

STORAGE IN APPROVED MAGAZINES OF PROPELLANTS AND BULK EXPLOSIVES PACKED IN FIBERBOARD OR METAL DRUMS (NOT UNITIZED) FOR SHORT-TERM STORAGE ONLY

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U.S. ARMY MATERIEL COMMAND DRAWING			
APPROVED, U.S. ARMY ARMAMENT, MUNITIONS AND CHEMICAL COMMAND <i>David A. Pishorick</i> SMCAR-ESK	DRAFTSMAN	D. WHITMORE	
	ENGINEER	M. DAEUMER	
	SUPPLY ENGINEERING DIVISION	<i>Thomas P. ...</i>	
APPROVED BY ORDER OF COMMANDING GENERAL, U.S. ARMY MATERIEL COMMAND <i>William F. Ernst</i>	LOGISTICS ENGINEERING OFFICE	<i>William F. Ernst</i>	
U.S. ARMY DEFENSE AMMUNITION CENTER AND SCHOOL	NOVEMBER 1992		
	CLASS	DIVISION	DRAWING
	19	48	4238
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			1-3-4-14-22 FN1000

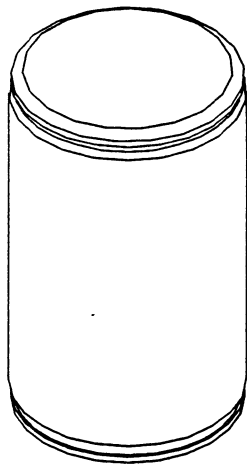
DO NOT SCALE

GENERAL NOTES

- A. THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AR 740-1 AND AUGMENTS TM 743-200-1 (CHAPTER 5).
- B. THE STORAGE PROCEDURES DEPICTED WITHIN THIS DOCUMENT ARE APPLICABLE FOR STORAGE IN APPROVED MAGAZINES OF NUMEROUS LOTS OF PROPELLANTS AND BULK EXPLOSIVES PACKED IN FIBERBOARD OR METAL DRUMS (NOT UNITIZED) TO MEET SHORT-TERM STORAGE REQUIREMENTS AT PRODUCTION PLANTS PRIOR TO TRANSPORT TO USERS AND AT LOADING PLANTS PRIOR TO LOADING OPERATIONS. CAUTION: THE ALLOWABLE "EXPLOSIVE LIMIT" ESTABLISHED FOR A MAGAZINE IS NOT TO BE EXCEEDED.
- C. IF THE MAGAZINE TO BE USED IS KNOWN TO BE "DRY" AND FREE OF CONDENSATION AND MOISTURE, SHORT-TERM STORAGE WILL BE A MAXIMUM OF 180 DAYS. HOWEVER, IF THE MAGAZINE IS KNOWN TO BE SUSCEPTIBLE TO CONDENSATION AND MOISTURE, SHORT-TERM STORAGE WILL BE REDUCED TO 120 OR 90 DAYS MAXIMUM. STACKS SHOULD BE INSPECTED PERIODICALLY TO ASSURE STABILITY IS MAINTAINED.
- D. IF IT IS EXPECTED THAT STORAGE OF BULK EXPLOSIVES OR PROPELLANTS MAY EXCEED 180 DAYS, THE STORAGE METHODS AS SPECIFIED IN AMC SERIES DRAWINGS 19-48-4007/1 THRU 4007/7, AS APPLICABLE, WILL BE USED.
- E. TO IMPROVE HANDLING AT PRODUCTION PLANTS AND LOADING PLANTS AND TO FACILITATE INTRAPLANT MOVEMENT BETWEEN PRODUCTION/LOADING LINES AND STORAGE SITES, FIBERBOARD OR METAL DRUMS OF PROPELLANTS OR BULK EXPLOSIVES MAY BE PLACED ON PALLETS (SLAVE PALLETS). SUGGESTED CONFIGURATIONS ARE SHOWN ON PAGES 7, 18, AND 19, AND WILL NORMALLY NOT REQUIRE BANDING OR DUNNAGE IF ADEQUATELY SIZED PALLETS ARE USED AND DRUMS ARE PLACED IN A SINGLE LAYER ON A PALLET. DRUMS WILL NOT OVERHANG THE PALLET DECK MORE THAN 2". PALLET UNITS WILL NOT BE STACKED MORE THAN TWO-HIGH IN STORAGE, AND WILL NOT BE STACKED IN INTRAPLANT MOVEMENT.
- F. THE STORAGE PROCEDURES DEPICTED HEREIN MAY ALSO BE UTILIZED TO STORE PROPELLANTS AND BULK EXPLOSIVES IN FIBERBOARD OR METAL DRUMS IN OTHER TYPES OF APPROVED MAGAZINES. MINOR ADJUSTMENTS MAY BE MADE TO FACILITATE STORAGE IN OTHER TYPES OF MAGAZINES, HOWEVER, THE BASIC PRINCIPLES AS DEPICTED HEREIN WILL BE COMPLIED WITH.
- G. STORED DRUMS MUST NOT CONTACT THE WALLS OR COLUMNS OF A MAGAZINE. TO PROVIDE FOR THIS MANDATORY CLEARANCE REQUIREMENT, DRUMS MAY BE ELIMINATED FROM A DEPICTED STORAGE PATTERN AS NECESSARY.
- H. AISLE DIMENSIONS SHOWN MAY BE ADJUSTED TO SUIT LOCAL CONDITIONS AND/OR AVAILABLE MATERIAL HANDLING EQUIPMENT.
- J. THE MAXIMUM FLOOR LOAD FOR A MAGAZINE AS PRESCRIBED BY LOCAL STANDARDS WILL NOT BE EXCEEDED.
- K. THE PROCEDURES WITHIN THIS DRAWING DEPICT STORAGE OF MULTIPLE LOTS OR STORAGE OF COMPATIBLE ITEMS WITH DIFFERENT NATIONAL STOCK NUMBERS IN THE SAME MAGAZINE AND WILL REQUIRE CAREFUL PLANNING SO AS TO INSURE ACCESSIBILITY TO ANY LOT OR ITEM FOR INSPECTION/INVENTORY OR FOR REMOVAL. EACH ITEM OR LOT MUST BE ACCESSIBLE FROM AN AISLE TO PERMIT REMOVAL OF A LOT OR ITEM WITHOUT HANDLING OR RELOCATING OTHER ITEMS OR LOTS.
- L. UNLESS OTHERWISE SPECIFIED, DUNNAGE LUMBER THROUGHOUT THIS PROCEDURAL DRAWING IS OF NOMINAL SIZE. FOR EXAMPLE 2" X 4" MATERIAL IS ACTUALLY 1-1/2" THICK BY 3-1/2" WIDE.

MATERIAL SPECIFICATIONS

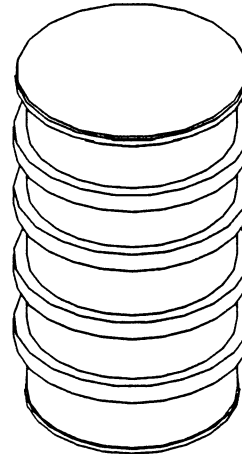
LUMBER - - : SEE TM 743-200-1, DUNNAGE LUMBER, FED SPEC MM-L-751.



TYPE "A" DRUM
FIBERBOARD DRUM
 (METAL COVER AND BOTTOM)
 (16.38" DIA. X 27.63" HIGH)

EXAMPLE

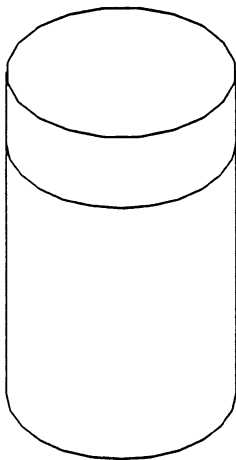
PROPELLANT WT.	--	165 LBS
DRUM WT.	----	11 LBS
GROSS WT.	-----	176 LBS



TYPE "B" DRUM
ALL METAL DRUM
 (16.38" DIA X 27.12" HIGH)

EXAMPLE

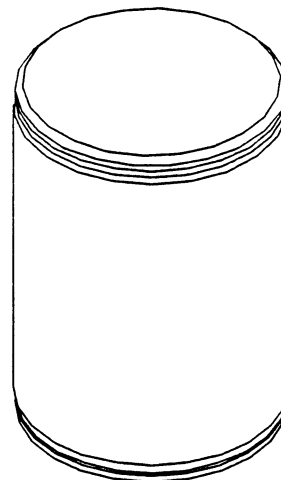
PROPELLANT WT.	--	165 LBS
DRUM WT.	----	17 LBS
GROSS WT.	-----	182 LBS



TYPE "C" DRUM
ALL FIBERBOARD DRUM
 (14.5" DIA X 27.5" HIGH
 OR 15.8125" DIA X 25" HIGH)

EXAMPLE (BOTH SIZE DRUMS)

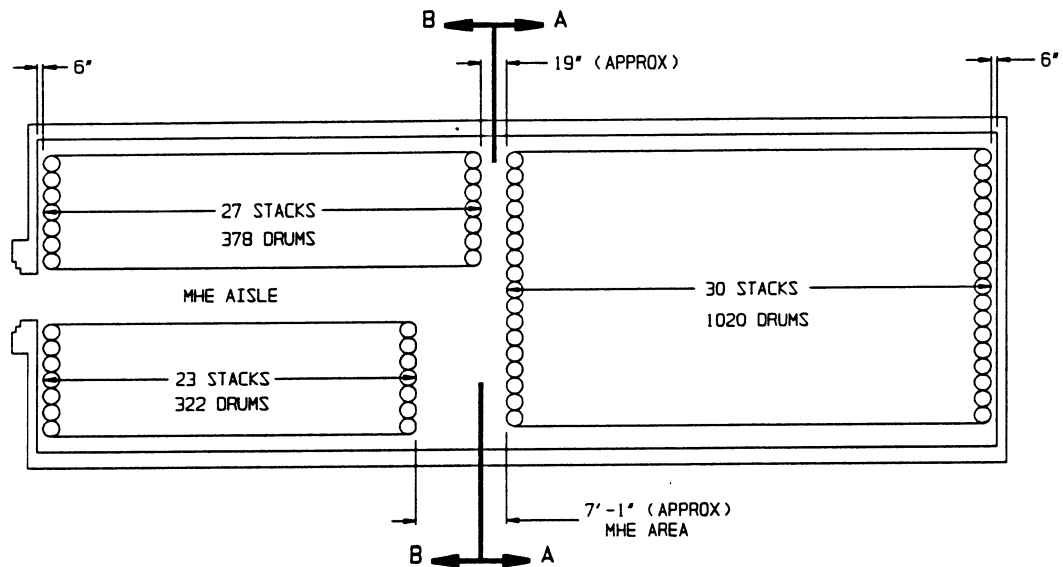
NITROGUANIDINE WT.	--	50 LBS
DRUM WT.	----	7 LBS
GROSS WT.	-----	57 LBS



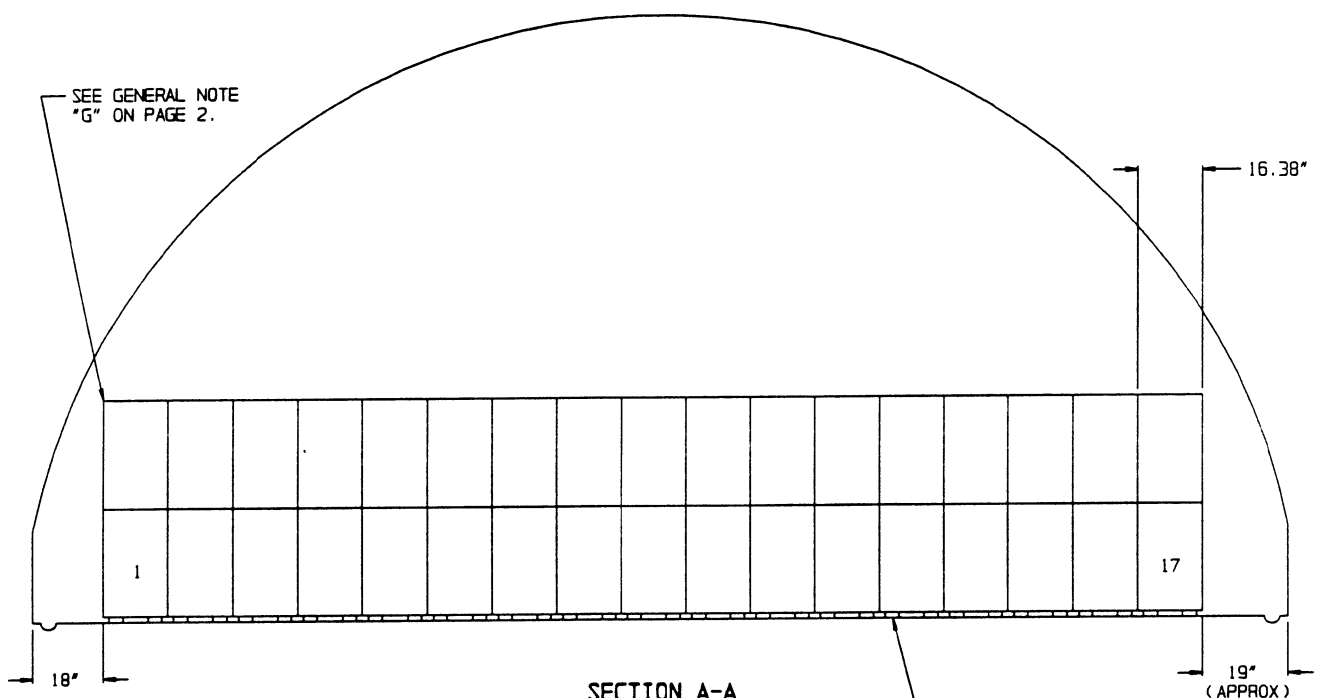
TYPE "D" DRUM
FIBERBOARD DRUM
 (METAL COVER AND BOTTOM)
 (19.13" DIA. X 27.5" HIGH)

EXAMPLE

BULK EXPLOSIVE WT.	--	244 LBS
DRUM	----	11 LBS
GROSS WT.	-----	255 LBS



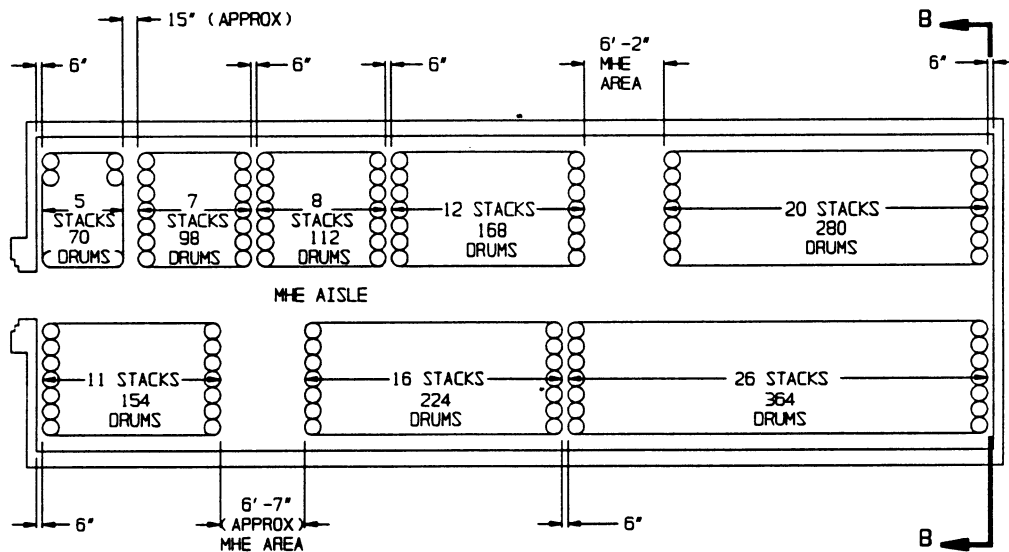
PLAN VIEW
(81'-0" IGL00 SHOWN)



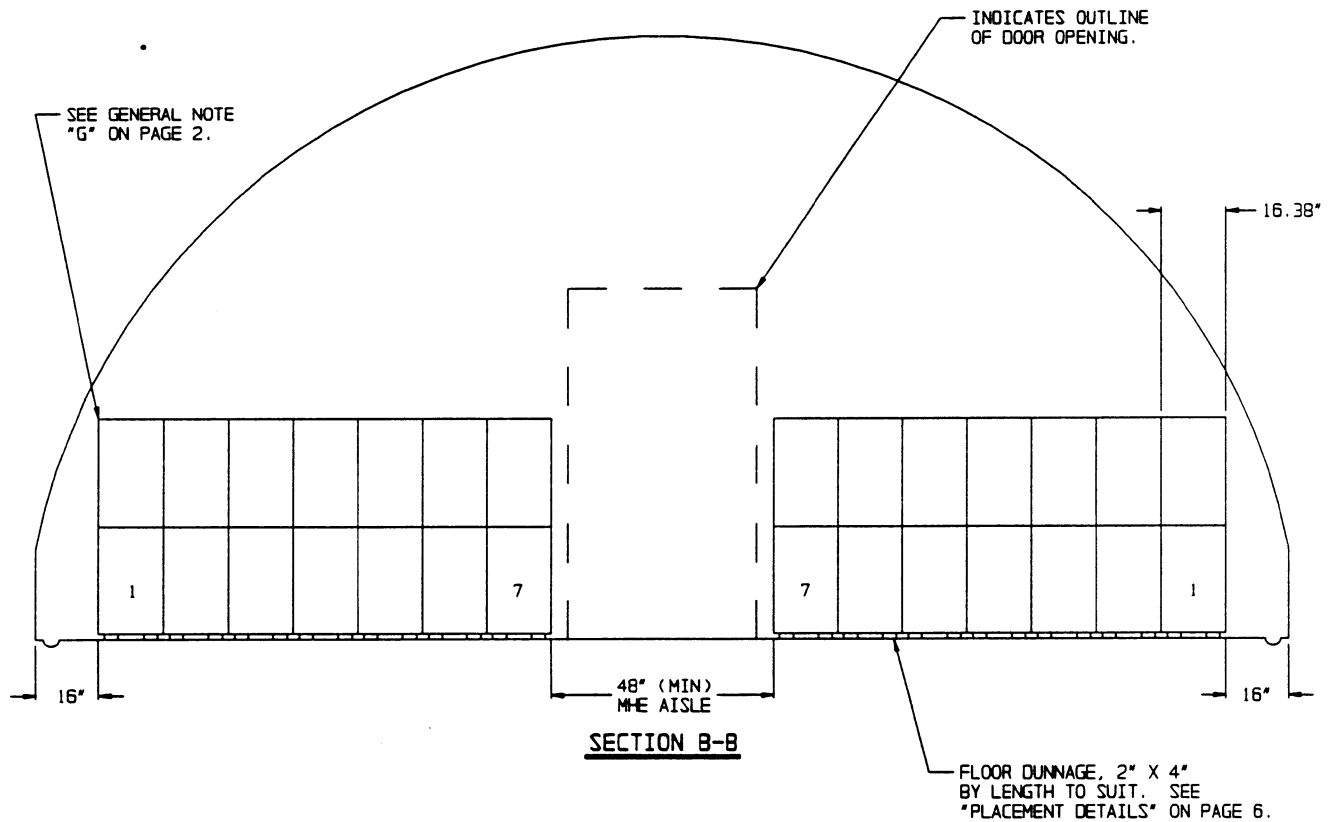
SECTION A-A
(34 DRUMS/STACK)

FLOOR DUNNAGE, 2" X 4"
BY LENGTH TO SUIT. SEE
"PLACEMENT DETAILS" ON PAGE 6.

FOR "GENERAL NOTES" AND "MATERIAL SPECIFICATIONS", SEE PAGE 2.

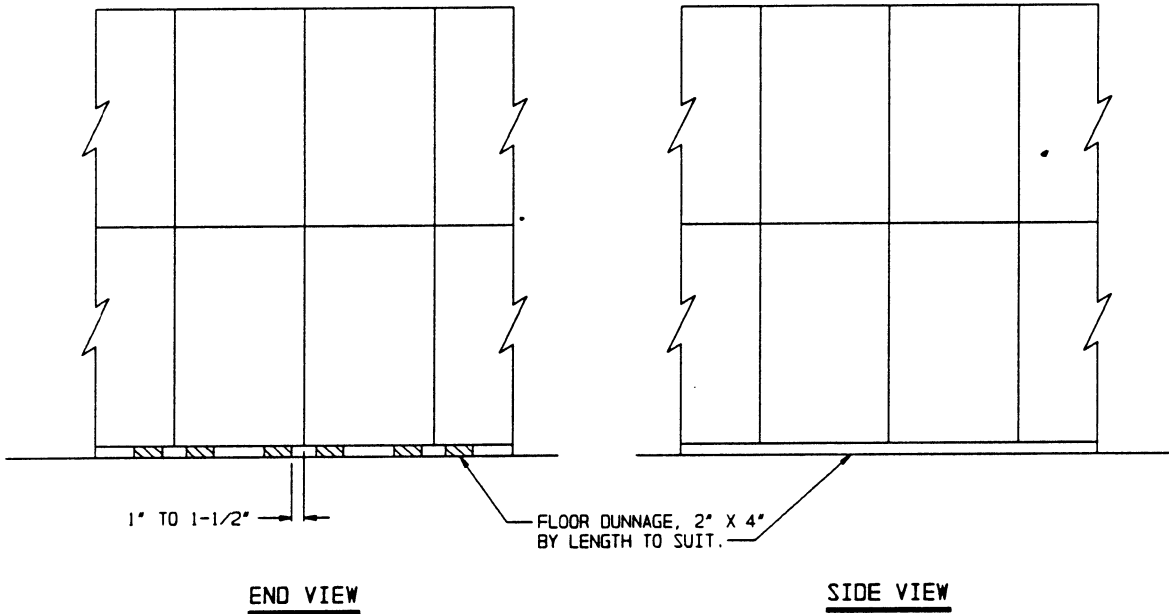


PLAN VIEW
(81'-0" IGLOO SHOWN)



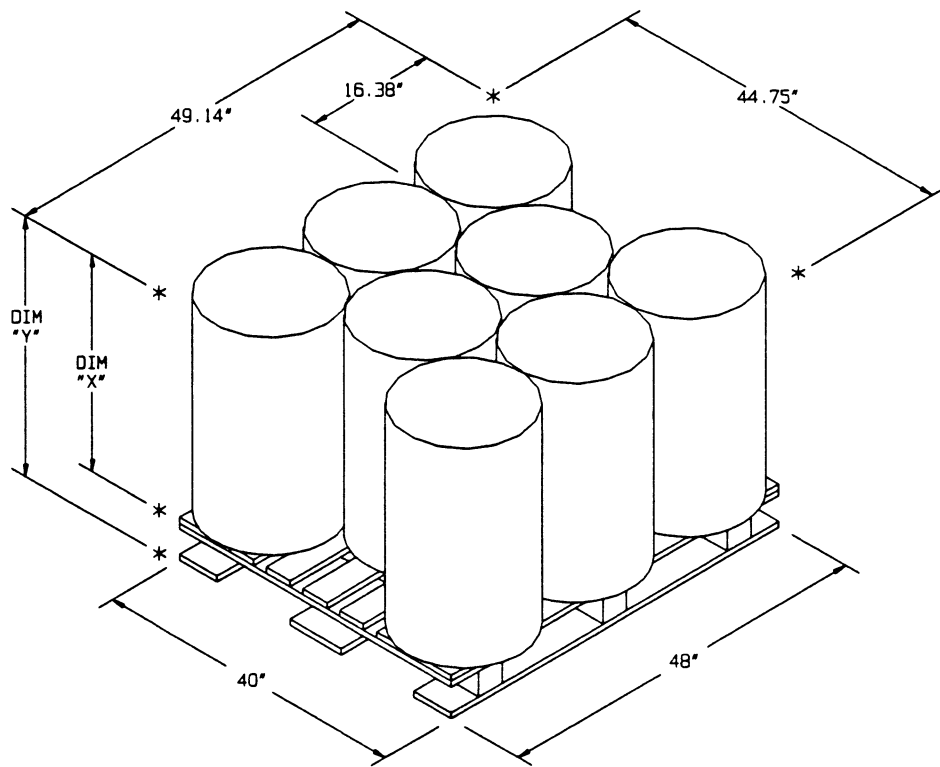
SECTION B-B

FOR "GENERAL NOTES" AND "MATERIAL SPECIFICATIONS", SEE PAGE 2.



FLOOR DUNNAGE PLACEMENT DETAILS

NOTE: FLOOR DUNNAGE MAY BE POSITIONED LATERALLY OR LONGITUDINALLY WITHIN A LOT, AS DESIRED, TO FACILITATE OPERATIONS AND AVAILABLE MATERIAL HANDLING EQUIPMENT (MHE).

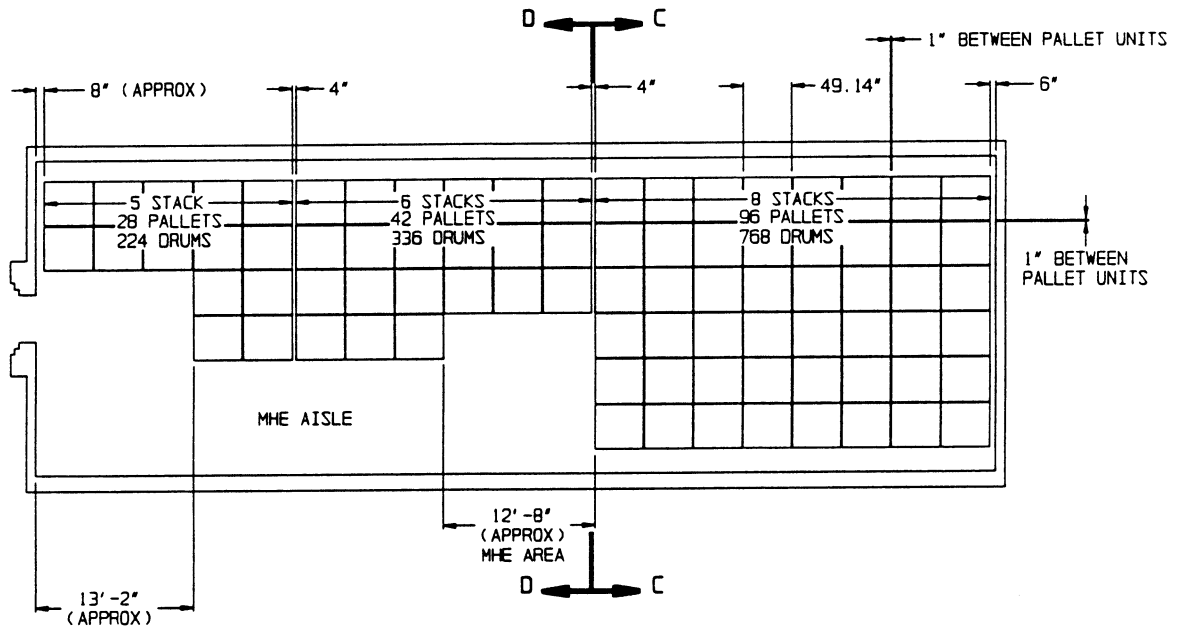


TYPICAL PALLET UNIT

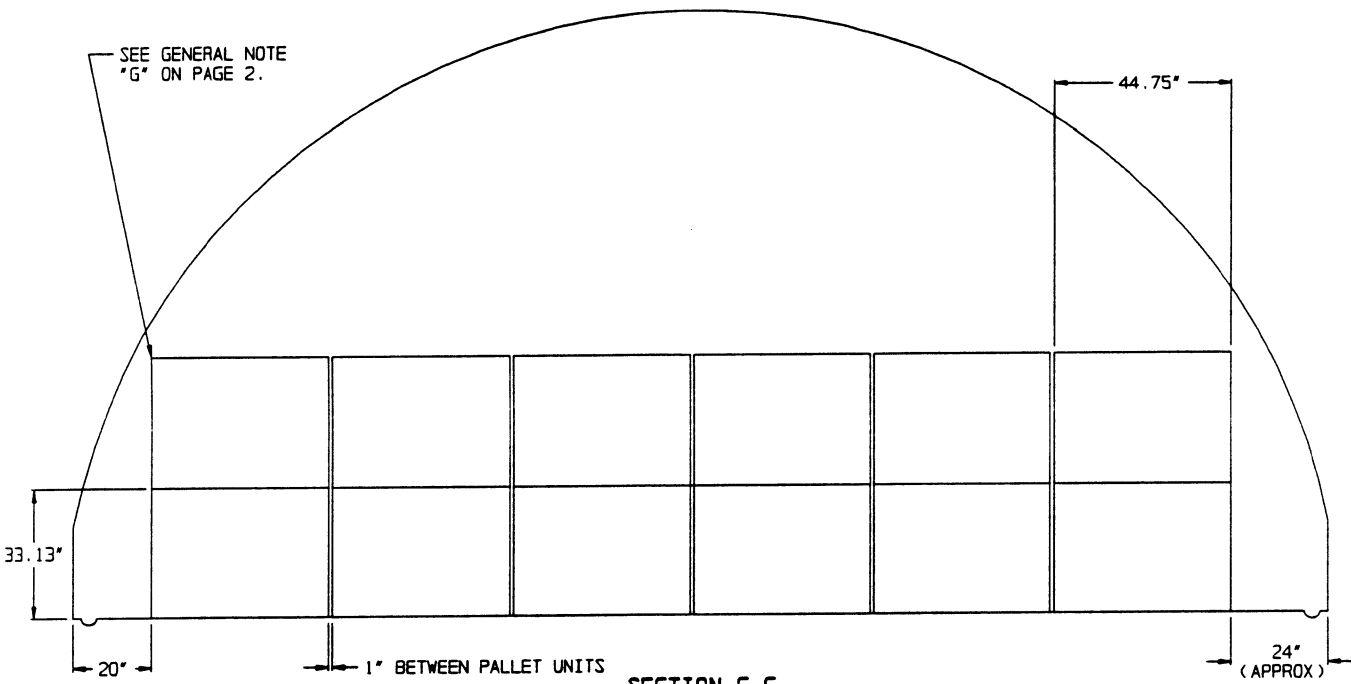
DRUM: TYPE "A"; X = 27.63"; Y = 33.13"
 DRUM: TYPE "B"; X = 27.12"; Y = 32.62"

SPECIAL NOTES:

1. STORAGE AS SHOWN IS FOR FIBERBOARD OR METAL DRUMS OF VARIOUS SIZES PLACED ON 40" X 48" PALLETS AND CONTAINING VARIOUS PROPELLANTS OR EXPLOSIVES.
2. THE DRUM SIZES SHOWN ARE TYPICAL; ANY SIZE DRUM MAY BE PLACED ON A PALLET FOR STORAGE PURPOSES. ANY SIZE PALLET MAY BE USED, HOWEVER A SIZE SHOULD BE SELECTED WHICH WILL BE NEARLY FILLED WITH DRUMS IN ORDER TO PROVIDE GOOD STACKABILITY. ALSO, A PALLET SIZE SHOULD BE SELECTED THAT WILL PROVIDE FOR FULL OR ALMOST FULL BEARING OF THE DRUMS ON A PALLET. OVERHANG OF DRUMS ON A PALLET IS LIMITED TO NOT MORE THAN TWO INCHES (2").
3. PALLETIZED DRUMS WILL NOT BE STACKED MORE THAN TWO PALLETS HIGH IN STORAGE.
4. PALLETIZATION OF DRUMS IS SOLEY TO IMPROVE HANDLING AT PRODUCTION PLANTS AND LOADING PLANTS AND TO FACILITATE INTRAPLANT MOVEMENT BETWEEN PRODUCTION/LOADING LINES AND STORAGE SITES. PALLETIZED DRUMS WILL NOT BE STACKED IN INTRAPLANT MOVEMENT.



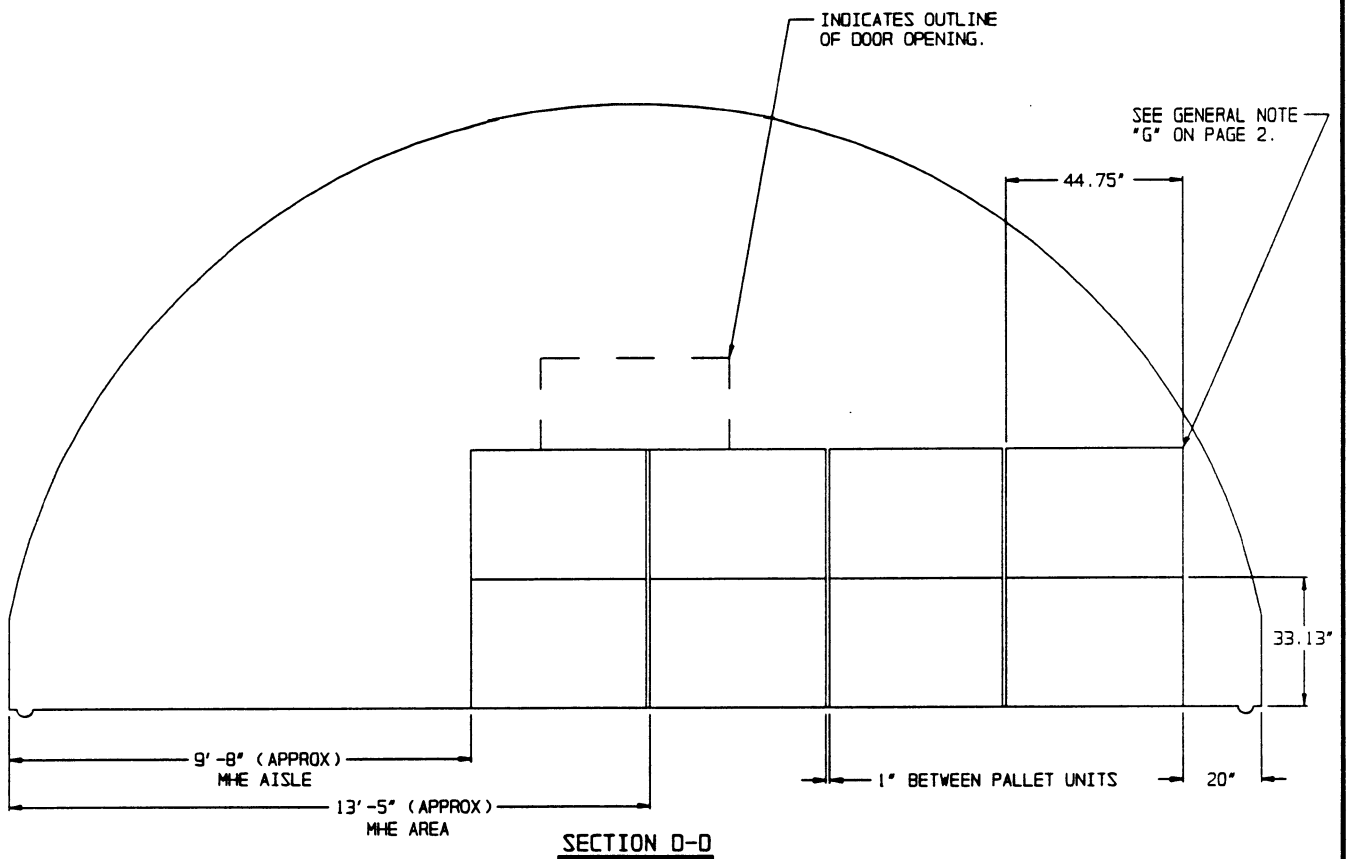
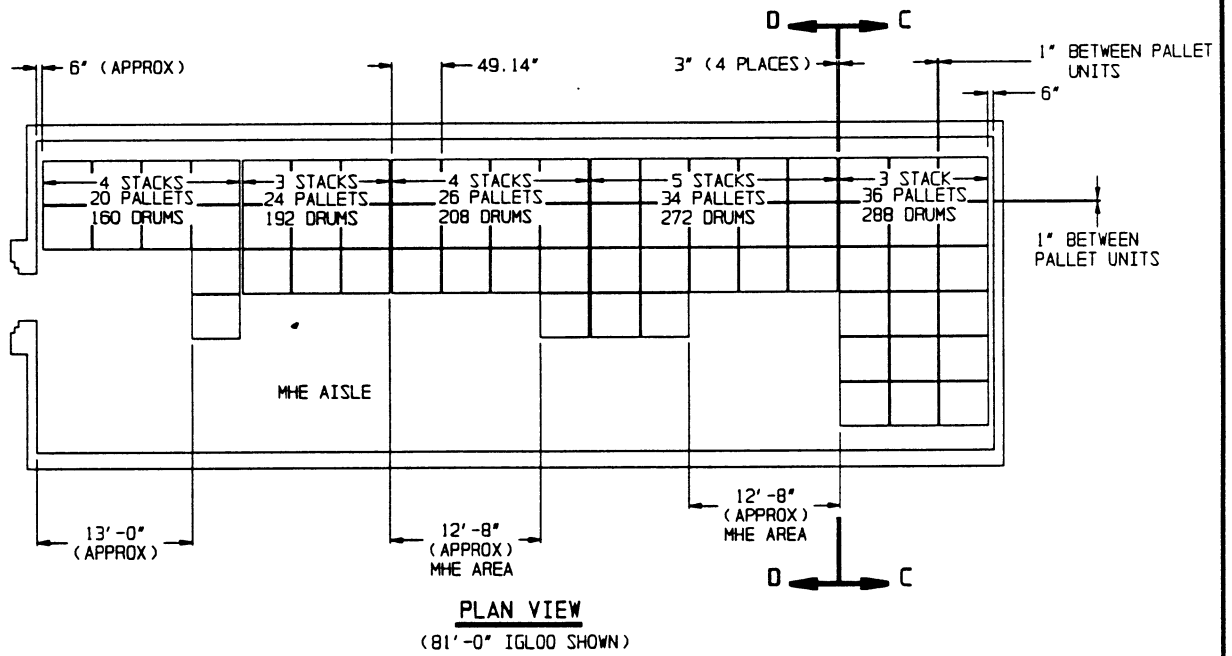
PLAN VIEW
(81'-0" IGLOOD SHOWN)



SECTION C-C
12 PALLET UNITS PER STACK
96 DRUMS PER STACK

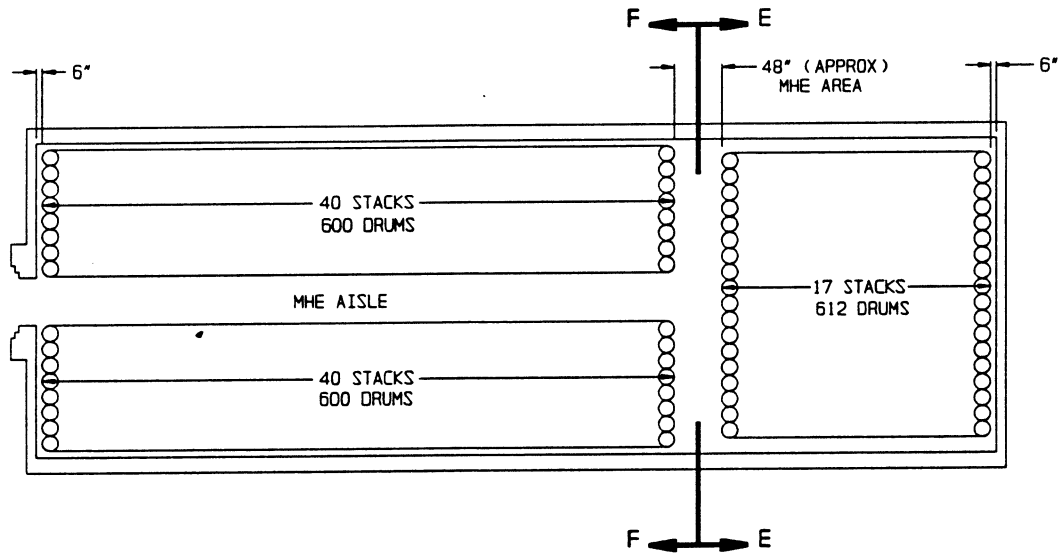
NOTE: SEE PAGE 7 FOR SUGGESTED PALLET LOADING AND SPECIAL NOTES.

FOR "GENERAL NOTES" SEE PAGE 2.

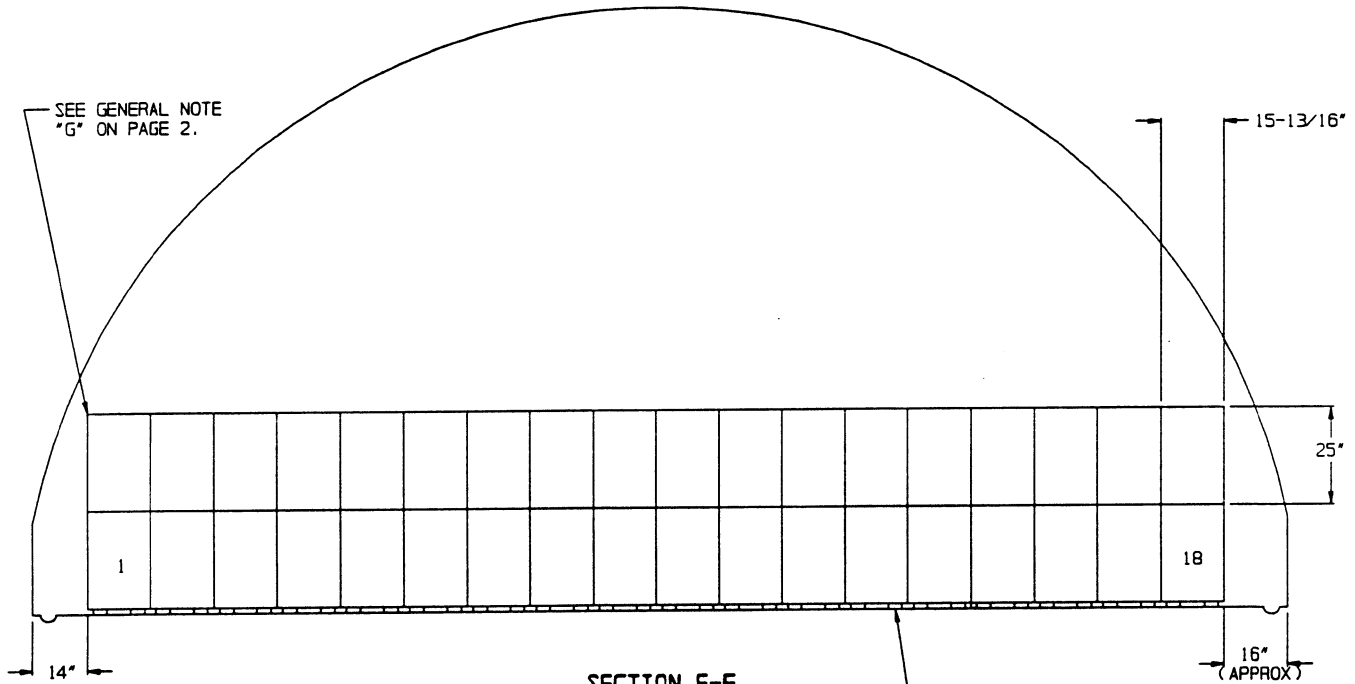


NOTE: SEE PAGE 7 FOR SUGGESTED PALLET LOADING AND SPECIAL NOTES.

FOR "GENERAL NOTES" SEE PAGE 2.



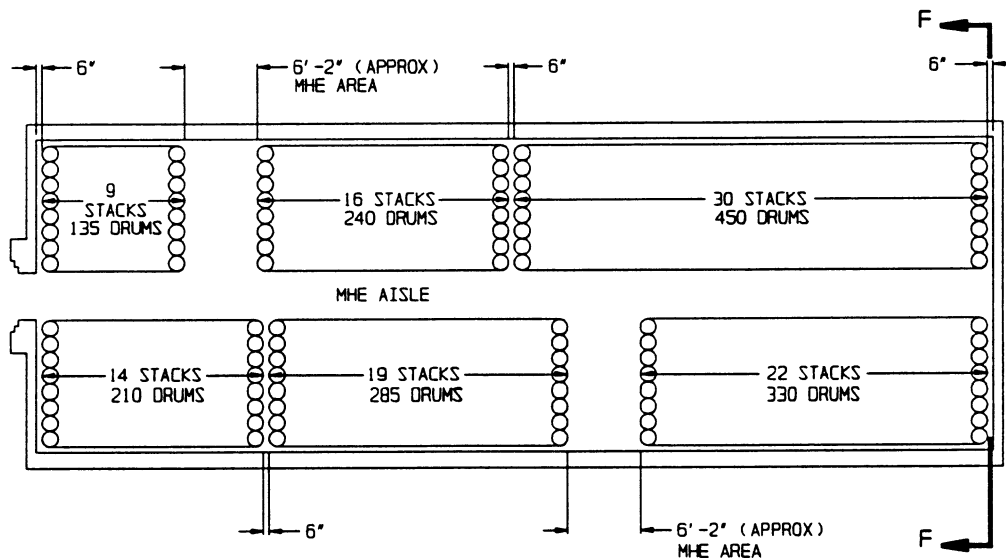
PLAN VIEW
(81'-0" IGLOO SHOWN)



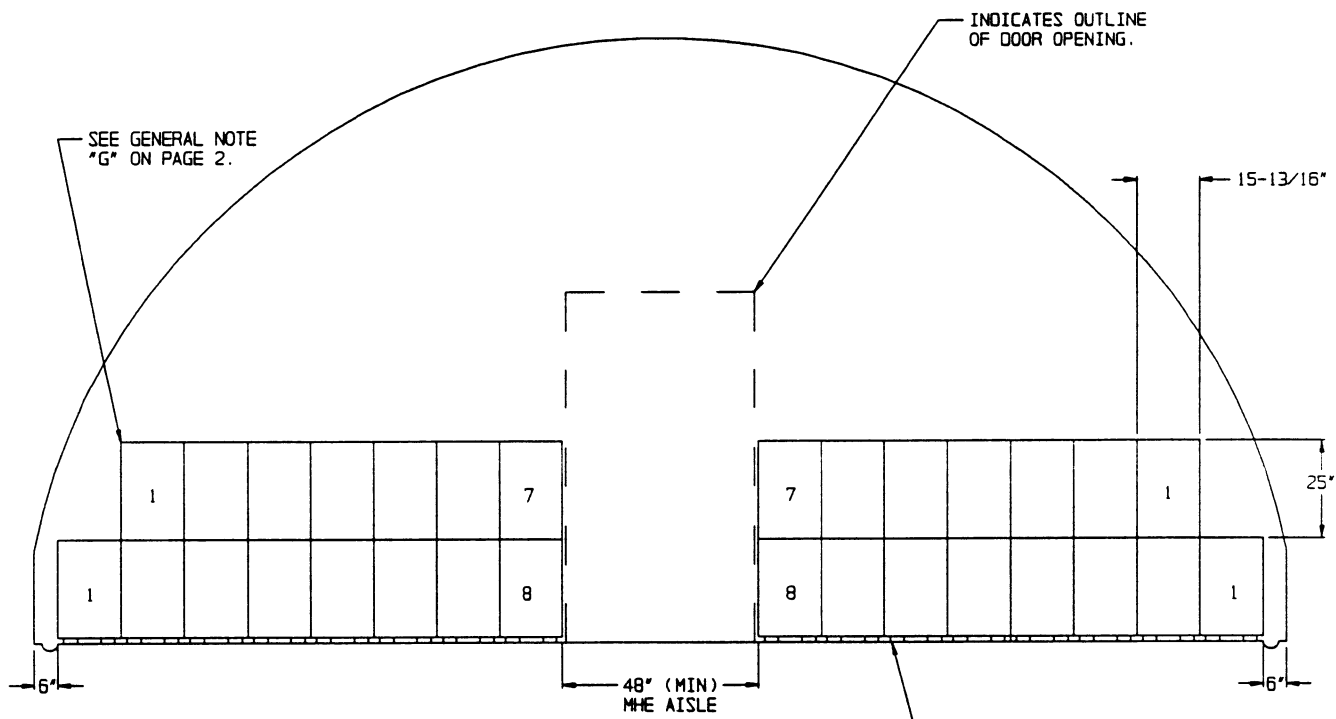
SECTION E-E
(36 DRUMS/STACK)

FLOOR DUNNAGE, 2" X 4" BY
LENGTH TO SUIT. SEE
"PLACEMENT DETAIL" ON PAGE 6.

**FOR "GENERAL NOTES" AND "MATERIAL
SPECIFICATIONS", SEE PAGE 2.**

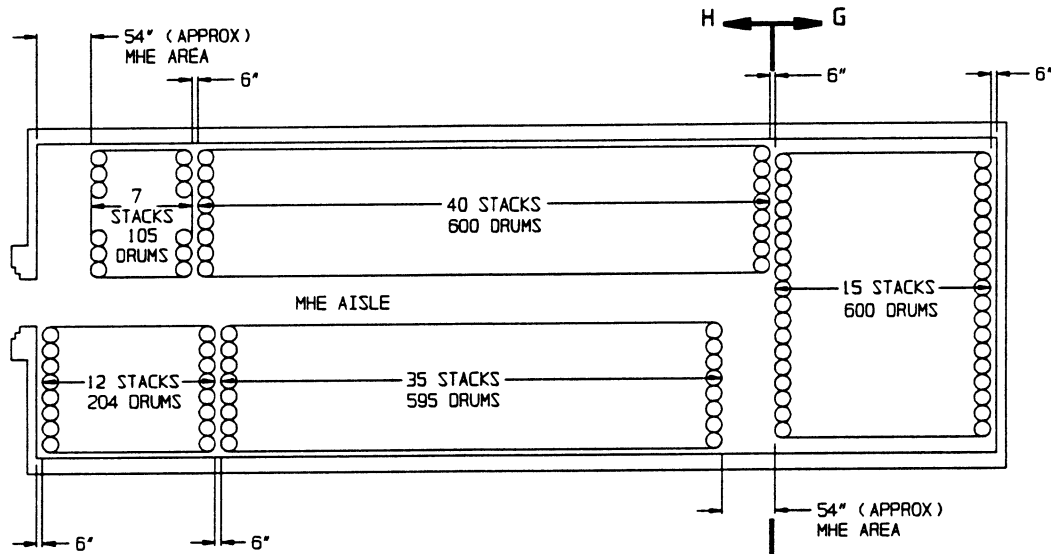


PLAN VIEW
(81'-0" IGLOO SHOWN)

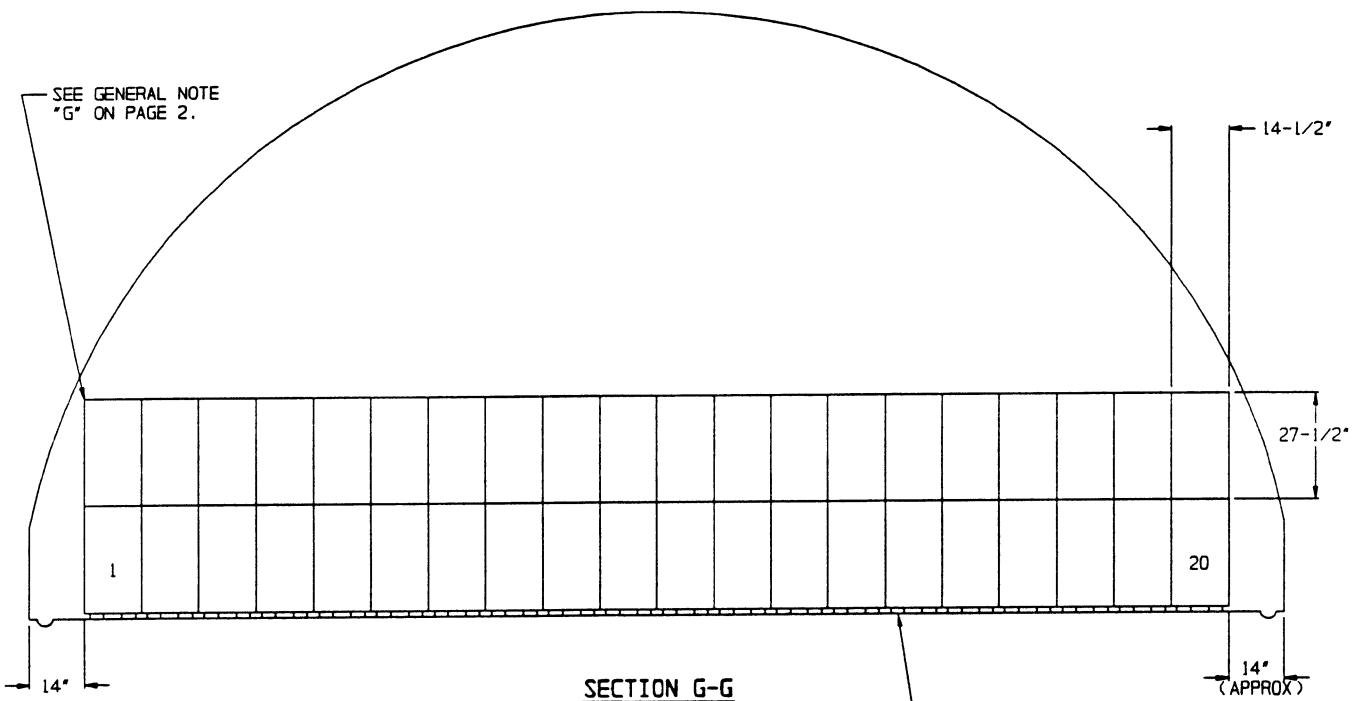


SECTION F-F

FOR "GENERAL NOTES" AND "MATERIAL SPECIFICATIONS", SEE PAGE 2.



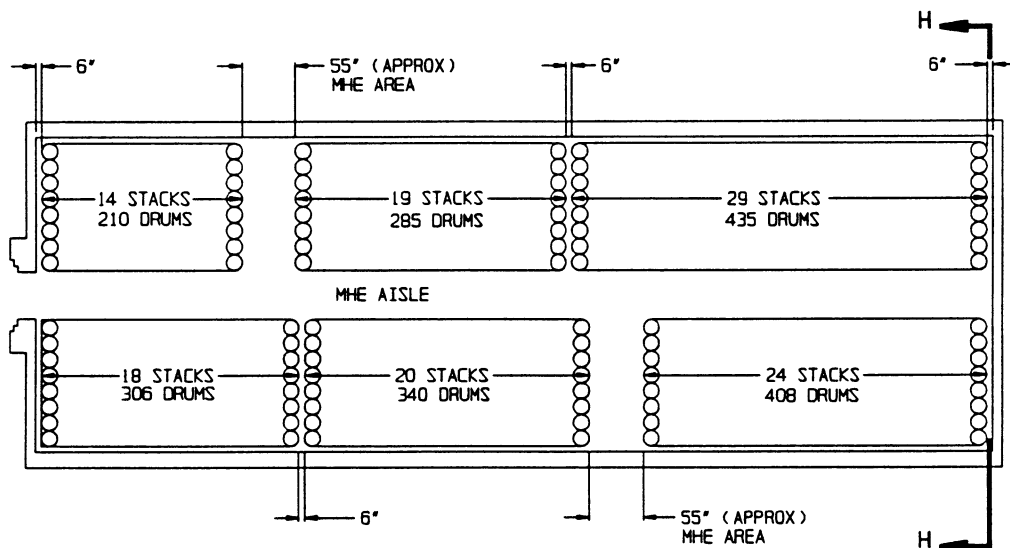
PLAN VIEW
(81'-0" IGL00 SHOWN)



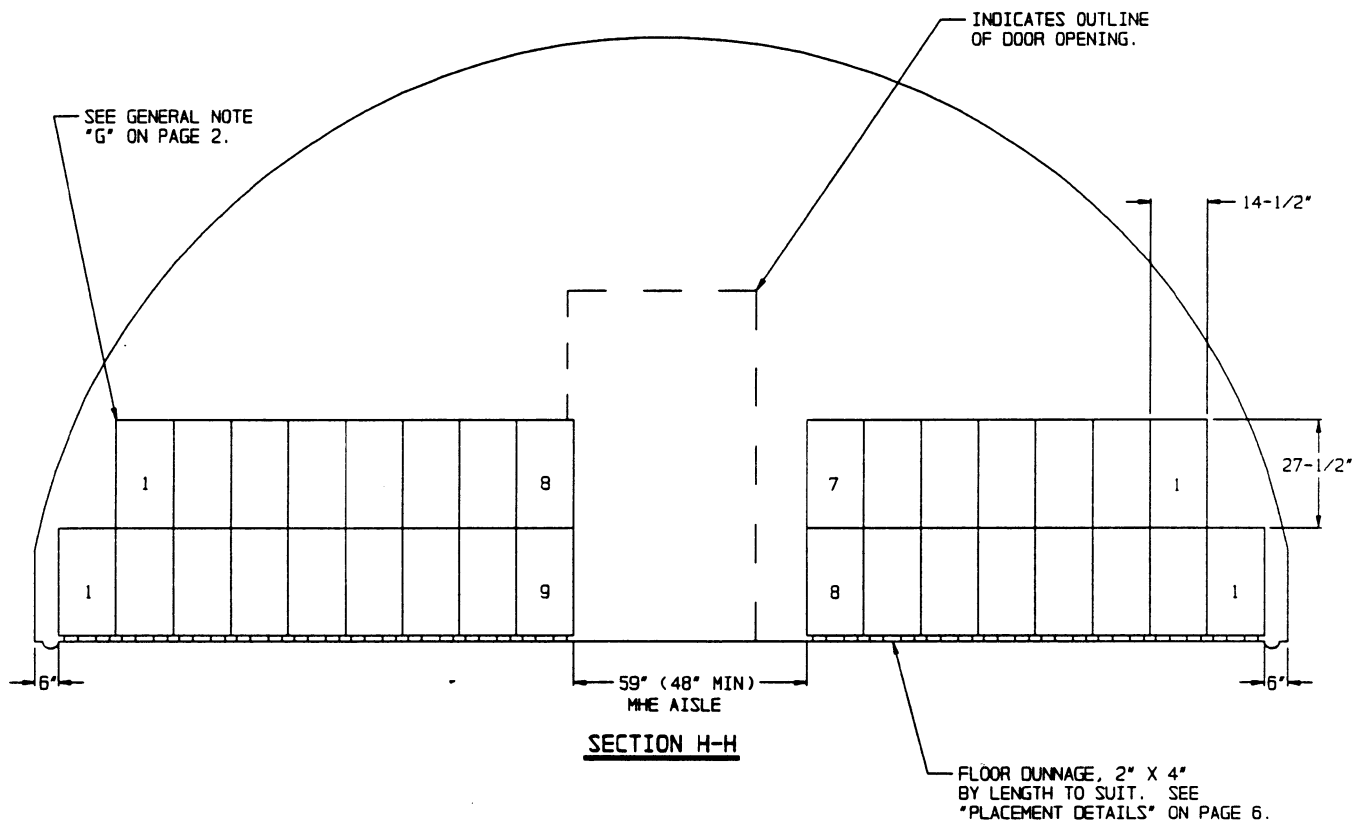
SECTION G-G
40 DRUMS/STACK

FLOOR DUNNAGE, 2" X 4" BY
LENGTH TO SUIT. SEE
"PLACEMENT DETAILS" ON PAGE 6.

**FOR "GENERAL NOTES" AND "MATERIAL
SPECIFICATIONS", SEE PAGE 2.**

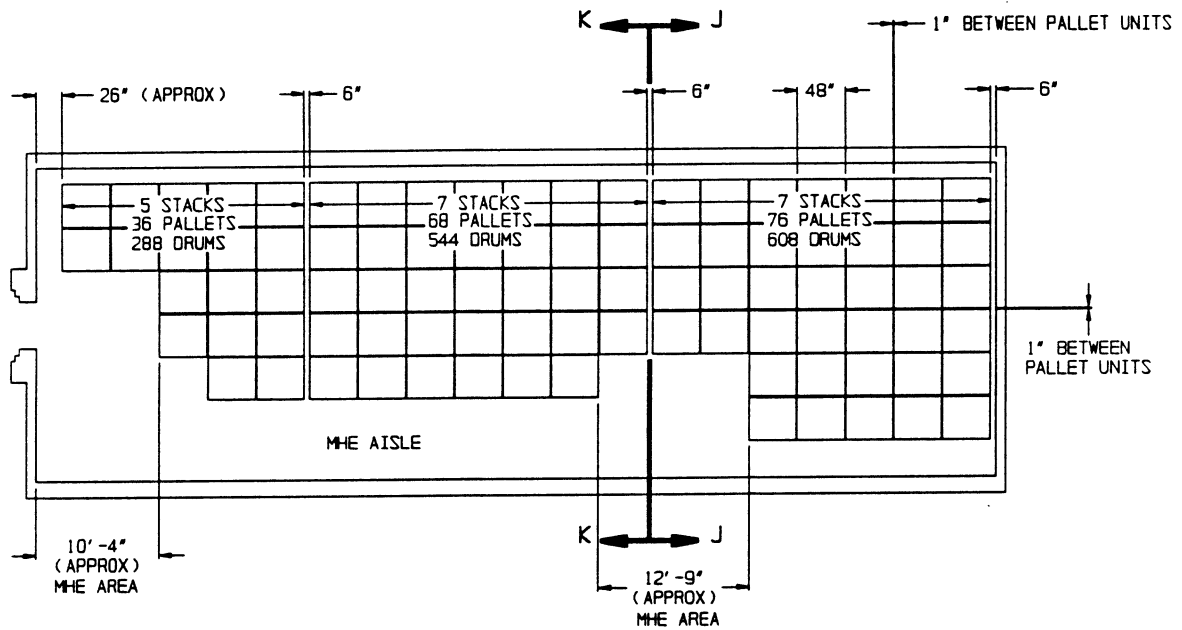


PLAN VIEW
(81'-0" IGL00 SHOWN)

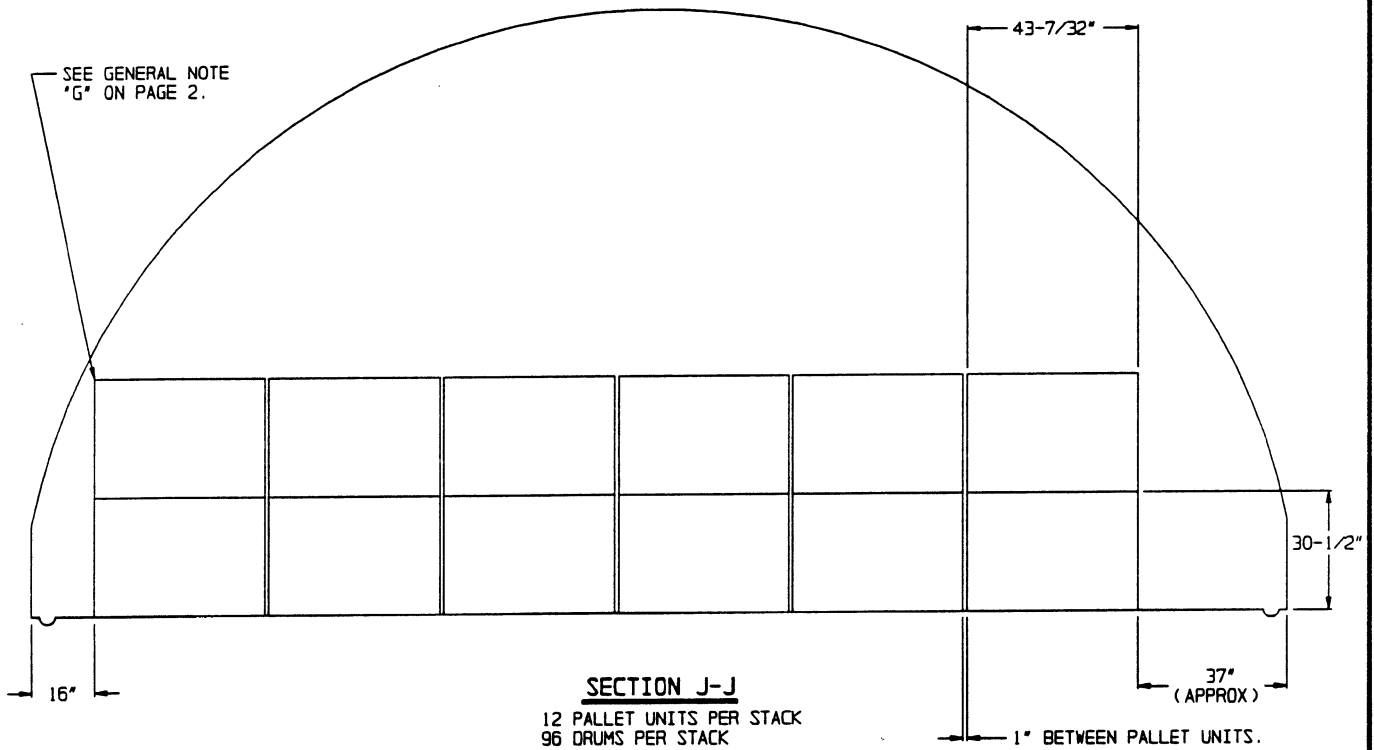


SECTION H-H

FOR "GENERAL NOTES" AND "MATERIAL SPECIFICATIONS", SEE PAGE 2.



PLAN VIEW
(81'-0" IGLOO SHOWN)

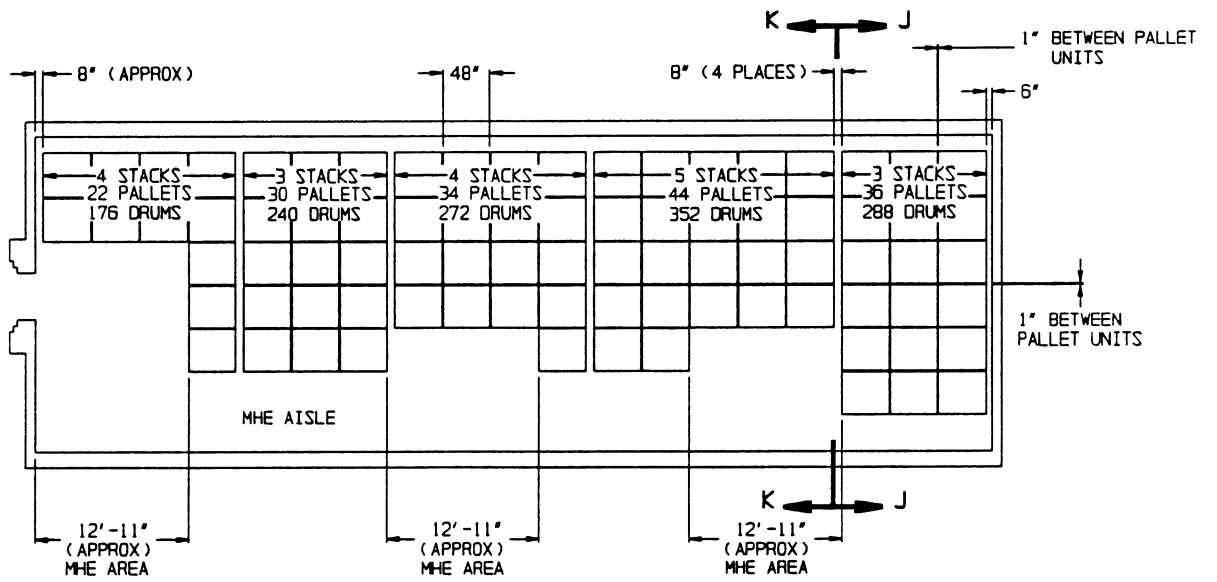


SECTION J-J
12 PALLET UNITS PER STACK
96 DRUMS PER STACK

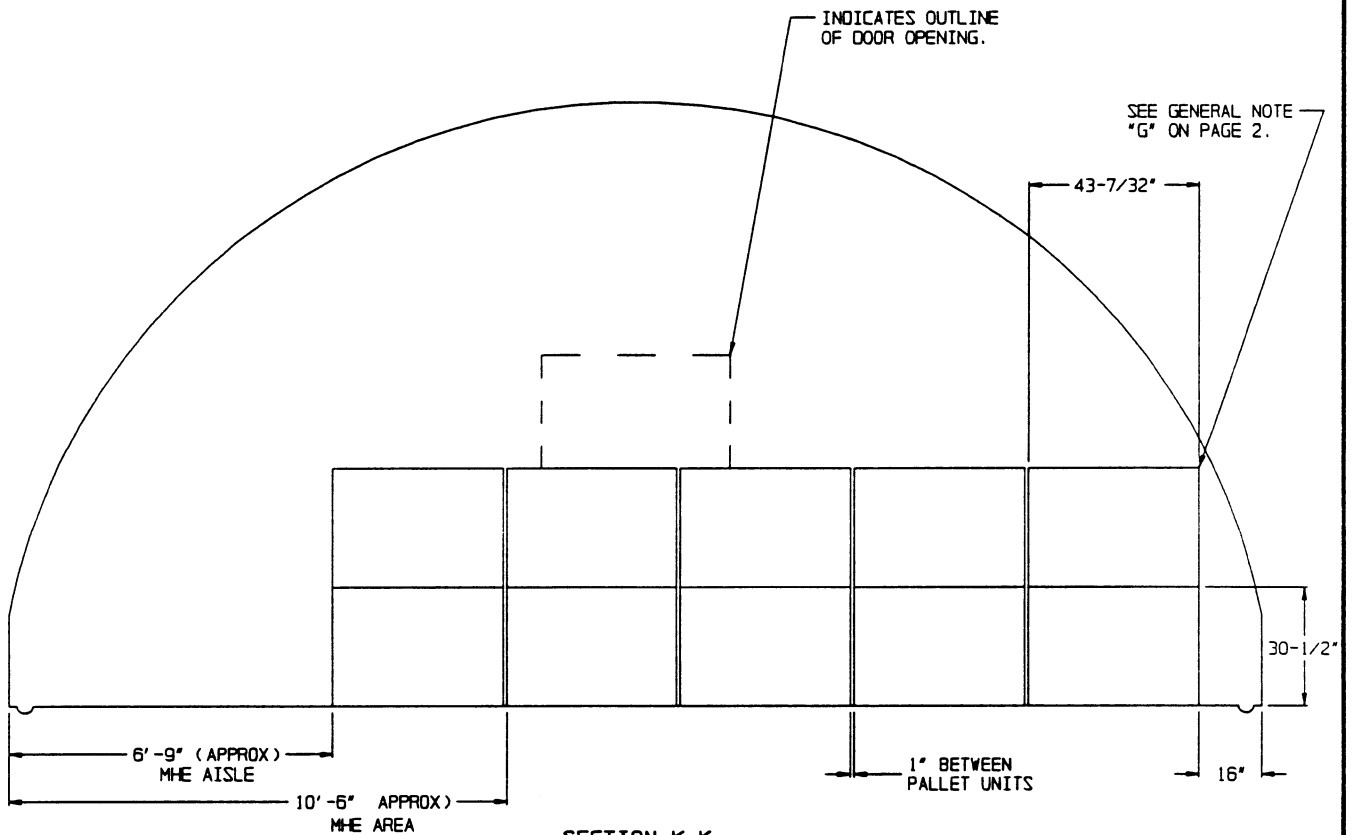
NOTE: SEE PAGE 18 FOR SUGGESTED PALLET LOADING AND SPECIAL NOTES.

FOR "GENERAL NOTES" SEE PAGE 2.

TYPICAL STORAGE PROCEDURES FOR LARGE LOTS OF
NITROGUANIDINE IN 15-13/16" DIA TYPE "C" DRUMS PALLETIZED



PLAN VIEW
(81'-0" IGLUO SHOWN)

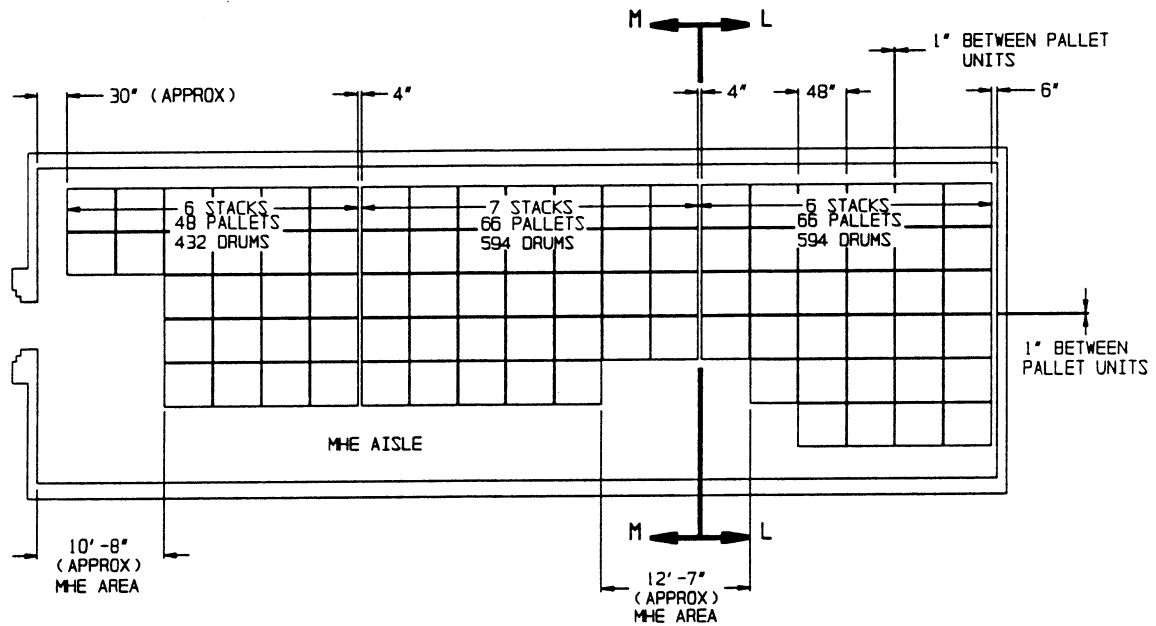


SECTION K-K

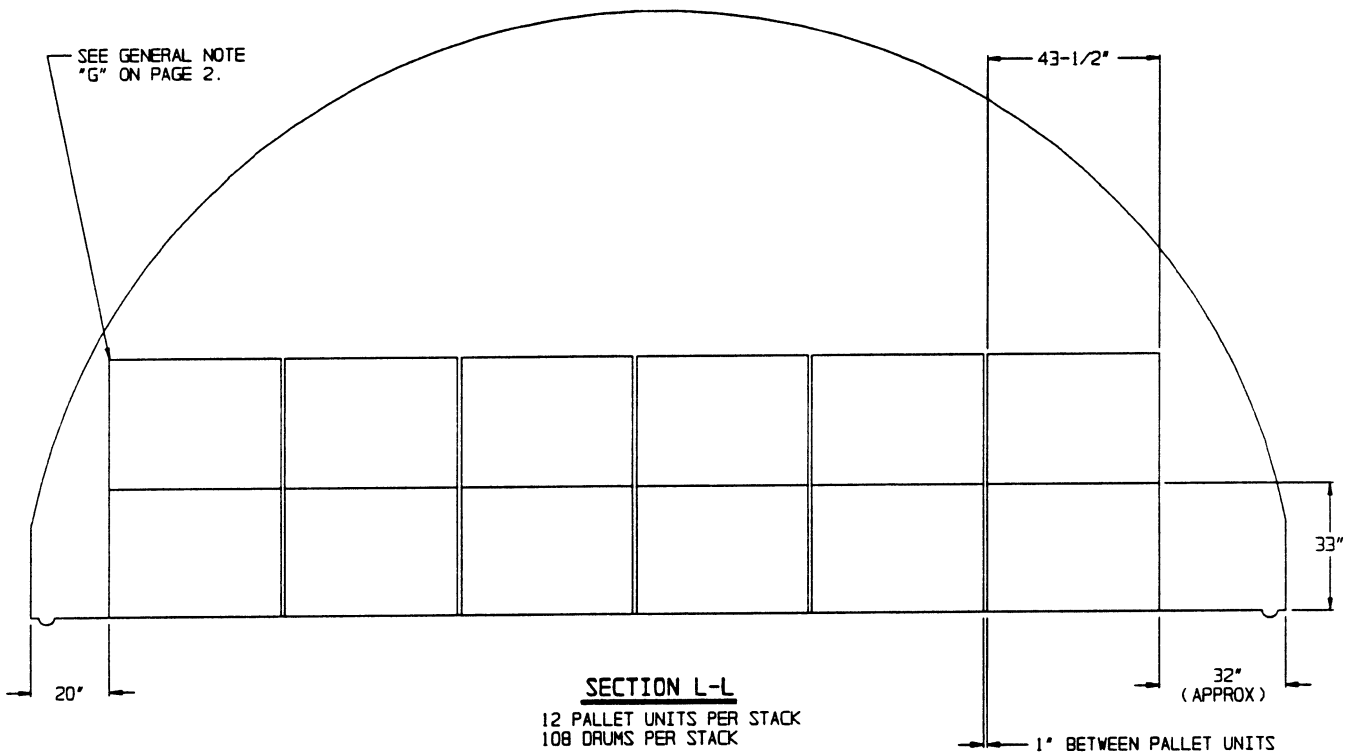
NOTE: SEE PAGE 18 FOR SUGGESTED PALLET LOADING AND SPECIAL NOTES.

FOR "GENERAL NOTES" SEE PAGE 2.

TYPICAL STORAGE PROCEDURES FOR SMALL LOTS OF
NITROGUANIDINE IN 15-13/16" DIA TYPE "C" DRUMS PALLETIZED



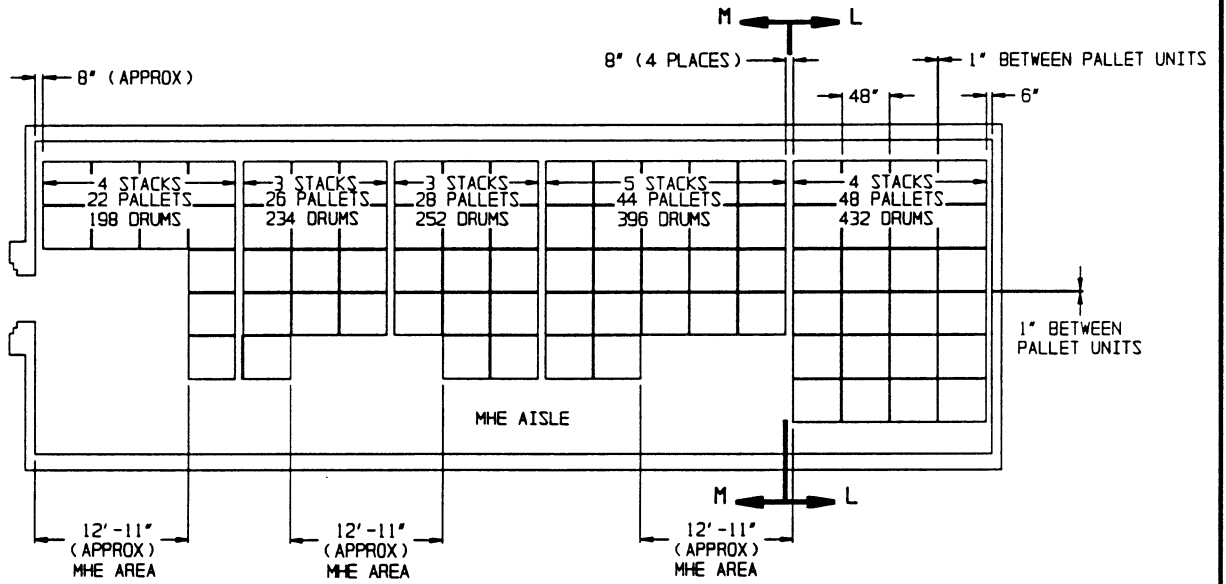
PLAN VIEW
(81'-0" IGL00 SHOWN)



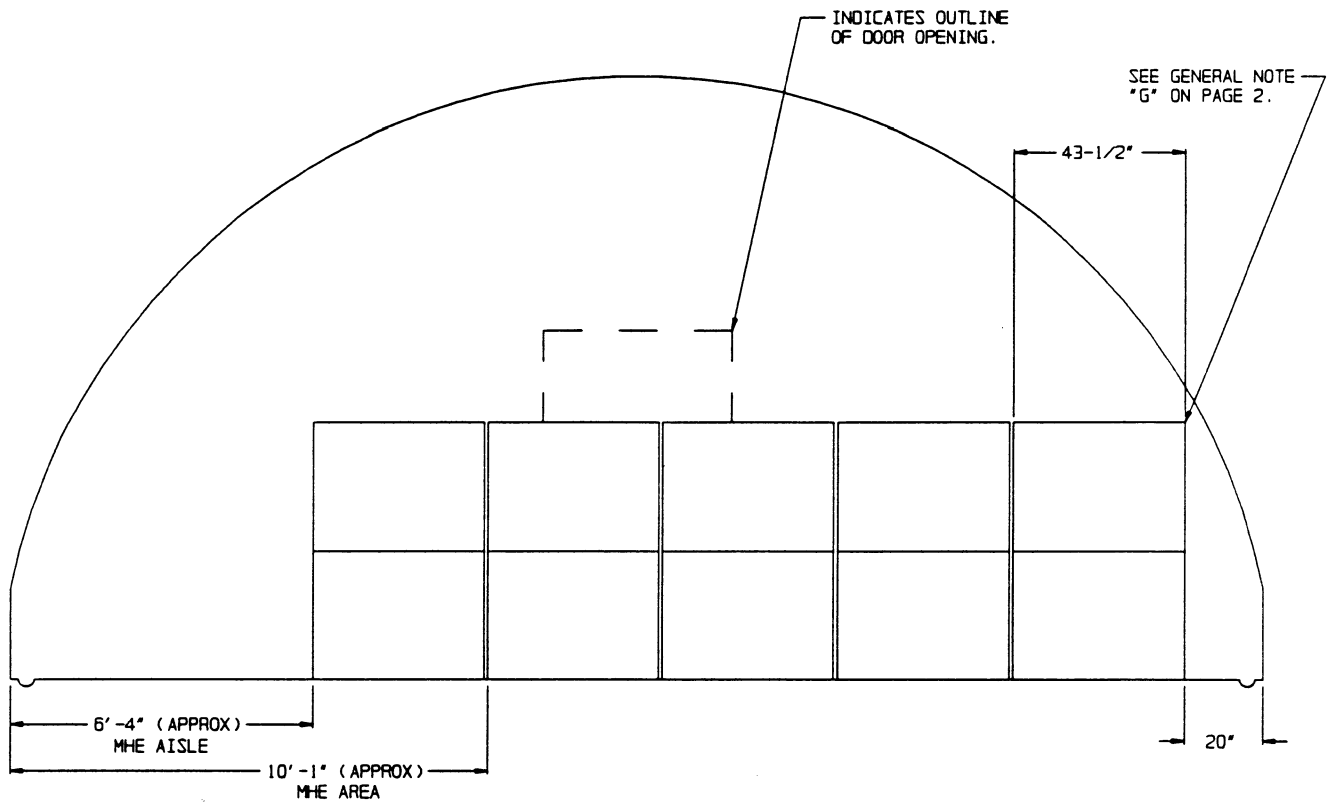
SECTION L-L
12 PALLET UNITS PER STACK
108 DRUMS PER STACK

NOTE: SEE PAGE 18 FOR SUGGESTED PALLET LOADING AND SPECIAL NOTES.

FOR "GENERAL NOTES" SEE PAGE 2.



PLAN VIEW
(81'-0" IGLOO SHOWN)

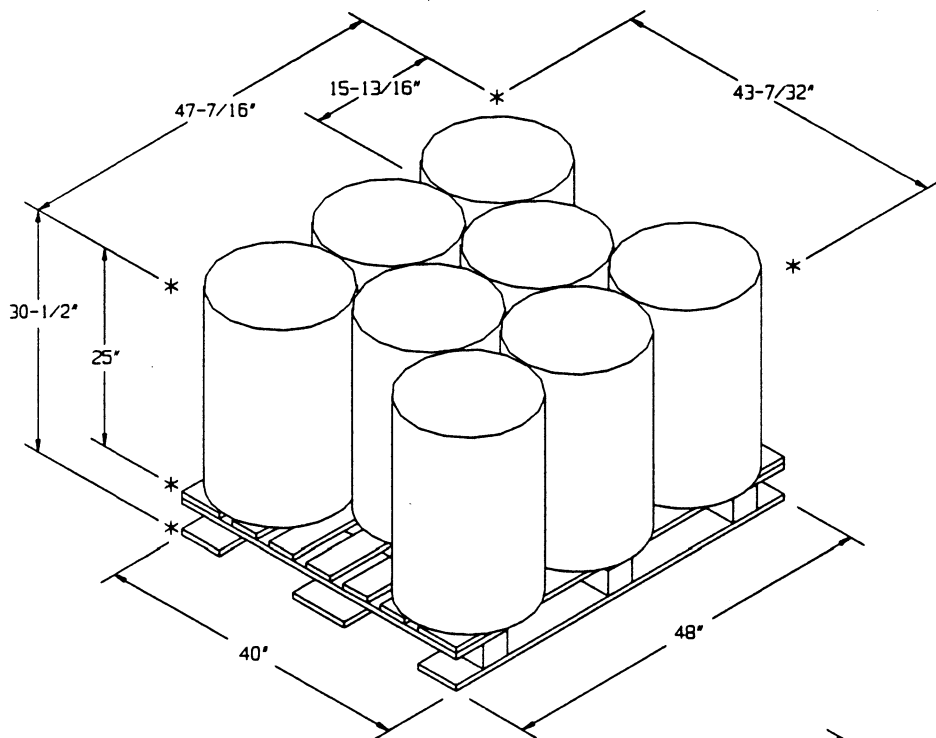


SECTION M-M

NOTE: SEE PAGE 18 FOR SUGGESTED PALLET LOADING AND SPECIAL NOTES.

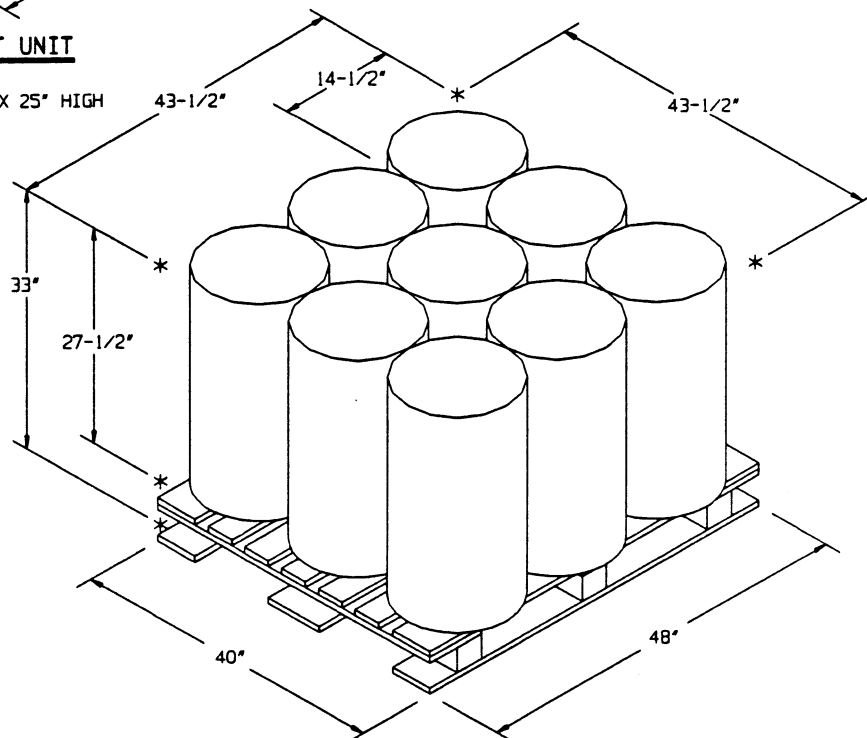
FOR "GENERAL NOTES" SEE PAGE 2.

TYPICAL STORAGE PROCEDURES FOR SMALL LOTS OF
NITROGUANIDINE IN 14-1/2" DIA TYPE "C" DRUMS PALLETIZED



TYPICAL PALLET UNIT

8 DRUMS
 DRUM: 15-13/16" DIA X 25" HIGH

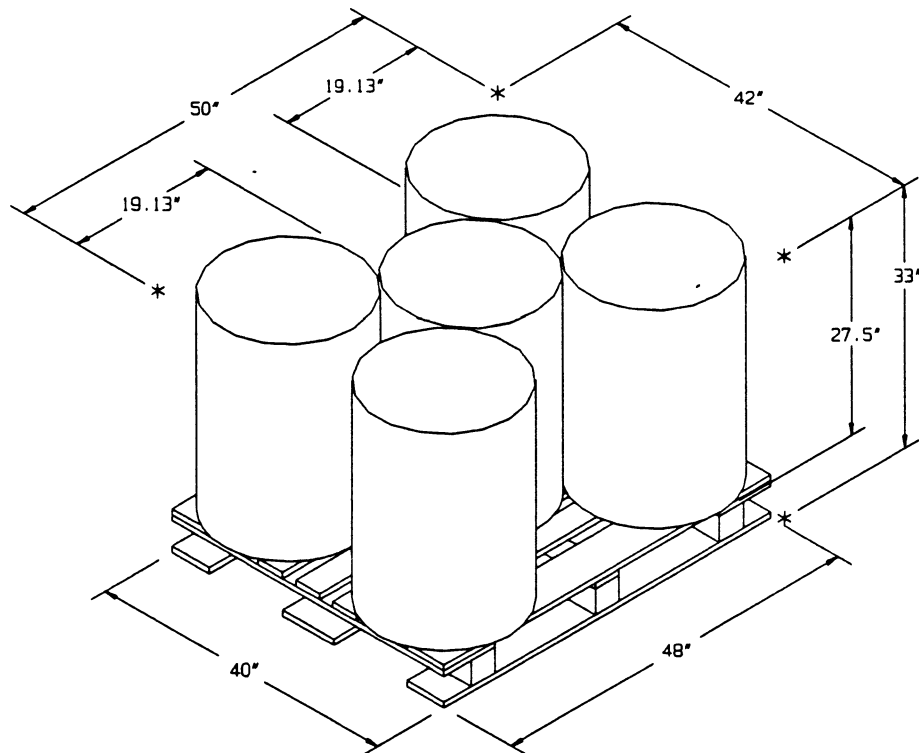


TYPICAL PALLET UNIT

9 DRUMS
 DRUM: 14-1/2" DIA X 27-1/2" HIGH

SPECIAL NOTES:

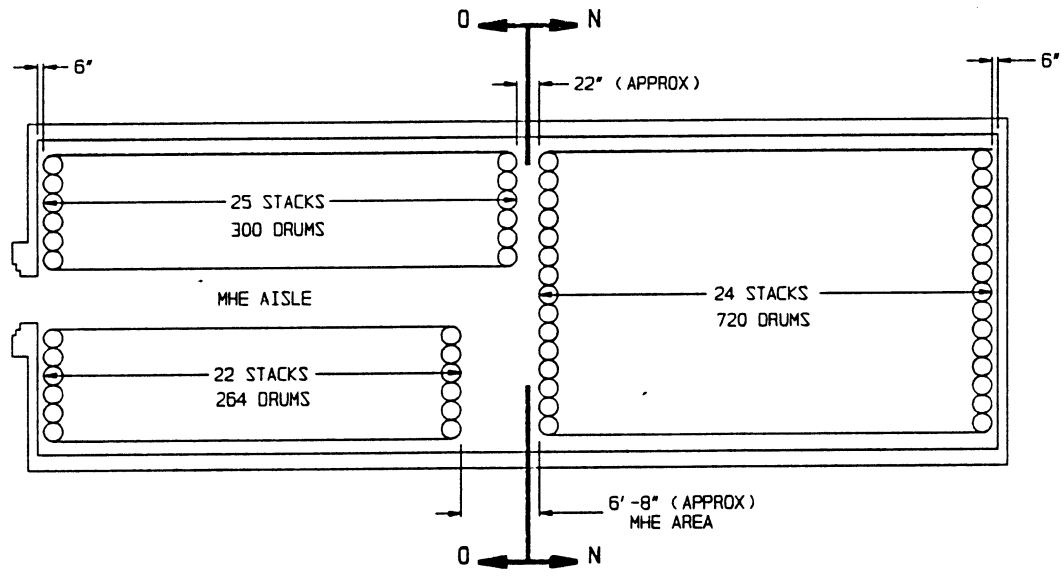
1. STORAGE AS SHOWN IS FOR FIBERBOARD DRUMS OF VARIOUS SIZES PLACED ON 40" X 48" PALLETS AND CONTAINING NITROGUANIDINE.
2. THE DRUM SIZES SHOWN ARE TYPICAL; ANY SIZE DRUM MAY BE PLACED ON A PALLET FOR STORAGE PURPOSES. ANY SIZE PALLET MAY BE USED, HOWEVER A SIZE SHOULD BE SELECTED WHICH WILL BE NEARLY FILLED WITH DRUMS IN ORDER TO PROVIDE GOOD STACKABILITY. ALSO, A PALLET SIZE SHOULD BE SELECTED THAT WILL PROVIDE FOR FULL OR ALMOST FULL BEARING OF THE DRUMS ON A PALLET. OVERHANG OF DRUMS ON A PALLET IS LIMITED TO NOT MORE THAN TWO INCHES (2").
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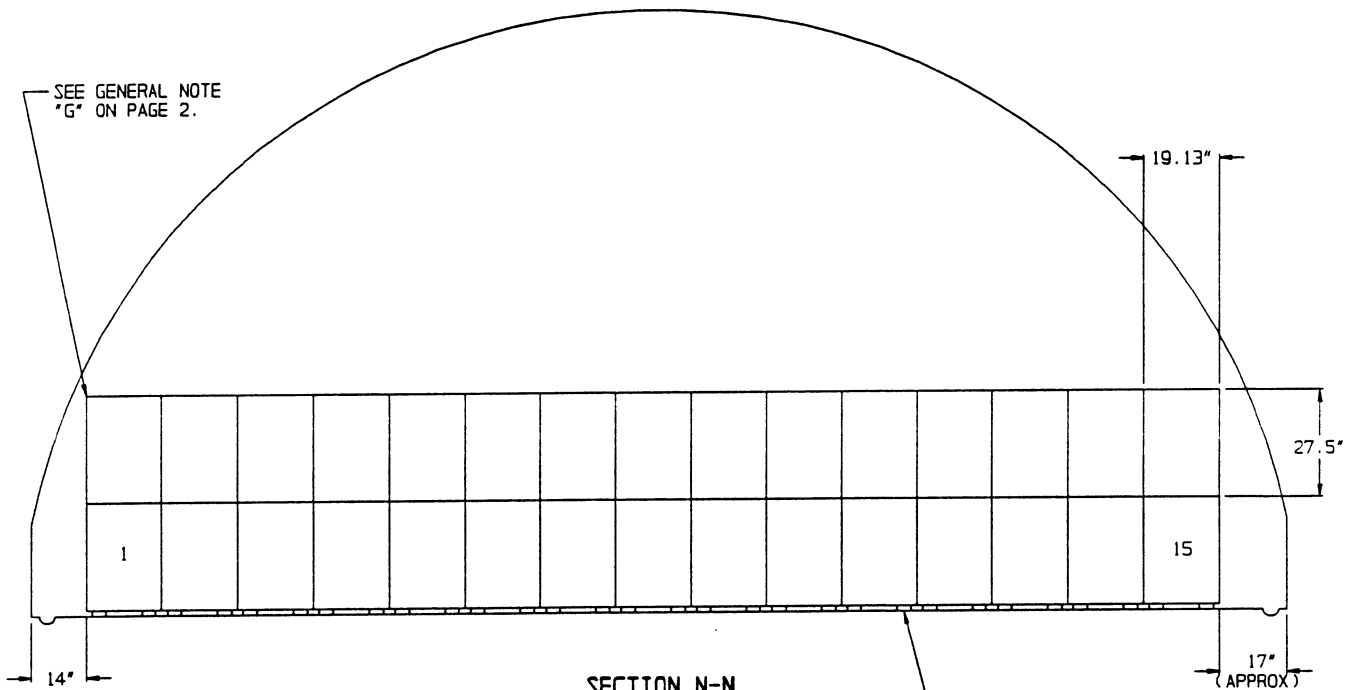
TYPICAL PALLET UNIT
 5 DRUMS
 DRUM: 19.13" DIA X 27.5" HIGH

SPECIAL NOTES:

1. STORAGE AS SHOWN IS FOR FIBERBOARD DRUMS PLACED ON 40" X 48" PALLETS AND CONTAINING VARIOUS BULK EXPLOSIVES.
2. THE DRUM SIZE SHOWN IS TYPICAL; ANY SIZE DRUM MAY BE PLACED ON A PALLET FOR STORAGE PURPOSES. ANY SIZE PALLET MAY BE USED, HOWEVER A SIZE SHOULD BE SELECTED WHICH WILL BE NEARLY FILLED WITH DRUMS IN ORDER TO PROVIDE GOOD STACKABILITY. ALSO, A PALLET SIZE SHOULD BE SELECTED THAT WILL PROVIDE FOR FULL OR ALMOST FULL BEARING OF THE DRUMS ON A PALLET. OVERHANG OF DRUMS ON A PALLET IS LIMITED TO NOT MORE THAN TWO INCHES (2").
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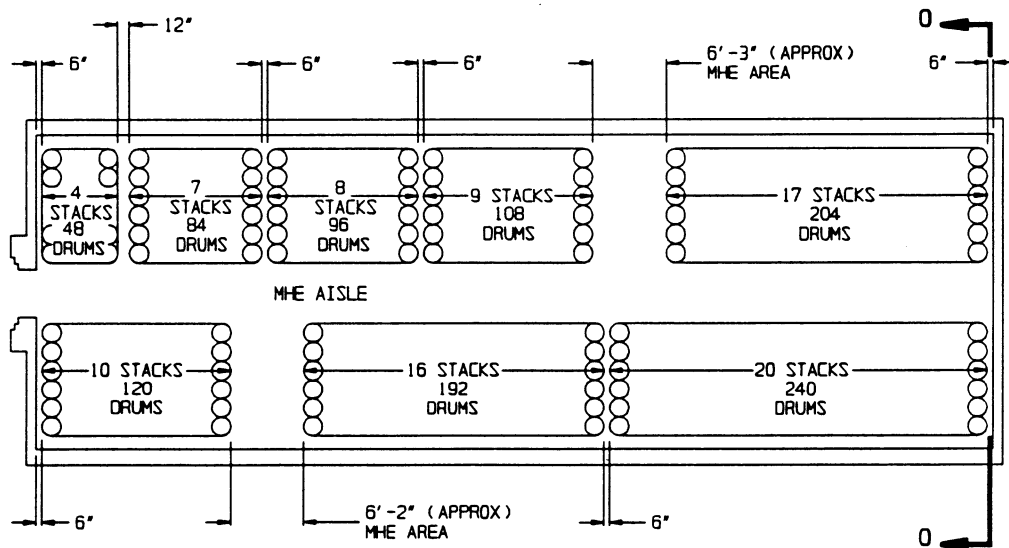
PLAN VIEW
(81'-0" IGLOO SHOWN)



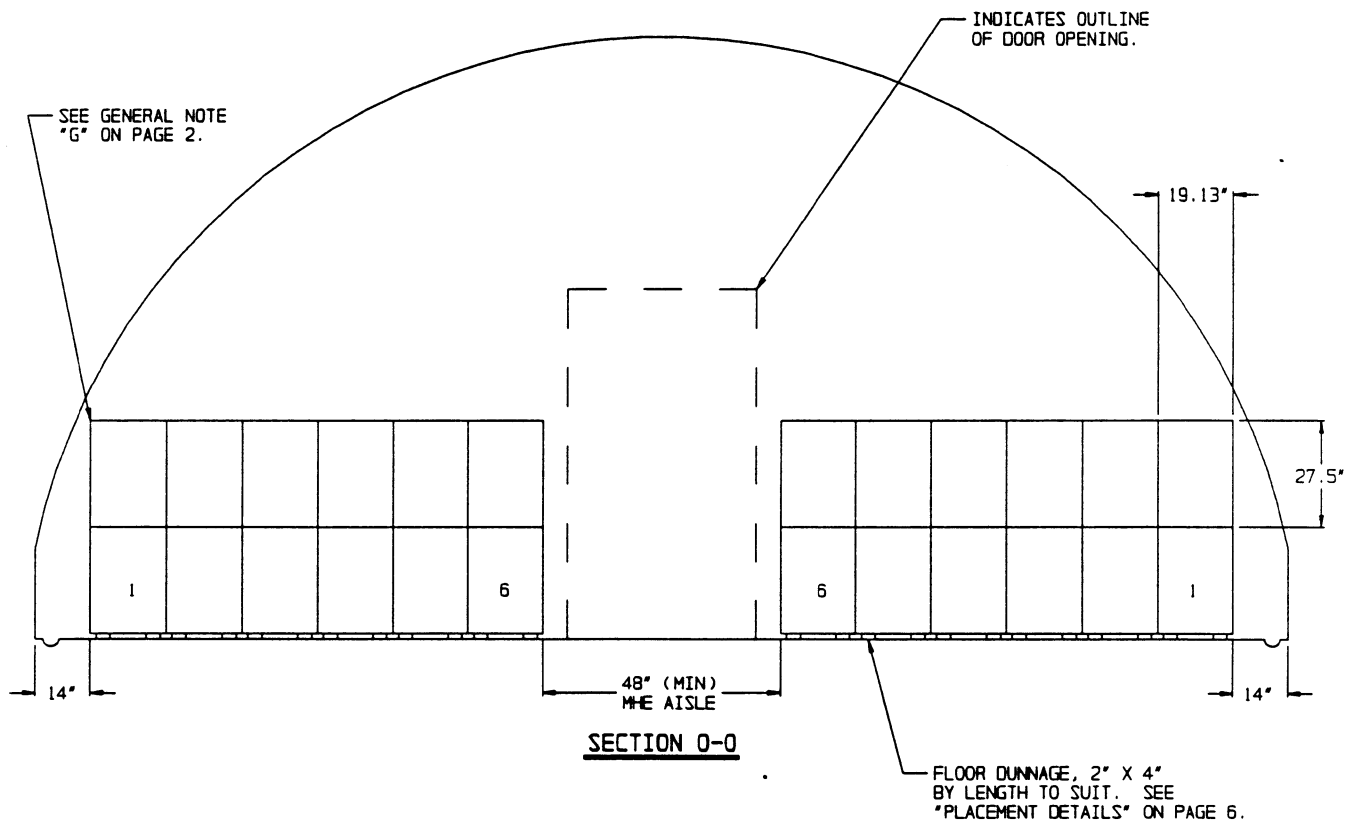
SECTION N-N
(30 DRUMS/STACK)

FLOOR DUNNAGE, 2" X 4"
BY LENGTH TO SUIT. SEE
"PLACEMENT DETAILS" ON PAGE 6.

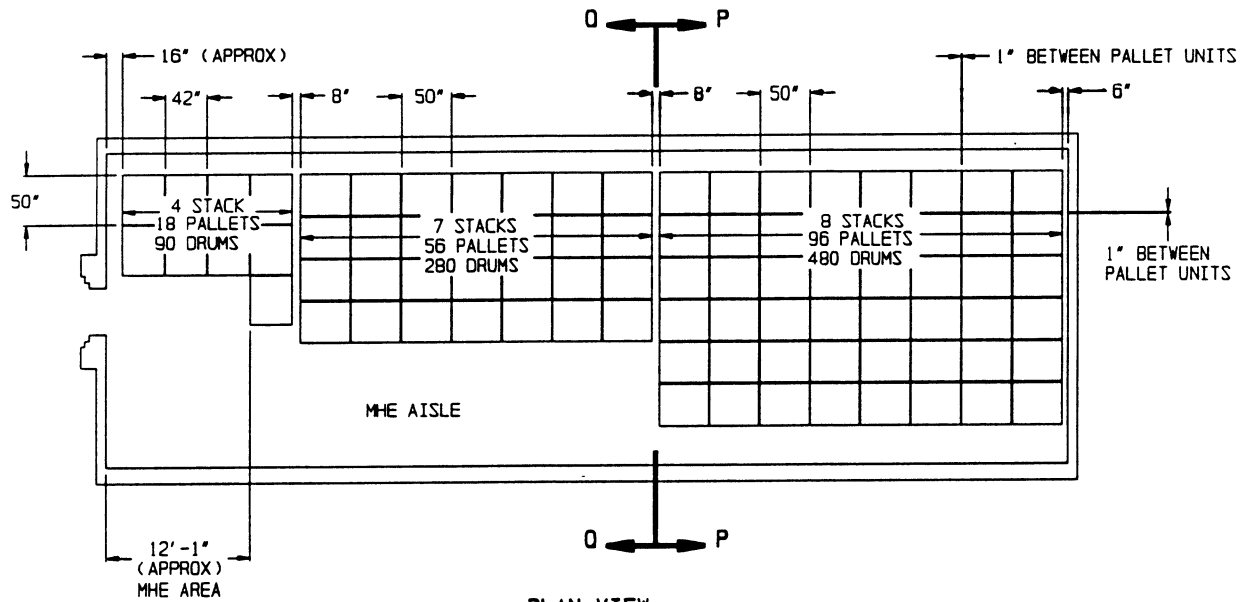
FOR "GENERAL NOTES" AND "MATERIAL SPECIFICATIONS", SEE PAGE 2.



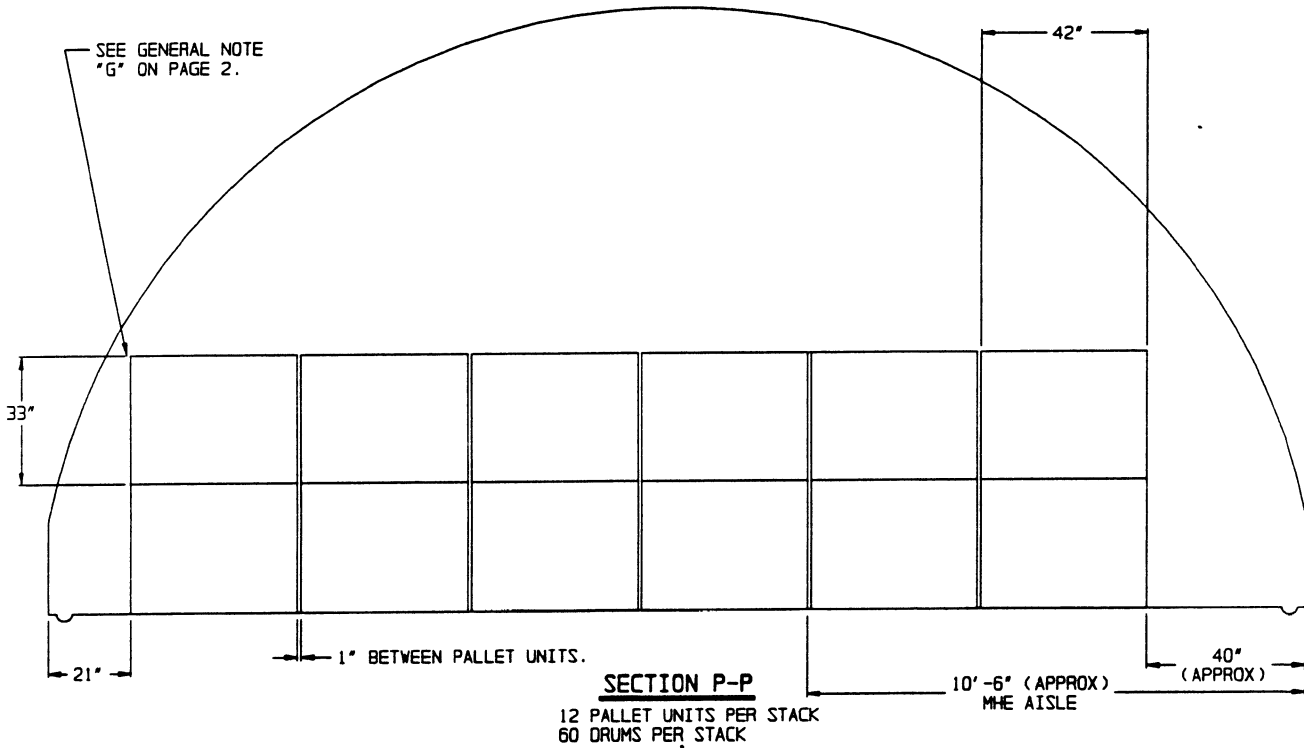
PLAN VIEW
(81'-0" IGLOO SHOWN)



FOR "GENERAL NOTES" AND "MATERIAL SPECIFICATIONS", SEE PAGE 2.



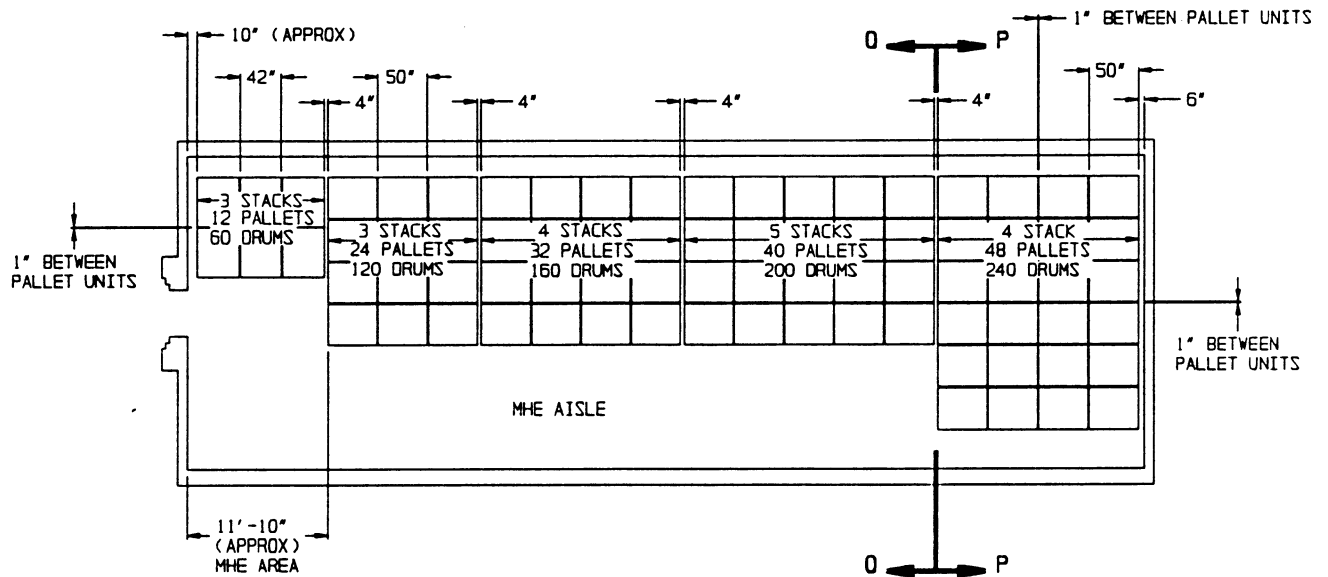
PLAN VIEW
(81'-0" IGLOO SHOWN)



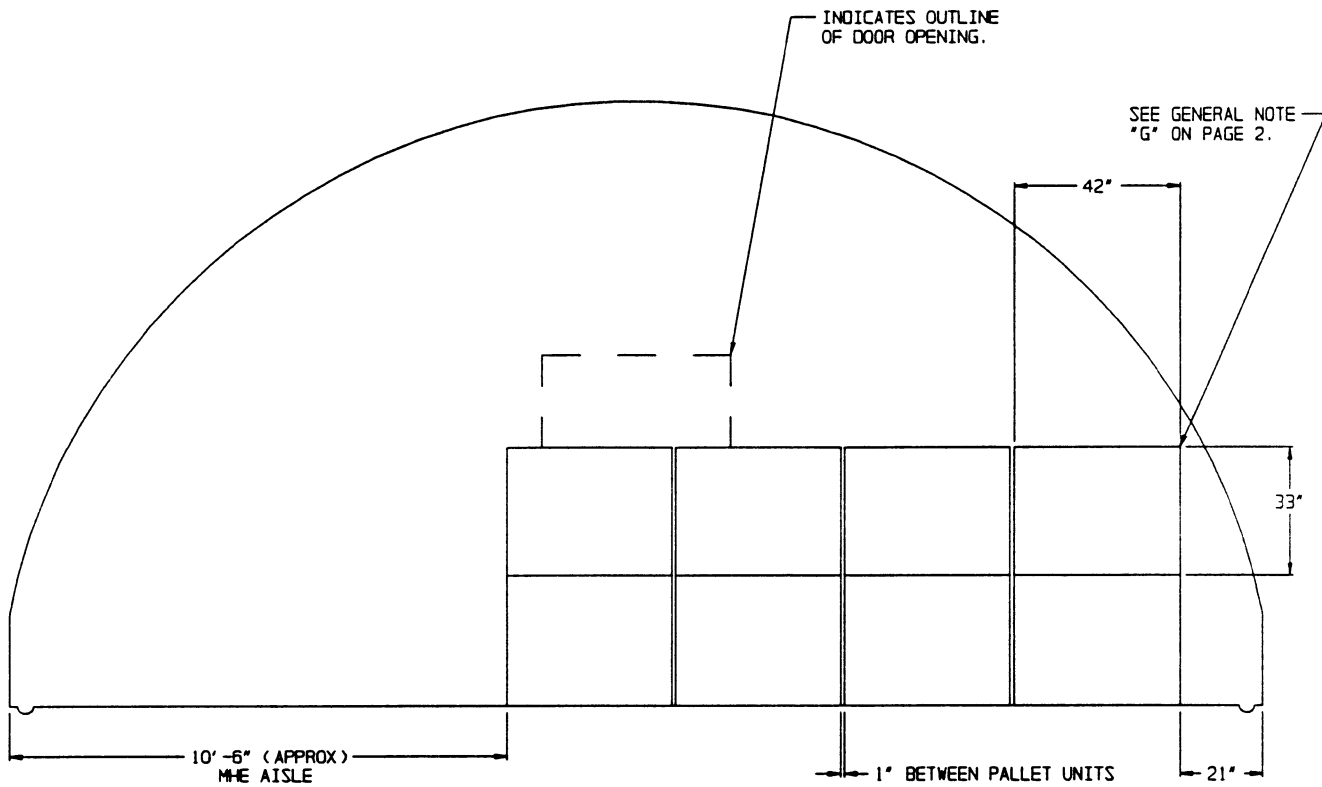
SECTION P-P
12 PALLET UNITS PER STACK
60 DRUMS PER STACK

NOTE: SEE PAGE 19 FOR SUGGESTED PALLET LOADING AND SPECIAL NOTES.

FOR "GENERAL NOTES" SEE PAGE 2.



PLAN VIEW
(81'-0" IGLOO SHOWN)



SECTION 0-0

NOTE: SEE PAGE 19 FOR SUGGESTED PALLET LOADING AND SPECIAL NOTES.

FOR "GENERAL NOTES" SEE PAGE 2.

