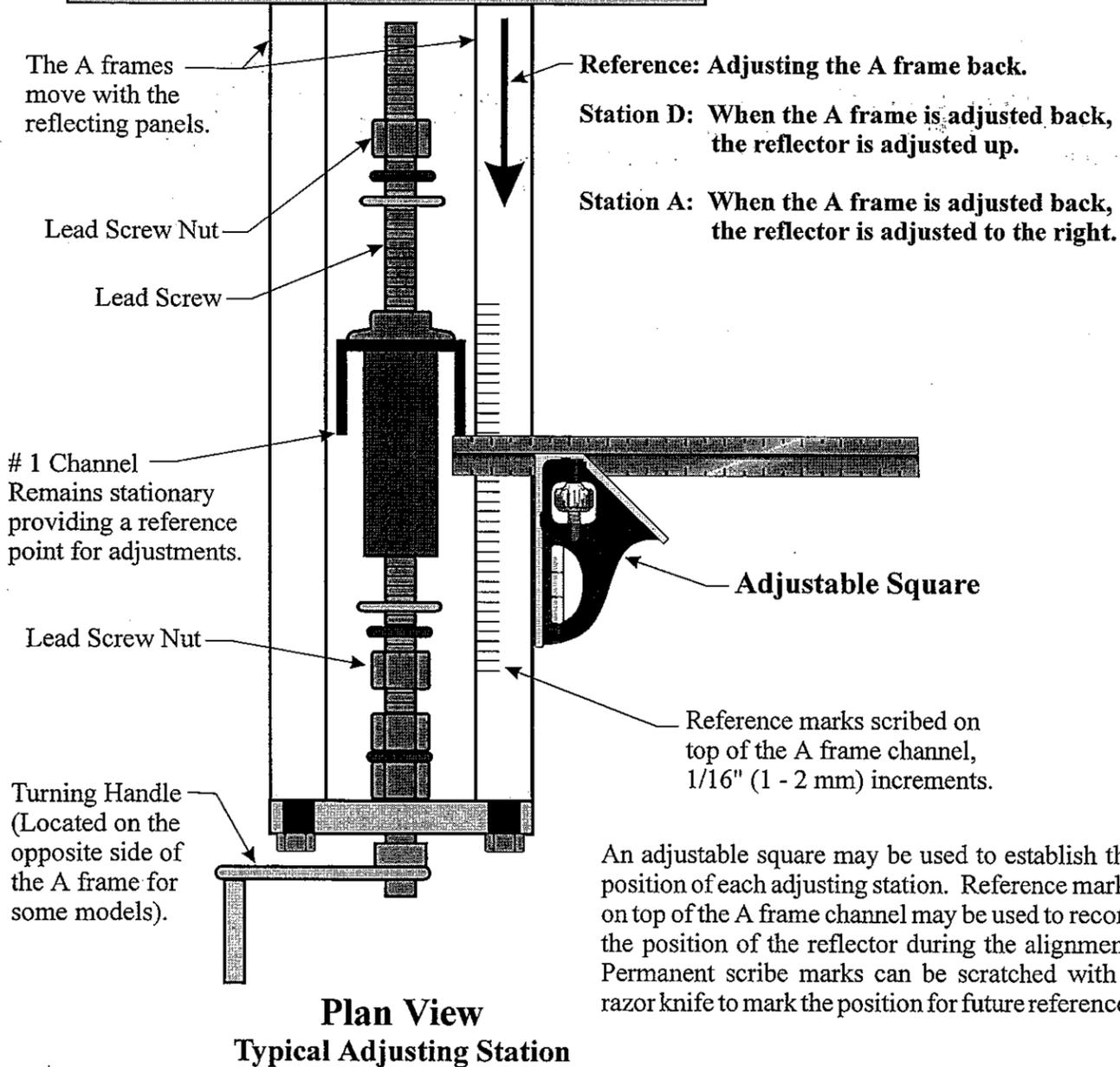
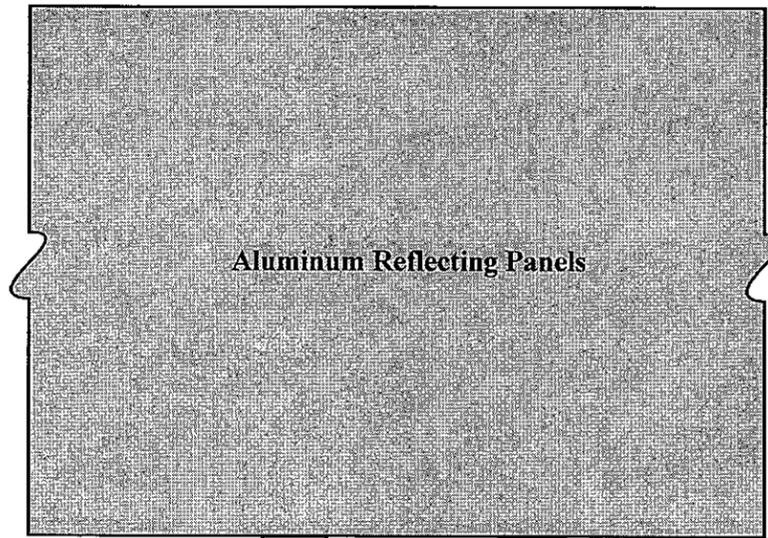
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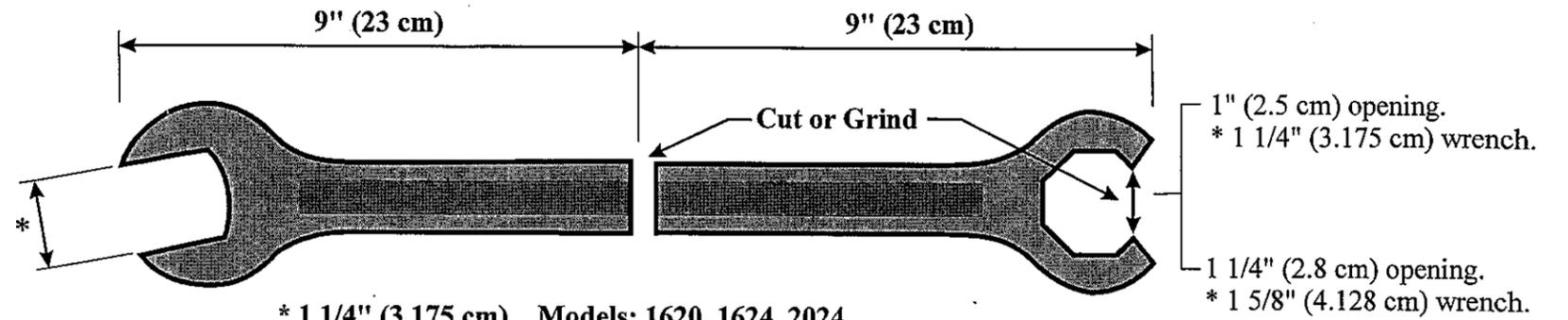
by: RO Aug. 20, 96 B-94941-4 Sheet 4 of 4

Passive Repeater Adjustment Instructions

Recommended Tools



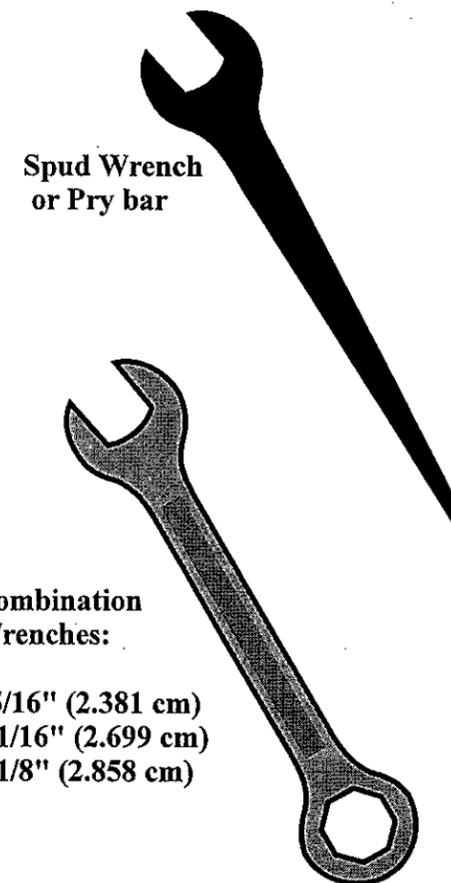
Lead Screw Wrenches (Modified Combination Wrench)



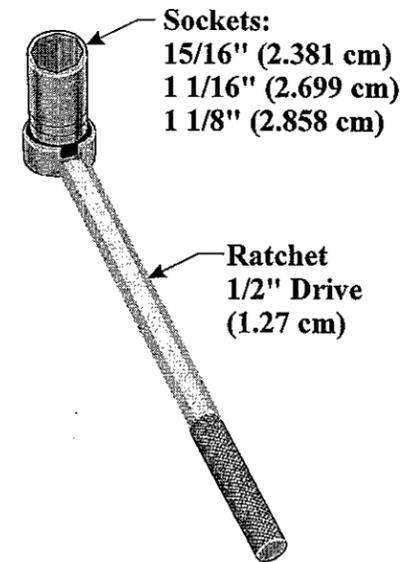
* 1 1/4" (3.175 cm) Models: 1620, 1624, 2024

* 1 5/8" (4.128 cm) Models: 2032, 2430, 3032, 3040, 3048, 4050, 4060

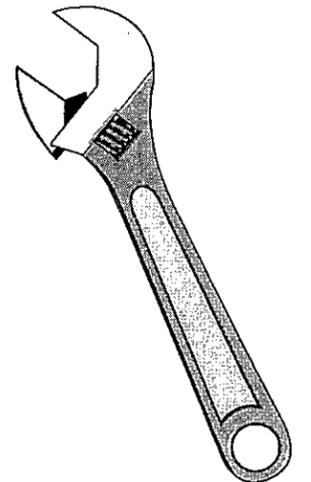
The work space around the lead screws is restricted, special wrenches are required to loosen and tighten the nuts. Lead screw wrenches can be easily fabricated by cutting a standard combination wrench in half, and by cutting or grinding an opening in the boxed end.



15/16" (2.381 cm)
1 1/16" (2.699 cm)
1 1/8" (2.858 cm)



12" (30 cm) Open End Adjustable Wrench



Passive Repeater Adjustment Tools
Models: 1620 through 4060

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