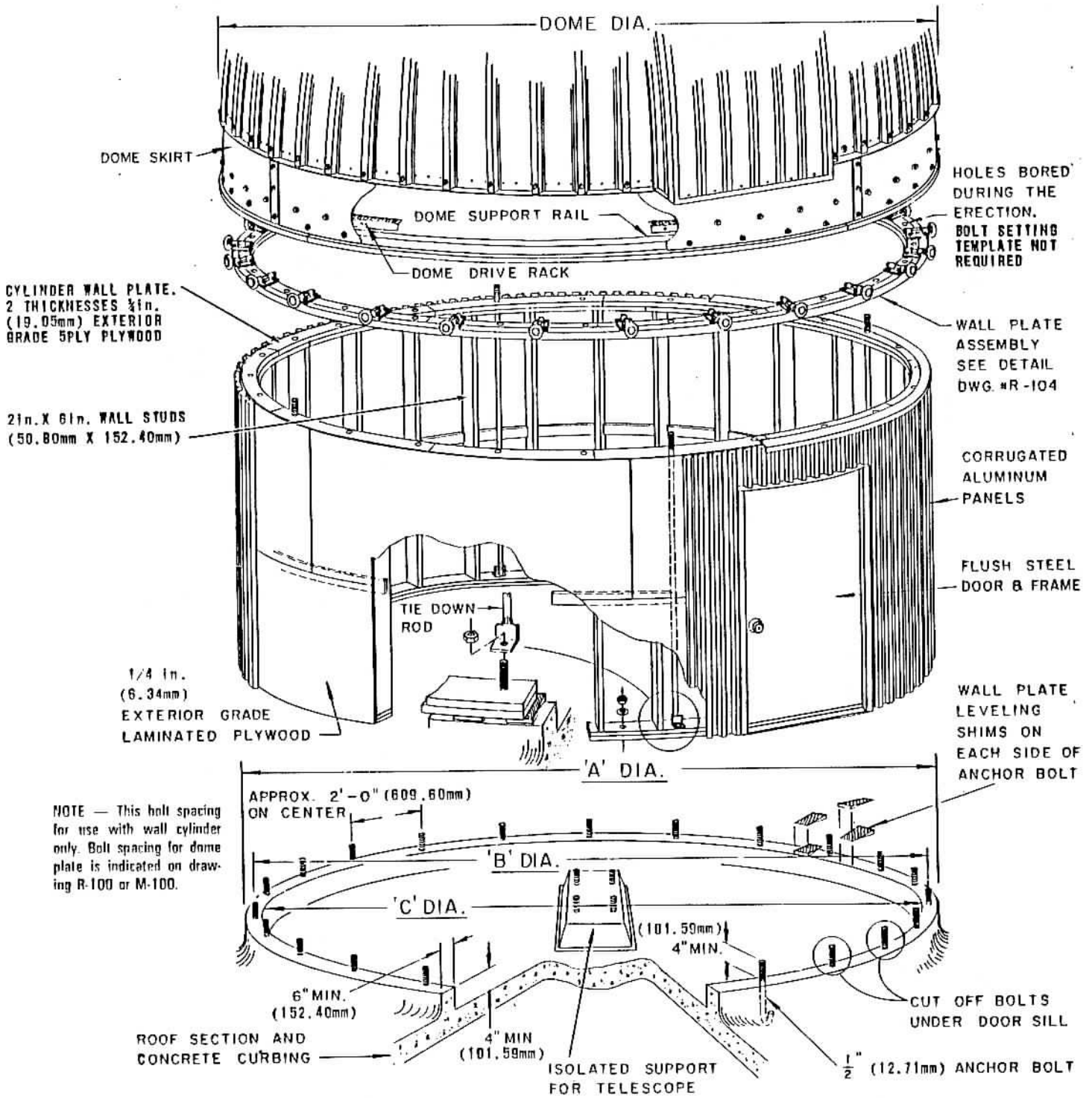
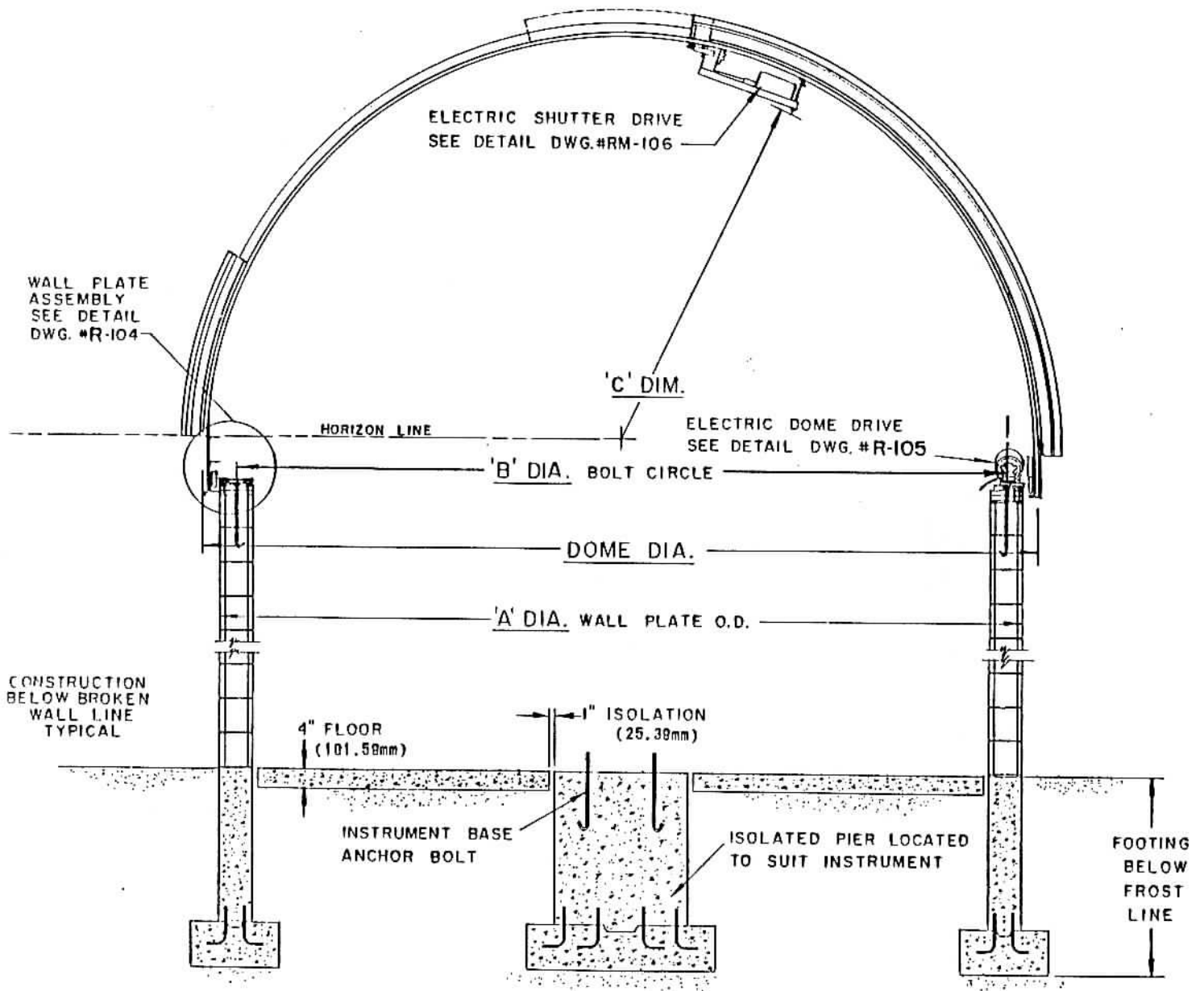


DOME DIAMETER	"A" DIAMETER	"B" DIAMETER	BOLTS REQUIRED	BOLT SPACING
8' 0" (2.438M)	7' 5" (2.261M)	6' 11" (2.108M)	15	17- 5/8" (447.67mm)
10' 6" (3.200M)	10' 2" (3.099M)	9' 6" (2.896M)	20	17-13/16" (452.44mm)
12' 6" (3.810M)	12' 2" (3.708M)	11' 6" (3.505M)	20	21- 9/16" (547.69mm)
14' 6" (4.420M)	14' 2" (4.318M)	13' 6" (4.115M)	24	21- 1/8" (536.58mm)
16' 6" (5.029M)	16' 2" (4.928M)	15' 6" (4.724M)	28	20-13/16" (528.64mm)
18' 6" (5.639M)	18' 2" (5.537M)	17' 6" (5.334M)	32	20-9/16" (522.29mm)

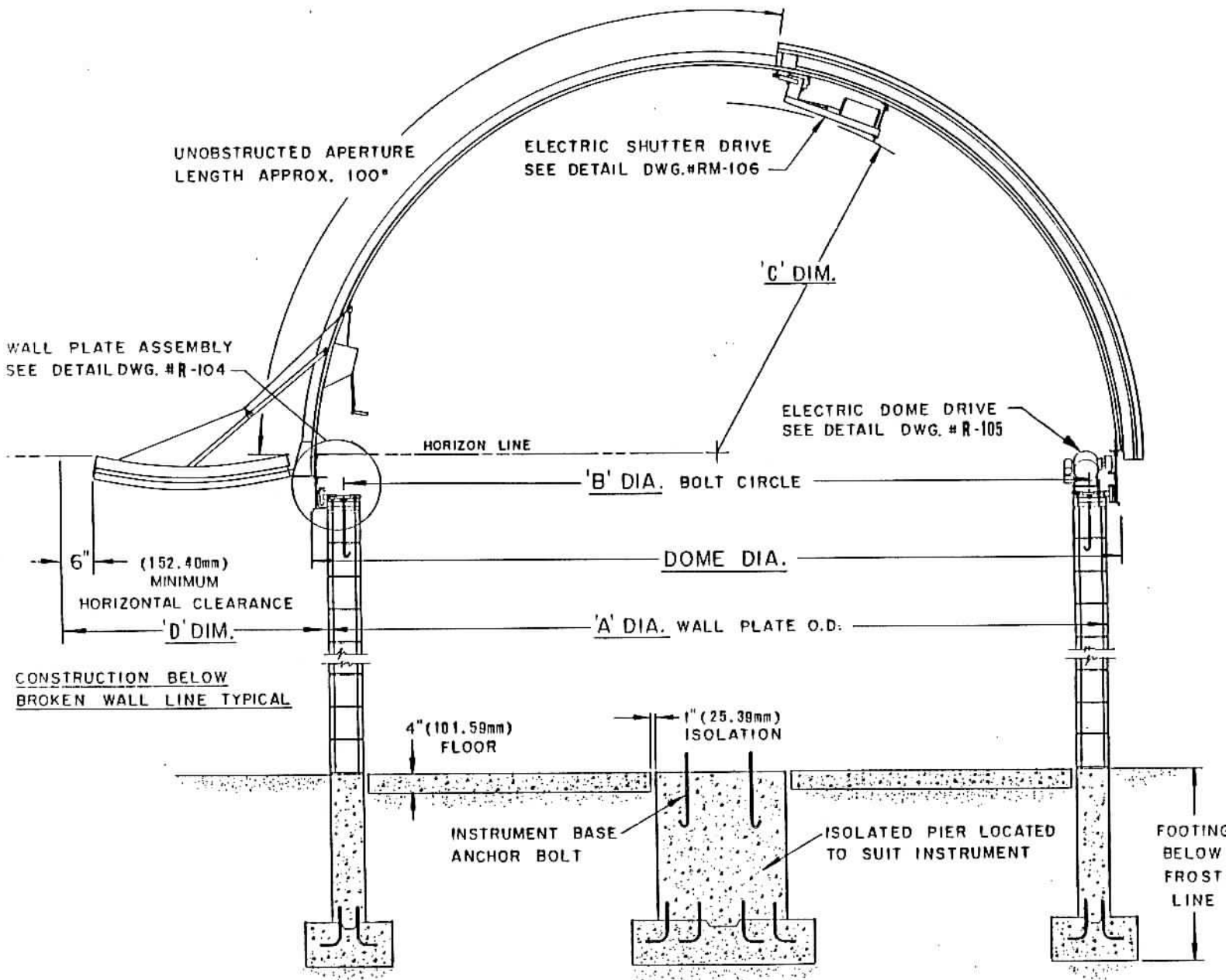
SUPPORT WALL CYLINDER
(WITH SUGGESTED CURBING)



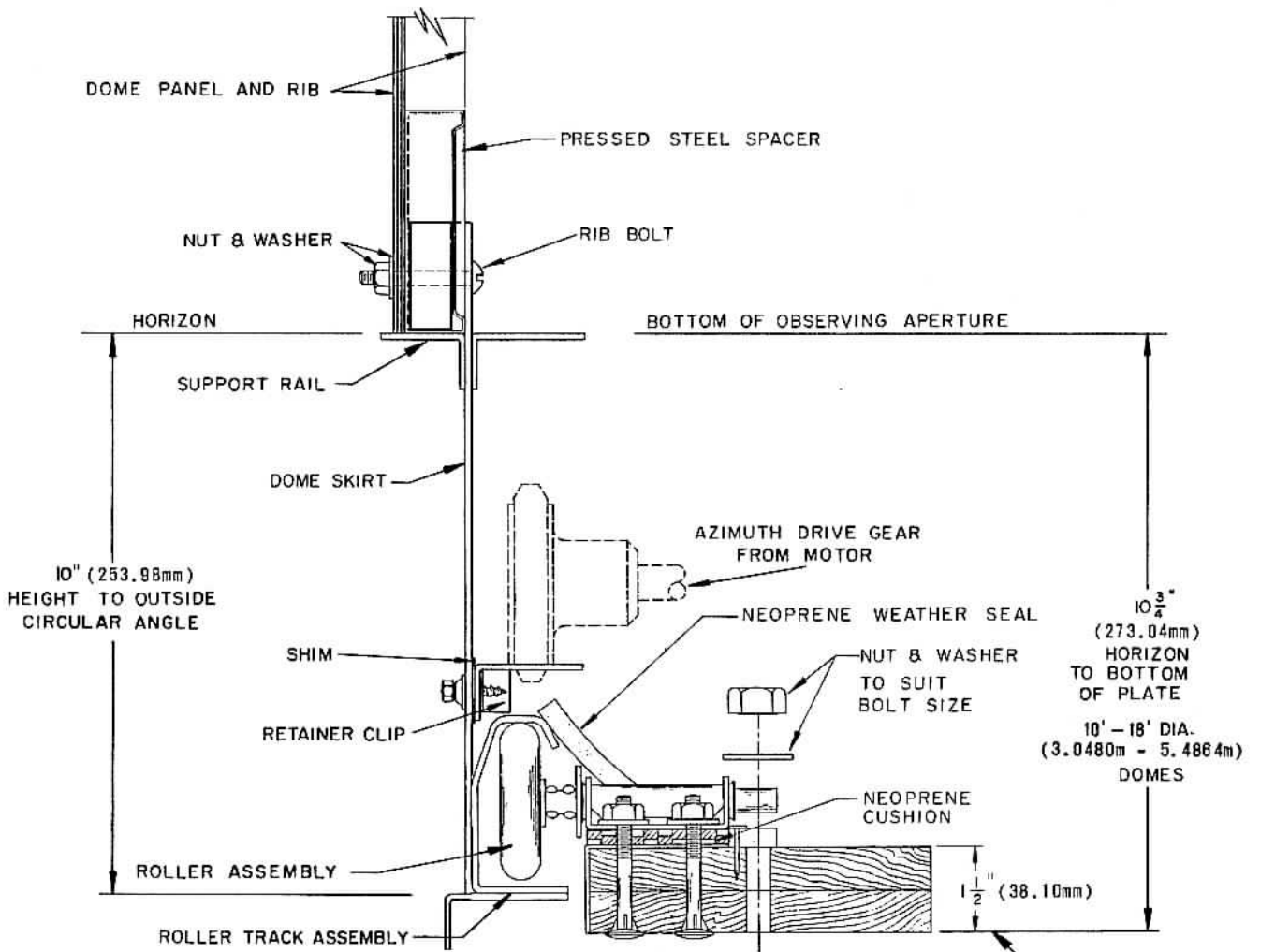
DOME DIAMETER	"A" DIAMETER	"B" DIAMETER	"C" DIAMETER
8' 0" (2.438M)	7' 5" (2.261M)	6' 11" (2.108M)	6' 6" (1.981M)
10' 6" (3.200M)	10' 2" (3.099M)	9' 6" (2.896M)	9' 2" (2.794M)
12' 6" (3.810M)	12' 2" (3.708M)	11' 6" (3.505M)	11' 2" (3.404M)
14' 6" (4.420M)	14' 2" (4.318M)	13' 6" (4.115M)	13' 2" (4.013M)
16' 6" (5.029M)	16' 2" (4.928M)	15' 6" (4.724M)	15' 2" (4.623M)
18' 6" (5.639M)	18' 2" (5.537M)	17' 6" (5.334M)	17' 2" (5.232M)



DOME DIAMETER	"A" DIAMETER	"B" DIAMETER	"C" DIMENSION
8' 0" (2.438M)	7' 5" (2.261M)	6' 11" (2.108M)	3' 0" (.91440M)
10' 6" (3.200M)	10' 2" (3.099M)	9' 6" (2.896M)	4' 1" (1.245M)
12' 6" (3.810M)	12' 2" (3.708M)	11' 6" (3.505M)	5' 2" (1.575M)
14' 6" (4.420M)	14' 2" (4.318M)	13' 6" (4.115M)	6' 2" (1.880M)
16' 6" (5.029M)	16' 2" (4.928M)	15' 6" (4.724M)	7' 1" (2.159M)
18' 6" (5.639M)	18' 2" (5.537M)	17' 6" (5.334M)	8' 2" (2.489M)

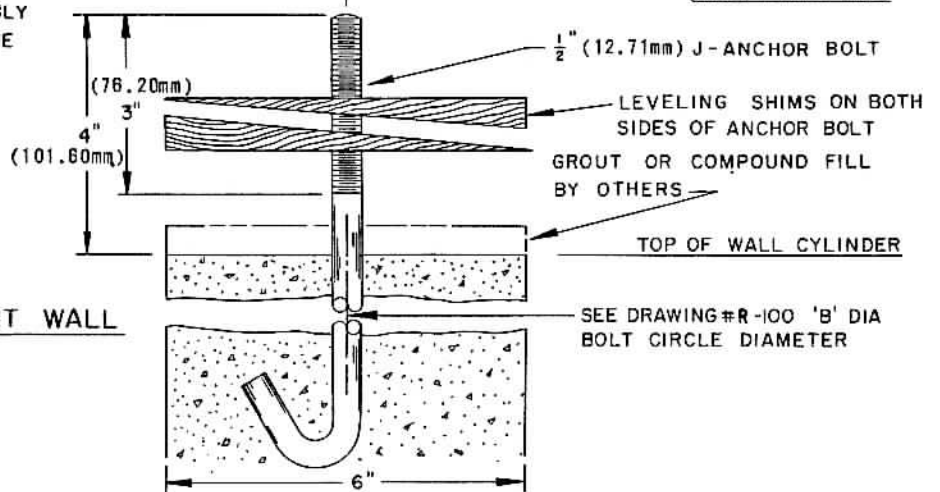


DOMES DIAMETER	"A" DIAMETER	"B" DIAMETER	"C" DIMENSION	"D" DIMENSION
8' 0" (2.438M)	7' 5" (2.261M)	6' 11" (2.108M)	3' 0" (.914M)	3' 0" (.762M)
10' 6" (3.200M)	10' 2" (3.099M)	9' 6" (2.896M)	4' 1" (1.245M)	4' 1" (1.245M)
12' 6" (3.810M)	12' 2" (3.708M)	11' 6" (3.505M)	5' 2" (1.575M)	4' 4" (1.321M)
14' 6" (4.420M)	14' 2" (4.318M)	13' 6" (4.115M)	6' 2" (1.880M)	4' 5" (1.346M)
16' 6" (5.029M)	16' 2" (4.928M)	15' 6" (4.724M)	7' 1" (2.159M)	5' 2" (1.575M)
18' 6" (5.639M)	18' 2" (5.537M)	17' 6" (5.334M)	8' 2" (2.489M)	6' 2" (1.880M)

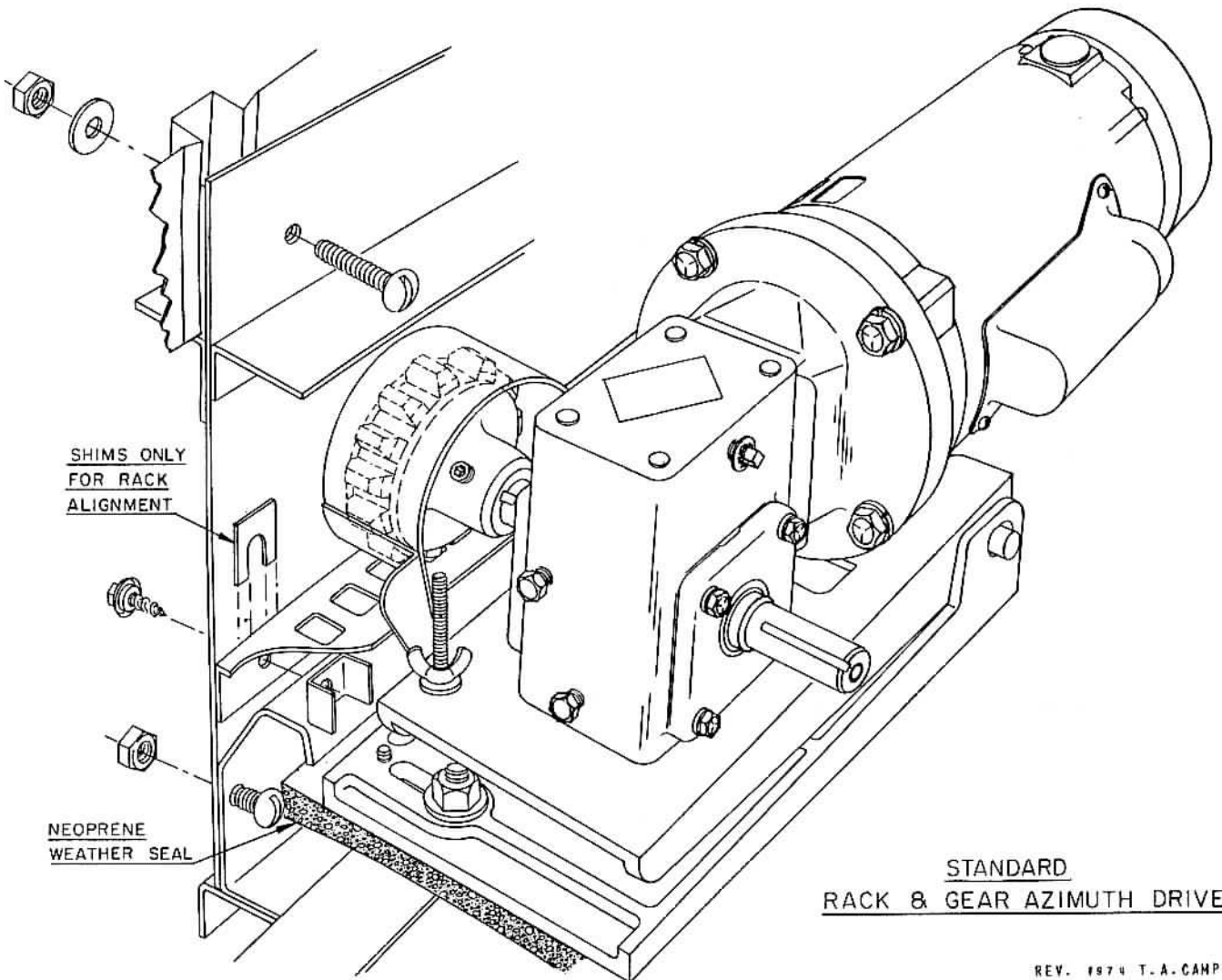
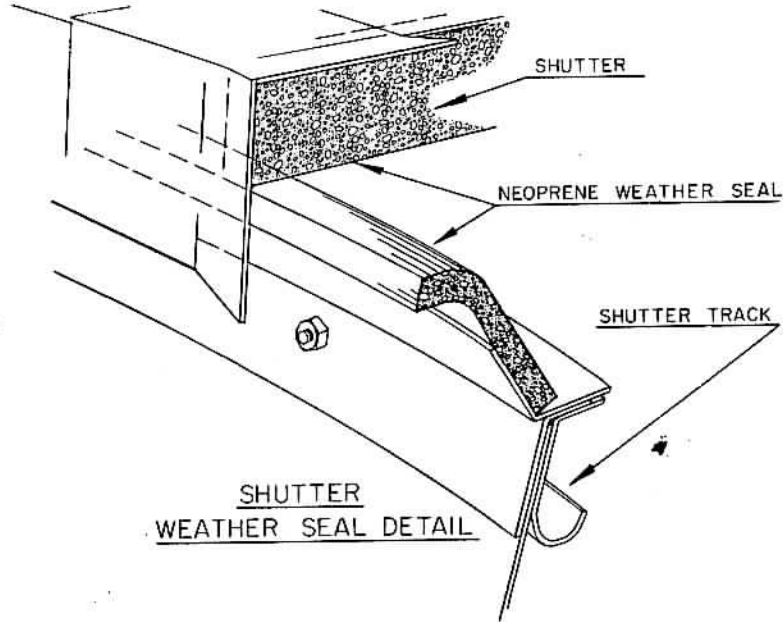
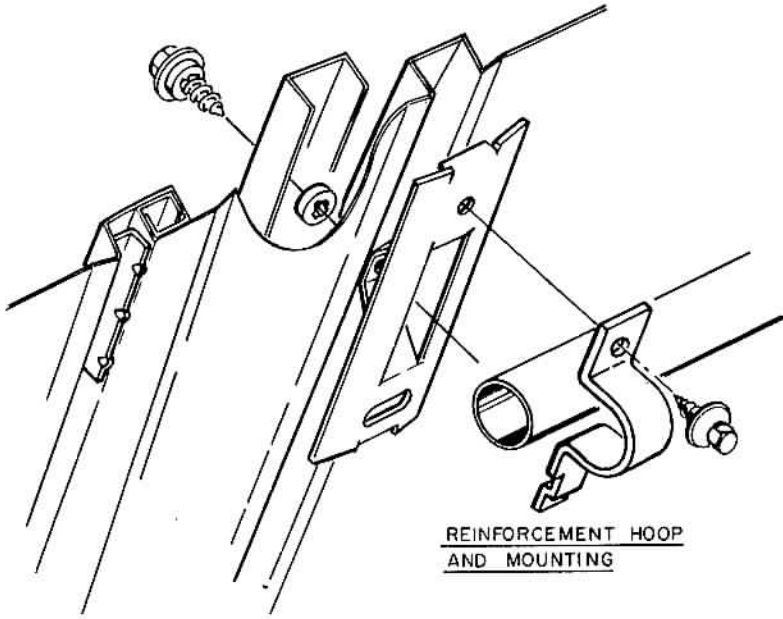


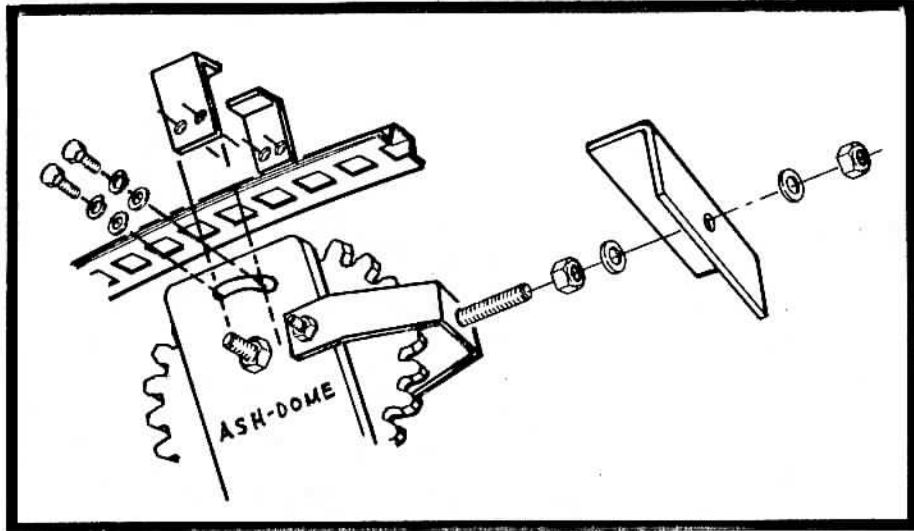
WALL PLATE ASSEMBLY

WOOD PLATE ASSEMBLY
FURNISHED WITH DOME

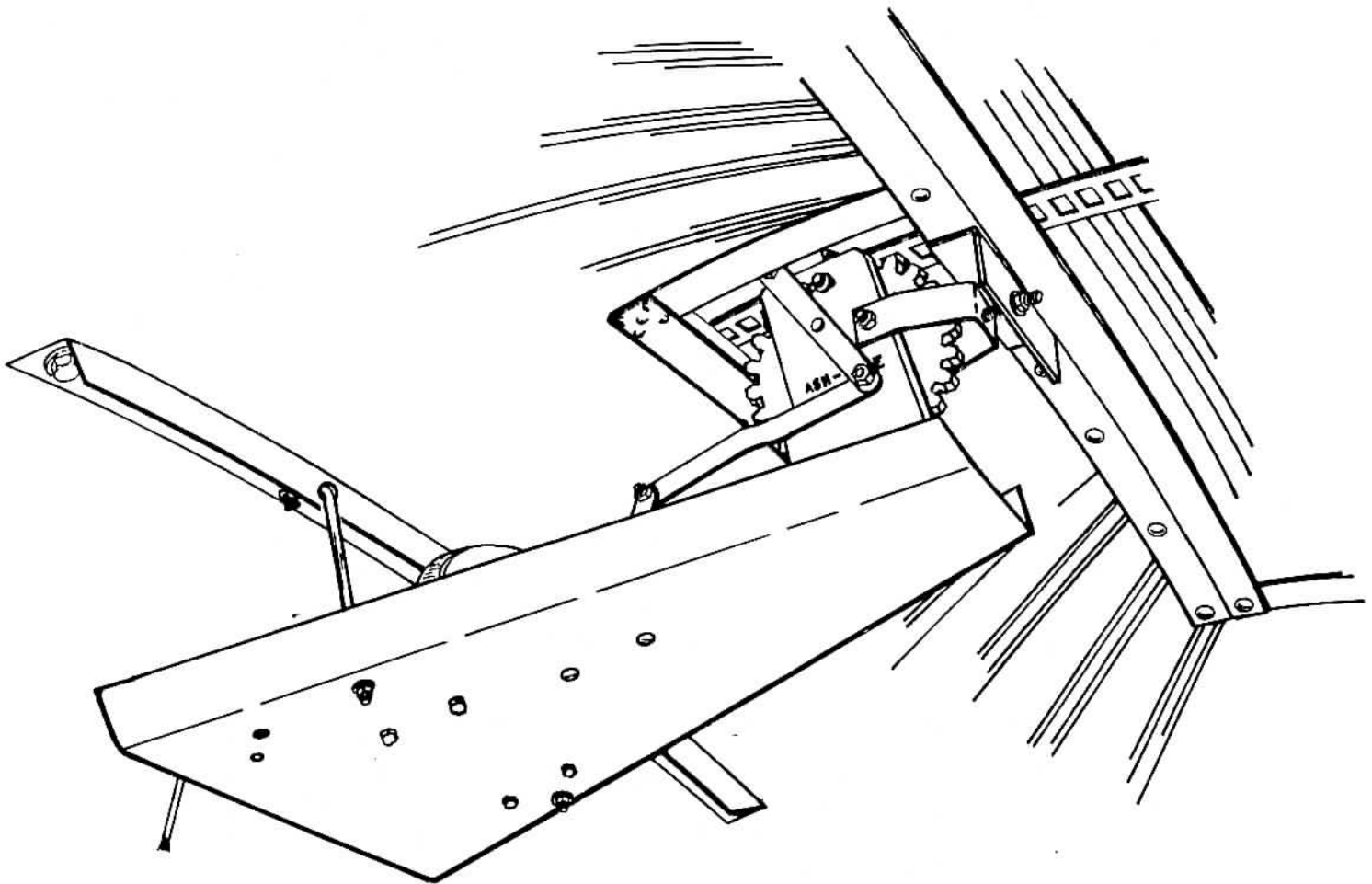


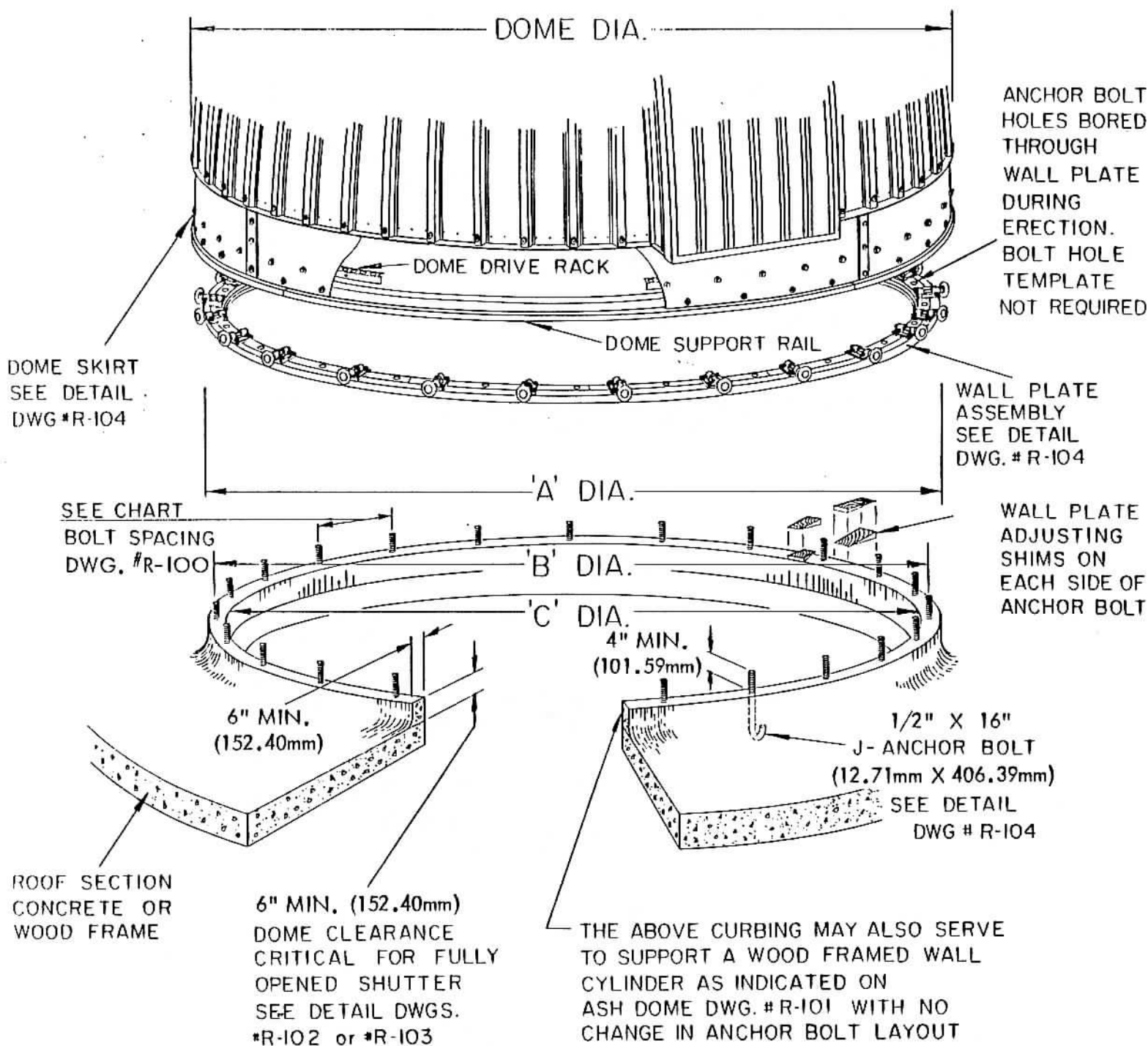
MASONRY SUPPORT WALL





SUSPENSION SYSTEM ASSEMBLY





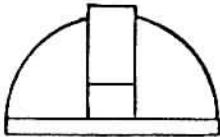
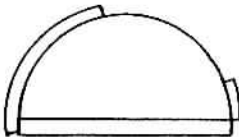
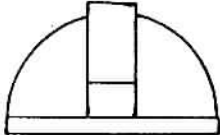
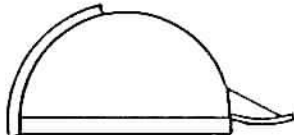
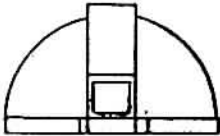
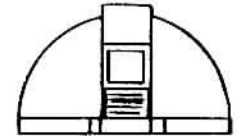
DOME DIAMETER	"A" DIAMETER	"B" DIAMETER	"C" DIAMETER
8'0" (2.438M)	7'5" (2.261M)	6'11" (2.108M)	6'6" (1.981M)
10'6" (3.200M)	10'2" (3.099M)	9'6" (2.896M)	9'2" (2.794M)
12'6" (3.810M)	12'2" (3.708M)	11'6" (3.505M)	11'2" (3.404M)
14'6" (4.420M)	14'2" (4.318M)	13'6" (4.115M)	13'2" (4.013M)
16'6" (5.029M)	16'2" (4.928M)	15'6" (4.724M)	15'2" (4.623M)
18'6" (5.639M)	18'2" (5.537M)	17'6" (5.334M)	17'2" (5.232M)

STANDARD ASH-DOME SIZE AND WEIGHT DATA

<u>DOMES DIAMETER</u>	<u>DOMES WEIGHT (NET)</u>	<u>WALL PLATE O.D.</u>	<u>WALL WEIGHT PER FT.</u>	<u>STD. SLOT WIDTH</u>	<u>WIDE SLOT</u>
10'6" (3.200M)	975 Lbs. (422.3Kg)	10'2" (3.099M)	128 Lbs. (58.1Kg)	34" (.864M)	45" (1.143M)
12'6" (3.810M)	1150 Lbs. (521.6Kg)	12'2" (3.708M)	153 Lbs. (69.4Kg)	34" (.864M)	45" (1.143M)
14'6" (4.420M)	1350 Lbs. (612.3Kg)	14'2" (4.318M)	173 Lbs. (78.5Kg)	42" (1.067M)	54" (1.372M)
16'6" (5.029M)	1625 Lbs. (737.1Kg)	16'2" (4.927M)	195 Lbs. (88.5Kg)	42" (1.067M)	54" (1.372M)
18'6" (5.639M)	2150 Lbs. (975.2Kg)	18'2" (5.537M)	219 Lbs. (99.3Kg)	61" (1.549M)	82" (2.083M)
20'6" (6.248M)	3525 Lbs. (1598.9Kg)	20'2" (6.147M)	240 Lbs. (108.9Kg)	71" (1.803M)	90" (2.286M)
22'6" (6.858M)	4075 Lbs. (1848.4Kg)	22'2" (6.756M)	263 Lbs. (119.3Kg)	71" (1.803M)	90" (2.286M)
24'6" (7.468M)	4600 Lbs. (2086.5Kg)	24'2" (7.366M)	286 Lbs. (129.7Kg)	71" (1.803M)	90" (2.286M)
26'6" (8.077M)	5100 Lbs. (2313.3Kg)	26'2" (7.976M)	311 Lbs. (141.1Kg)	71" (1.803M)	90" (2.286M)
28'6" (8.687M)	5700 Lbs. (2585.5 Kg)	28'2" (8.585M)	334 Lbs. (151.5Kg)	71" (1.803M)	90" (2.286M)
30'6" (9.296M)	6500 Lbs. (2948.4Kg)	30'2" (9.195M)	351 Lbs. (159.2Kg)	90" (2.286M)	108" (2.743M)
32'6" (9.906M)	7100 Lbs. (3220.5Kg)	32'2" (9.804M)	375 Lbs. (170.1Kg)	90" (2.286M)	108" (2.743M)
34'6" (10.516M)	7750 Lbs. (3515.3Kg)	34'2" (10.414M)	400 Lbs. (181.4Kg)	90" (2.286M)	108" (2.743M)
36'6" (11.125M)	8450 Lbs. (3832.9Kg)	36'2" (11.024M)	422 Lbs. (191.4Kg)	96" (2.438M)	115" (2.921M)

All ASH-DOME observing apertures are 100° in length unless otherwise specified.

ASH-DOME PRICE LIST

TYPE "A" SHUTTER		DOME SIZE DIAMETER	TYPE "R" MODELS		
			"RMA"	"REA"	"REB"
		8'0" - 2.44M	4,800.00	6,100.00	6,625.00
		10'6" - 3.20M	5,500.00	7,100.00	7,625.00
		12'6" - 3.81M	7,200.00	8,850.00	9,375.00
TYPE "B" SHUTTER					
					
		14'6" - 4.42M		11,000.00	11,525.00
		16'6" - 5.03M		14,200.00	14,725.00
		18'6" - 5.64M		19,500.00	20,500.00
LANPHIER SHUTTER			TYPE "M" MODELS		
			"MEA"	"MEBH"	
		20'6" - 6.25M	28,700.00	34,100.00	
		22'6" - 6.86M	33,500.00	38,900.00	
		24'6" - 7.47M	38,800.00	44,200.00	
		26'6" - 8.07M	46,200.00	51,600.00	
		28'6" - 8.68M	50,700.00	56,100.00	
		30'6" - 9.29M	57,300.00	62,700.00	
		32'6" - 9.90M	64,500.00	69,900.00	
		34'6" - 10.51M	72,000.00	77,400.00	
		36'6" - 11.12M	80,000.00	85,400.00	

TERMS OF PAYMENT

PRICES INDICATED ABOVE ARE (KD) F.O.B. THE FACTORY AT PLAINFIELD, ILLINOIS. PACKING OR CRATING CHARGES, COMMERCIAL FREIGHT, DELIVERY AND TECHNICIAN SERVICE CHARGES, AND ANY APPLICABLE STATE OR LOCAL TAXES, SHALL BE IN ADDITION TO THE SUMS INDICATED. PURCHASERS IN THE U.S.A. AND CANADA SHALL BE REQUIRED TO REMIT A 50% DEPOSIT PRIOR TO THE FABRICATION OF THEIR REQUIREMENTS. PAYMENT MAY BE MADE BY A PERSONAL OR BANK CHECK OR MONEY ORDER (U.S. FUNDS). THE REMAINING BALANCE SHALL BECOME PAYABLE UPON NOTIFICATION THAT THE MATERIALS ARE IN READINESS FOR SHIPMENT. ALL SHIPMENTS LEAVING THE CONTINENTAL UNITED STATES ARE REQUIRED TO ESTABLISH A "CONFIRMED IRREVOCABLE LETTER OF CREDIT" AT THE FIRST NATIONAL BANK OF CHICAGO, ILLINOIS, FOR THE TOTAL AMOUNT OF ALL SUMS INVOLVED, INCLUDING FREIGHT CHARGES. ALL PRICES ARE GUARANTEED FOR A PERIOD OF 90 DAYS FROM THE DATE OF OUR LETTER OF QUOTATION, AFTER WHICH THEY ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE. FINISHED MATERIALS HELD IN FACTORY STORAGE LONGER THAN 30 DAYS AFTER THE ORIGINAL SCHEDULED DELIVERY DATE SHALL BE INVOICED IN FULL, WITH THE PAYMENT DUE IMMEDIATELY UPON THE RECEIPT OF THE INVOICE.

DELIVERY

TRUCK DELIVERY OF THE MATERIALS AND DOME COMPONENTS TO THE JOB SITE IS AVAILABLE FOR MOST AREAS WITHIN THE UNITED STATES AND CANADA. THE SERVICES OF AN EXPERT FIELD ERECTION SUPERVISORY TECHNICIAN ARE AVAILABLE AT SITES ANY PLACE ABOUT THE WORLD FOR A NOMINAL FEE. ALL MODEL "M" DOME UNITS REQUIRE THE SERVICES OF OUR SUPERVISOR TO RENDER THE ONE YEAR GUARANTEE VALID. SHIPMENTS MADE VIA COMMERCIAL TRANSPORT ARE SUBJECT TO CRATING AND PACKING SERVICE CHARGES. A SET OF ASSEMBLY INSTRUCTIONS ARE INCLUDED WITH EACH CRATED SHIPMENT.

GENERAL INFORMATION

All ASH-DOMES with diameters 10'6" through 18'6" are designated as Model "R" domes. The letter "E" or "M" following the "R" indicates either an all electric operated dome, or a manually operated dome. The third letter indicates the type of shutter; the letter "A" indicates a Type A shutter (up-and-over), as indicated on our standard drawing R-102. The letter "B" indicates a Type B shutter (hinged drop-out lower section), as indicated on our standard drawing R-103. **EXAMPLE** — 16'6" REA would be a 16'6" dia. Model "R", all electrically controlled, with a two-section in-tandem up-and-over shutter. **EXAMPLE** — 10'6" RMB would be 10'6" dia. Model "R", manually operated with a hinged drop-out lower shutter section.

All ASH-DOMES 20'6" and larger are designated as Model "M" domes. The

letter "E" following the "M" indicates an all electric controlled dome. Model "M" domes are not available with manual controls except by special arrangements. The third letter indicates the type of shutter. A third letter "A" indicates a two-section in-tandem up-and-over shutter, as indicated on our standard drawing M-102. A third letter "B" indicates a hinged drop-out lower section, as indicated on our standard drawing M-103. The letter "H" following the third letter indicates that the drop-out section is hydraulically operated. **EXAMPLE** — 24'6" MEA would be a 24'6" dia. Model "M", all electrically controlled with a Type A, two section in-tandem up-and-over shutter. **EXAMPLE** — 24'6" MEBH would be 24'6" dia. Model "M", all electrically controlled with a Type B (hinged drop-out) lower shutter section, which is hydraulically operated.

OPTIONAL FEATURES AND EQUIPMENT

All ASH-DOMES are available with a number of optional features at an increased cost. Charges for optional equipment will be forwarded upon request. These features include:

1. Type B shutter arrangement with a hinged drop-out section fitted with a manual or electric motor driven hydraulic unit operating device.
2. The aperture length may be increased to 105° on all ASH-DOMES. The S & W* chart shows the standard aperture and suggested wide aperture. Wider aperture widths are available.
3. A manual shutter over-ride device can be furnished on all Model "R" ASH-DOMES 10'6" diameter through 16'6" diameter. This device is standard equipment on 18'6" Model "R" and all Model "M" domes. The purpose of this option is to enable the operator to manually operate the shutter in case of an electrical power failure.
4. Neoprene coated nylon windscreen curtains are available on all ASH-DOMES. These curtains are attached to the upper shutter section. A suitable observing port is left between the upper shutter section and the windscreen curtain. With the shutter in closed position, the curtain folds automatically and is stored on a shelf at the horizon end of the aperture.

5. On the smaller Model "R" ASH-DOMES, a plate glass covered observing aperture can be installed in the lower shutter section. Hinged metal coverings are provided to protect the glass when not in use. When a plate glass section is installed in an ASH-DOME, a roll up type metal windscreen is furnished which is attached to the bottom of the lower shutter section. As the shutter is raised, the roll up type windscreen follows and completely closes the dome to the weather. This feature, known as the Lanphier Shutter System, will permit air conditioning the observatory in hot weather, and heating during cold weather.
6. All ASH-Domes are available with various azimuth speeds up to 15° per second. ASH-DOME can provide electric motors of various voltages, both A.C. and D.C.
7. Polyurethane Foam Sheeting ($\frac{1}{2}$ " or 1" thick) is available for insulating the ASH-DOME and wall cylinder. A cutting template is furnished for cutting the foam sheeting to the shape of the dome panels.
8. ASH-DOME wall cylinders are available with various size access doors. (Standard doors 2'8" x 6'8"). Should an extra wide door be needed, the cylinders can be equipped with double doors with removable center mullions.

NOTE - Due to circumstances beyond our control, we reserve the right to modify the design of, and/or substitute materials incorporated into the ASH-DOME without prior notice.

OPTIONAL FEATURES PRICE LIST

NA= NOT AVAILABLE
 * = STD. HEIGHT - OTHER HGTS.
 AVAILABLE UPON REQUEST
 ** = SHIPPING NOT INCLUDED

DOMESTIC SIZE	STANDARD APERTURE WIDTH	WIDE APERTURE WIDTH	WIDE APERTURE COST	TYPE "B" DROP-OUT SHUTTER	MANUAL OVERRIDE	*8 FT. HIGH SUPPORT WALL CYL.	LAMPPIER SHUTTER SYSTEM	NYLON ACCORDIAN WINDSCREEN	CRATING** DOME ONLY	CRATING** DOME AND WALL CYL.
8'0"	24"	34"	\$ 650.00	\$ 525.00	\$600.00	\$3,300.00	\$3,150.00	\$1,450.00	\$1,300.00	\$1,700.00
10'6"	34"	45"	\$ 650.00	\$ 525.00	\$600.00	\$3,400.00	\$3,350.00	\$1,550.00	\$1,450.00	\$1,800.00
12'6"	34	45"	\$ 650.00	\$ 525.00	\$600.00	\$3,900.00	\$3,500.00	\$1,750.00	\$1,600.00	\$2,000.00
14'6"	42"	54"	\$ 650.00	\$ 525.00	\$600.00	\$4,350.00	\$3,700.00	\$1,900.00	\$1,800.00	\$2,200.00
16'6"	42"	54"	\$ 650.00	\$ 525.00	\$600.00	\$4,750.00	\$4,100.00	\$2,100.00	\$2,000.00	\$2,450.00
18'6"	62"	82"	\$ 925.00	\$1,000.00	STANDARD	\$5,200.00	\$4,600.00	\$2,250.00	\$2,200.00	\$2,700.00
20'6"	71"	90"	\$ 925.00	\$5,400.00	STANDARD	NA	NA	\$2,450.00	NA	NA
22'6"	71"	90"	\$1,300.00	\$5,400.00	STANDARD	NA	NA	\$2,600.00	NA	NA
24'6"	71"	90"	\$1,300.00	\$5,400.00	STANDARD	NA	NA	\$2,800.00	NA	NA
26'6"	71"	90"	\$1,475.00	\$5,400.00	STANDARD	NA	NA	\$3,000.00	NA	NA
28'6"	71"	90"	\$1,475.00	\$5,400.00	STANDARD	NA	NA	\$3,150.00	NA	NA
30'6"	90"	108"	\$1,475.00	\$5,400.00	STANDARD	NA	NA	\$3,350.00	NA	NA
32'6"	90"	108"	\$1,475.00	\$5,400.00	STANDARD	NA	NA	\$3,550.00	NA	NA
34'6"	90"	108"	\$1,475.00	\$5,400.00	STANDARD	NA	NA	\$3,750.00	NA	NA
36'6"	120"	NA	NA	\$5,400.00	STANDARD	NA	NA	\$3,950.00	NA	NA



March 22, 1991

Walter A. Rison
P. O. Box 134
Pisgah, Maryland 20640

Dear Sir:

This is in response to your letter of inquiry regarding ASH-DOMES. In accord with your request, we are enclosing a brochure, our current price lists, a partial listing of ASH-DOME owners, a general information sheet, and a number of drawings covering our smaller standard Model R dome units.

Presently we are able to make a standard Model R dome unit available for delivery within approximately 90 days after the receipt of a purchase order and the required 50% deposit. Crating and shipping charges are nominal and shall be quoted upon request when your exact dome requirements become known.

ASH-DOME installations are located in most states. Should you be interested in inspecting a conveniently located installation, we should be most happy to indicate the exact locations of a number of them and to aid you in making the necessary contacts to arrange for inspection visits.

We trust that we have included information which shall be adequate for your initial purposes. Please call on us for any additional details that may be required.

Thank you for this opportunity to be of service.

Very truly yours,

A handwritten signature in cursive script that reads "Richard I. Olson".

RICHARD I. OLSON - President
Ash Mfg. Company

RIO:po

Enc. Brochure #3