STORAGE PROCEDURES IN STRADLEY TYPE MAGAZINES FOR PALLETIZED CONVENTIONAL AMMUNITION AT OCONUS INSTALLATIONS TO PROVIDE INCREASED STORAGE DENSITY

INDEX ITEM PAGE (S) GENERAL NOTES, AND MATERIAL SPECIFICATIONS -----STANDARD UNIT DETAILS -----BUNDLING AND DUNNAGE DETAILS (SLPS) -----RECONFIGURATION DETAILS FOR PALLET UNITS OF WOOD OR WIREBOUND BOXED AMMUNITION -----STORAGE PROCEDURES FOR: 155MM SLP, &/SMALL PALLET ------ 8, 9 155MM SLP. 8/LARGE PALLET ------ 12,13 8" SLP, 6 TALL PROJECTILES/SMALL PALLET ------ 16, 17 PROPELLING CHARGE IN M13 SERIES CONTAINER, PALLETIZED ------ 18, 19 PROPELLING CHARGE IN PA37 SERIES CONTAINER, PALLETIZED ------------------------20,21 HAND GRENADE, PALLETIZED -------28, 29 MINE, ANTITANK, PALLETIZED -----

NOTICE

THIS DRAWING IS FOR USE ONLY AT OCONUS INSTALLATIONS WHERE STORAGE SPACE IS LIMITED AND ADDITIONAL SPACE REQUIREMENTS HAVE BEEN OFFICIALLY IDENTIFIED AND DOCUMENTED IN SUBMITTED MILITARY CONSTRUCTION, ARMY (MCA) PROJECTS. PERMISSION TO USE THE PROCEDURES SHOWN WITHIN THIS DRAWING MUST BE OBTAINED FROM THE U.S. ARMY DEFENSE AMMUNITION CENTER AND SCHOOL (USADACS), SMCAC-DEO, SAVANNA, IL 61074-9639, THRU AN OFFICIALLY DOCUMENTED REQUEST FROM THE APPROPRIATE OCONUS THEATER COMMANDER.

REVISIONS			DRAFTSMAN PJE	dh Mw	PWRF	
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		U.S. ARMY AMC DRAWING				
		NOVEMBER 1986				
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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 PROCEDURES DEPICTED WITHIN THIS DOCUMENT ARE TYPICAL AND PROVIDE FOR INCREASED STORAGE CAPABILITIES FOR PALLETIZED CONVENTIONAL AMMUNITION AT OCONUS INSTALLATIONS HAVING A LIMITED AND INADEQUATE AMOUNT OF APPROVED STORAGE SPACE FOR SUCH COMMODITIES. THE DRAWING TYPICALLY SHOWS PROCEDURES FOR STORAGE OF SEVERAL SPECIFIC ITEMS OF AMMUNITION IN STRADLEY MAGAZINES. THE PROCEDURES MAY BE USED FOR STORAGE IN OTHER APPROVED MAGAZINES AND FOR OTHER PALLETIZED UNITS OF CONVENTIONAL AMMUNITION. MINOR ADJUSTMENTS MAY BE MADE, HOWEVER, THE BASIC PRINCIPLES, AS DEPICTED HEREIN, WILL BE FOLLOWED. SEE NOTE "C" BELOW AND NOTE "R" AT RIGHT.
- C. <u>CAUTION</u>: WHEN USING THE TYPICAL PROCEDURES DEPICTED HEREIN, CARE MUST BE EXERCISED TO ASSURE THAT THE ALLOWABLE "EXPLOSIVE LIMIT" ES-TABLISHED FOR A MAGAZINE IS NOT EXCEEDED.
- D. TWO (2) OR THREE (3) PALLET UNITS OF SEPARATE LOADING PROJECTILES MAY BE HANDLED BY A FORKLIFT TRUCK AS ONE LOAD, IF THE LENGTH OF THE FORK TINES IS ADEQUATE TO PROVIDE FULL-LENGTH, OR NEARLY FULL-LENGTH, BEARING UNDER THE LOAD BEING HANDLED. SEE PAGE 6 FOR BUNDLING DETAILS. ALSO, PALLET UNITS OF OTHER TIENS MAY BE STACKED TWO (2) HIGH AND HANDLED AS ONE LIFT. HOWEVER, LIFTING MORE THAN ONE PALLET UNIT OF ANY ITEM OR ANY INCREASED HEIGHT UNIT AS TYPICALLY SHOWN ON PAGES 6 AND 7, WILL ONLY BE PERMITTED IF THE CAPACITY OF THE MHE IS ADEQUATE AND HANDLING CAN BE ACCOMPLISHED IN A SAFE MANNER.
- E. A DUNNAGE ASSEMBLY CONSISTING OF 1" X 4" AND 2" X 4" MATERIAL IS REQUIRED FOR THE STORAGE PROCEDURES DEPICTED ON PAGES 10 THRU 17 FOR SEPARATE LOADING PROJECTILES. THE MATERIAL SIZE MAY BE ADJUSTED AS NECESSARY, DEPENDING ON THE THICKNESS OF THE FORKLIFT TINES, TO ALLOW FOR SAFE PLACEMENT AND REMOVAL OF UPPER LAYER PALLET UNITS.
- F. AISLE DIMENSIONS SHOWN FOR STORAGE PROCEDURES IN MAGAZINES MAY BE ADJUSTED TO SUIT LOCAL CONDITIONS, VARIATIONS IN PALLET UNIT DIMEN-SIONS, AND/OR AVAILABLE MATERIALS HANDLING EQUIPMENT. SEE NOTE "H" BELOW
- G. THE MAXIMUM FLOOR LOAD FOR A MAGAZINE AS PRESCRIBED BY LOCAL STAN-DARDS, WILL NOT BE EXCEEDED.
- H. AN 18" MINIMUM WIDTH ACCESS AISLE MUST BE PROVIDED AT TWO (2) ADJACENT SIDES OF EACH LOT FOR INVENTORY PURPOSES. ADDITIONALLY, ONE PALLET UNIT OF EACH LOT OF AN ITEM MUST BE PLACED IN AN ACCESSIBLE LOCATION IN THE MAGAZINE, PREFERABLY THE FRONTAL AREA, TO PERMIT USE OF MHE, WHEN NECESSARY, TO SATISFY SURVEILLANCE SAMPLING REQUIREMENTS. SURVEILLANCE SAMPLING UNITS MUST BE SUITABLY IDENTIFIED AS SUCH AND MAY BE STACKED ON EACH OTHER WHEN NECESSARY. COORDINATION BETWEEN QUALITY ASSURANCE AND OPERATING PERSONNEL SHOULD BE EFFECTED TO ASSURE SURVEILLANCE SAMPLES ARE POSITIONED IN A READILY ACCESSIBLE LOCATION.
- J. PORTIONS OF THE MAGAZINES, SUCH AS SIDEWALLS, END WALLS, AND ROOFS, HAVE NOT BEEN SHOWN IN THE STORAGE VIEWS FOR CLARITY PURPOSES.
- K. DUNNAGE LUMBER SPECIFIED 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.
- L. STORED PALLET UNITS MUST NOT CONTACT THE WALLS OF A MAGAZINE. TO PRO-VIDE FOR THIS MANDATORY CLEARANCE REQUIREMENT, UNITS MAY BE ELIMINATED FROM THE DEPICTED STORAGE PATTERN AS NECESSARY.
- M. RECONFIGURED PALLET UNITS OF BOXED AMMUNITION WHICH ARE FULLY STRAPPED, AS SHOWN ON PAGE 7, METHODS NO. 1 AND NO. 3, MUST NOT EXCEED 64" IN HEIGHT TO FACILITATE MOVEMENT WITHIN THE THEATER WITHOUT VIOLATING RESTRICTIONS ESTABLISHED BY HOST NATIONS. MOVEMENT OF RECONFIGURED PALLET UNITS WILL ONLY BE ACCOMPLISHED AT THE RETAIL LEVEL; I.E., RECONFIGURED PALLET UNITS WILL NOT BE MOVED WITHIN THEATER UNLESS DIRECTLY ISSUED FROM A STORAGE LOCATION TO A TACTICAL USING UNIT. SEE NOTE "S" AT RIGHT.
- N. SOME STANDARD PALLET UNITS OF CYLINDRICAL METAL CONTAINERS, SUCH AS PROPELLING CHARGES, COMPLETE ROUNDS, ETC, MAY BE RECONFIGURED BY ADDING ONE OR MORE LAYERS, HOWEVER, THE HEIGHT OF THE RECONFIGURED UNIT MUST NOT BE MORE THAN 54", SINCE THE INSTABILITY OF THIS TYPE UNIT WILL BE INCREASED WHEN EXCEEDING A 54" HEIGHT. ALSO, THE DUNNAGE METHODS, MATERIAL AND ASSEMBLIES OF THE RECONFIGURED UNIT MUST COMPARE WITH THAT USED IN THE STANDARD PALLET UNIT. END AND SIDE BATTEN PIECES OR ASSEMBLIES OF THE STANDARD UNIT MAY BE MODIFIED, IF POSSIBLE, OR, IF NECESSARY, REPLACED WITH NEW TO COMPENSATE FOR THE INCREASED HEIGHT OF THE RECONFIGURED UNIT. STANDARD UNITS MAY BE REDUCED IN HEIGHT BY REMOVING ONE OR MORE LAYERS SO AS TO PROVIDE A UNIT OF A HEIGHT THAT CAN BE STORED IN AN AVAILABLE SPACE AT THE TOP OF A STACK.

(CONTINUED AT RIGHT)

MATERIAL SPECIFICATIONS

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

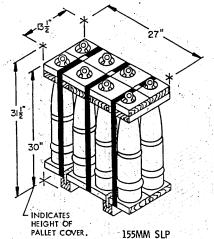
STRAPPING, STEEL --: CLASS 1, TYPE I OR IV, HEAVY DUTY, FINISH B (GRADE 2),
FED SPEC QQ-5-781.

SEAL, STRAP -----: TYPE D, STYLE I, II OR IV, CLASS H, FINISH B (GRADE 2), FED SPEC QQ-5-781.

PAGE 2

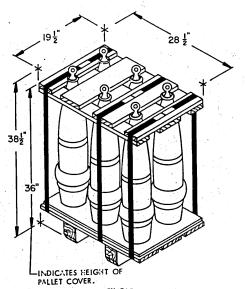
(GENERAL NOTES CONTINUED)

- O. THE RECONFIGURATION DETAIL OF PALLET UNITS OF WOODEN OR WIREBOUND BOXES AS SHOWN IN METHOD 2 ON PAGE 7 INDICATES A FULL LAYER OF LOOSE BOXES PLACED UNSTRAPPED ON TOP OF STANDARD OR MODIFIED PALLET UNITS. LOOSE BOXES IN LESS THAN A FULL LAYER CAN ALSO BE STORED TO UTILIZE AVAILABLE SPACE ON TOP OF STACKS SUCH AS SHOWN BY DOTTED LINES IN THE SECTION VIEWS ON PAGES 22 THRU 31. HOWEVER, PLACEMENT OF LOOSE BOXES IS LIMITED TO ONE LAYER FOR SAFE HANDLING. THE QUANTITY OF LOOSE BOXES STORED ON ONE STACK OF A LOT MUST ALSO BE STORED ON EVERY ADDITIONAL STACK WITHIN THE SAME LOT SO AS TO AVOID INACCURACY OF INVENTORY COUNT BY HAVING IRREGULAR STACKS.
- P. PRIOR TO OUTSHIPMENT, FOR ANY REASON OTHER THAN THAT DEFINED IN GENERAL NOTE "M", ALL ITEMS STORED AS RECONFIGURED UNITS MUST BE BROKEN DOWN AND REUNITIZED INTO STANDARD UNITS IN ACCORDANCE WITH APPLICABLE ARMY MATERIEL COMMAND 19-48 SERIES UNITIZATION DRAWINGS. IT IS IMPERATIVE THEREFORE, THAT WHEN ANY STANDARD UNITS ARE BROKEN DOWN AND RECONFIGURED TO PROVIDE FOR INCREASED STORAGE CAPABILITIES, THE RESULTING EXTRA OR UNUSED PALLETS OR SKIDDED BASES MUST BE RETAINED. PALLETS OR SKIDDED BASES REMOVED SHOULD BE IDENTIFIED AS BELONGING TO A PARTICULAR LOT OF AMMUNITION AND STORED FOR USE WHEN REQUIRED AT TIME OF OUTSHIPMENT. SEE NOTE "S" BELOW.
- Q. SOME MAGAZINES MAY BE EQUIPPED WITH LIGHT FIXTURES AND MAY BE OF VARYING TYPES AND DIMENSIONS. A TYPICAL LIGHT FIXTURE IS SHOWN IN THE SECTION VIEWS HEREIN SO AS TO DEPICT STACKING PROCEDURES FOR PALLET UNITS AT SUCH LOCATIONS. CAUTION: EXTREME CARE MUST BE EXERCISED WHEN STACKING UNITS ADJACENT TO AND IMMEDIATELY BELOW LIGHT FIXTURES TO AVOID DAMAGE TO FIXTURES.
- R. ALL WHITE PHOSPHORUS (WP) AND PLASTICIZED WHITE PHOSPHORUS (PWP) FILLED AMMUNITION WILL BE PLACED INTO STORAGE IN A NOSE-END UP POSITION, EXCEPT FOR RIFLE GRENADES, 3.5" ROCKETS, AND 2.75" ROCKET WARHEADS AND ROCKETS. RIFLE GRENADES AND 3.5" ROCKETS WILL BE PLACED IN A NOSE-END DOWN POSITION. 2.75 " COMPLETE ROCKETS, ASSEMBLED OR UNASSEMBLED, AND 2.75" ROCKET WARHEADS MAY BE PLACED IN A HORIZONTAL POSITION FOR STORAGE. HOWEVER, TO AVOID ANY ERRORS IN POSITIONING OF WP AND PWP FILLED AMMUNITION IN STORAGE, ALL SUCH ITEMS SHOULD BE STORED AS STANDARD PALLET UNITS.
- S. WHEN ANY STRAPPED UNIT LOAD, WHETHER STANDARD OR RECONFIGURED, IS TO BE REMOVED FROM STORAGE FOR SHIPMENT TO ANOTHER LOCATION, INCLUDING SHIPMENTS TO TACTICAL UNITS, THE QUANTITY OF ITEMS WITHIN EACH UNIT LOAD MUST BE VERIFIED AND THE UNIT PROPERLY MARKED IN ACCORDANCE WITH NORMAL MARKING PROCEDURES.



155MM SLP 8/SMALL PALLET

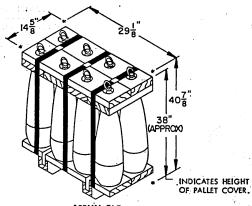
(UNIT WEIGHT----800 LBS)
REFER TO PAGES 8 AND 9 FOR STORAGE
PROCEDURES.



8" SLP 6'SMALL PALLET

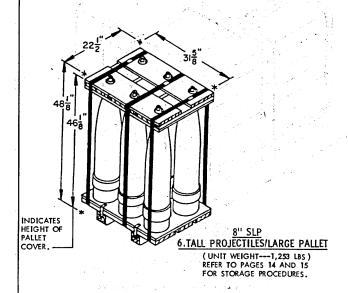
(UNIT WEIGHT----1,256 LBS)
REFER TO PAGES 10 AND 11
FOR STORAGE PROCEDURES.

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155MM SLP 8/LARGE PALLET

(UNIT WEIGHT---810 - 890 LBS) REFER TO PAGES 12 AND 13 FOR STORAGE PROCEDURES.



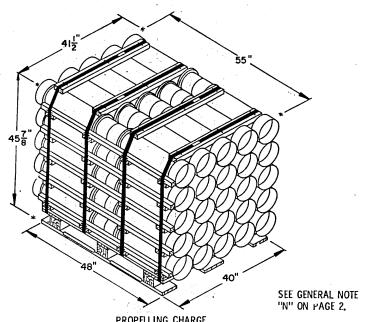
8" SLP 6 TALL PROJECTILES/SMALL PALLET

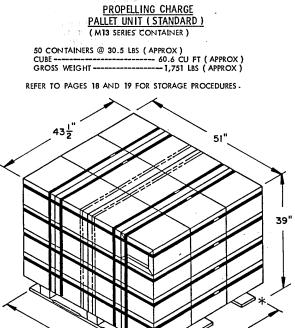
(UNIT WEIGHT---1,296 LBS)
REFER TO PAGES 16 AND 17
FOR STORAGE PROCEDURES.

STANDARD UNIT DETAILS

PAGE 3

INDICATES HEIGHT OF PALLET COVER.

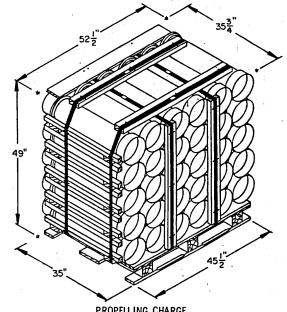




5.56MM CARTRIDGE PALLET UNIT (STANDARD)

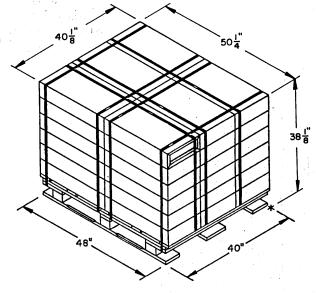
48 BOXES @ 72 LBS (APPROX)
CUBE-----50.1 CU FT (APPROX)
GROSS WEIGHT-----3,545 LBS (APPROX)

REFER TO PAGES 22 AND 23 FOR STORAGE PROCEDURES.



PROPELLING CHARGE PALLET UNIT (STANDARD) (PA37 SERIES CONTAINER)

REFER TO PAGES 20 AND 21 FOR STORAGE PROCEDURES .

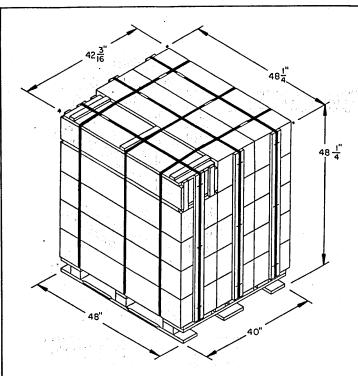


81MM CARTRIDGE PALLET UNIT (STANDARD)

36 BOXES @ 49 LBS (APPROX) -- 44.5 CU FT (APPROX)

REFER TO PAGES 24 AND 25 FOR STORAGE PROCEDURES .

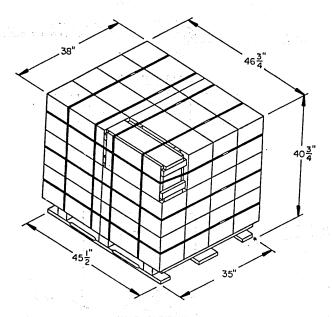
STANDARD UNIT DETAILS



105MM CARTRIDGE PALLET UNIT (STANDARD)

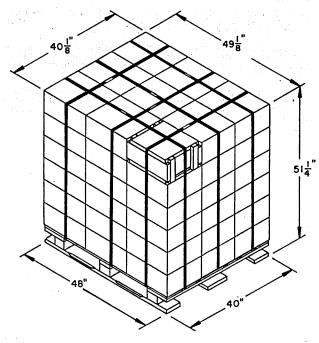
15 BOXES @ 141 LBS (APPROX)
CUBE-----GROSS WEIGHT------- 56.8 CU FT (APPROX) ---2,216 LBS (APPROX)

REFER TO PAGES 26 AND 27 FOR STORAGE PROCEDURES .



MINE, ANTITANK PALLET UNIT (STANDARD)

REFER TO PAGES 30 AND 31 FOR STORAGE PROCEDURES .



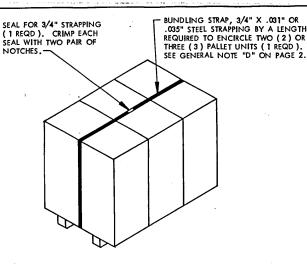
<u>HAND GRENADE</u> <u>PALLET UNIT (STANDARD)</u>

54 BOXES @ 42 LBS (APPROX)
CUBE ----GROSS WEIGHT -----

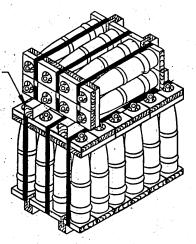
- 58.5 CU FT (APPROX) --- 2,355 LBS (APPROX)

REFER TO PAGES 28 AND 29 FOR STORAGE PROCEDURES .

STANDARD UNIT DETAILS



DUNNAGE, 4" X 4" BY LENGTH TO SPAN TWO (2) OR THREE (3) PALLET UNITS AS SHOWN (2 REQD);



TYPICAL BUNDLING DETAIL

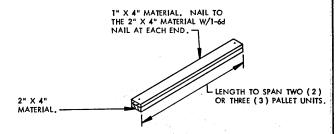
SEE GENERAL NOTE "D" ON PAGE 2.

SPECIAL NOTES:

- ALTHOUGH NOT TO BE APPLIED AS A STANDARD PRACTICE (BECAUSE OF HIGH-ER COST), AVAILABLE 1-1/4" STRAPPING CAN BE USED IN LIEU OF THE SPECIFIED 3/4" BUNDLING STRAP IF THE 3/4" STRAP IS NOT READILY AVAILABLE.
- IF DESIRED AND/OR BECAUSE OF OPERATIONAL NECESSITY, TWO STRAPS MAY BE USED TO UNITIZE EACH BUNDLED UNIT, PROVIDING THE TOTAL STRENGTH OF THE TWO STRAPS IS EQUAL TO OR GREATER THAN THE STRENGTH OF THE SINGLE STRAP SPECIFIED.
- OCCASIONALLY, PALLET UNITS WILL ALREADY BE BUNDLED WHEN THEY ARRIVE AT THE STORAGE LOCATION. THIS WILL NEGATE THE REQUIREMENT FOR BUND-LING UNITS AS SHOWN IN THE "BUNDLING DETAIL" PROVIDING THE BUNDLING STRAPPING IS A "FINISH B" STRAP.

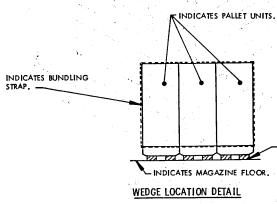
TYPICAL BUNDLED PALLET UNITS WITH ADDITIONAL UNIT PLACED ON TOP.

ALTHOUGH THIS DETAIL DEPICTS THREE (3) BUNDLED UNITS, TWO (2) UNITS MAY ALSO BE BUNDLED, DEPENDING ON THE LENGTH AND HEIGHT OF THE UNIT, SEE GENERAL NOTE "D" ON PAGE 2.



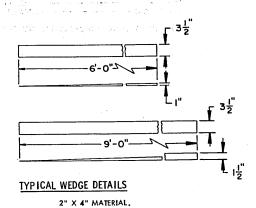
DUNNAGE ASSEMBLY

USE UNDER THE SKIDS OF ALL PALLET UNITS ABOVE THE FIRST LAYER, ASSEMBLY NOT REQUIRED FOR 155MM PROJECTILES SHOWN ON PAGES 8 AND 9, HOWEVER, 2" X 4" DUNNAGE MUST BE USED.

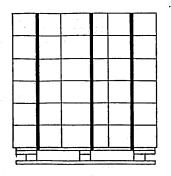


WEDGES ARE NOT DEPICTED IN THE ISOMETRIC VIEWS OR IN THE SMALL SECTION VIEWS WITHIN THIS DRAWING.

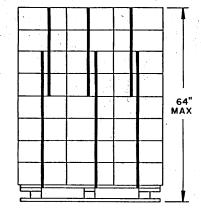
WEDGE.



BUNDLING AND DUNNAGE DETAILS (SLPS)



TYPICAL STANDARD PALLET



MODIFIED UNIT WITH STRAPS

(METHOD NO. 1)

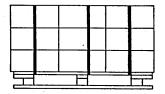
SEE GENERAL NOTES "D" AND "M" ON PAGE 2.



NEW-HEIGHT NON-STANDARD UNIT

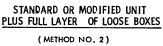
(METHOD NO. 3)

SEE GENERAL NOTES "D" AND "M" ON PAGE 2.



PARTIAL-HEIGHT UNIT

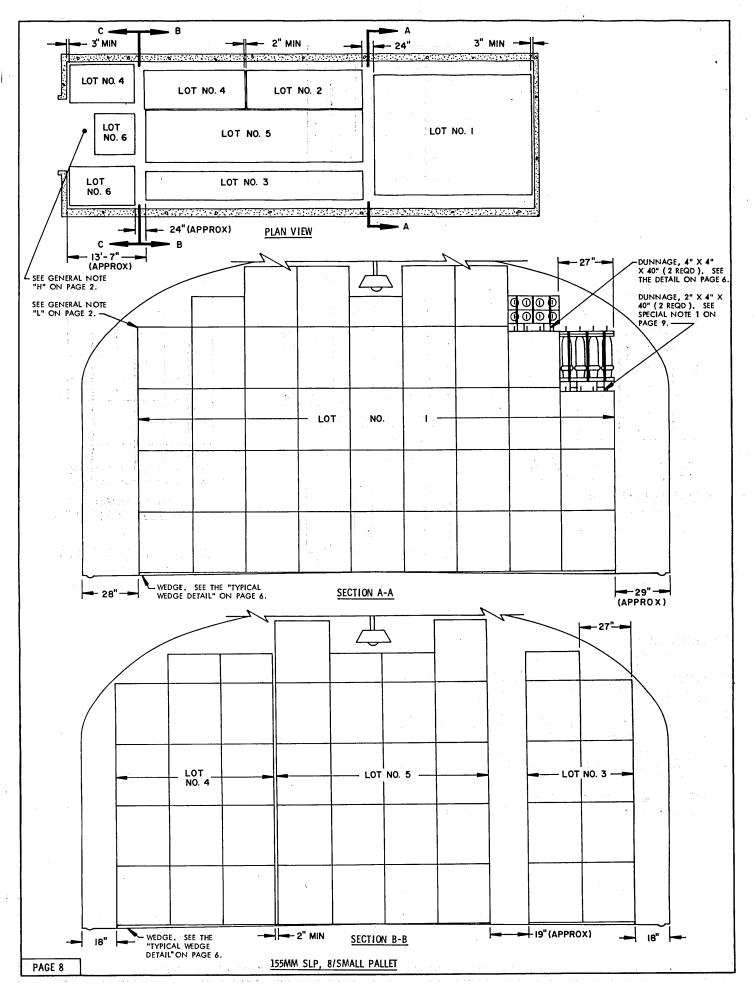
(METHOD NO. 4)

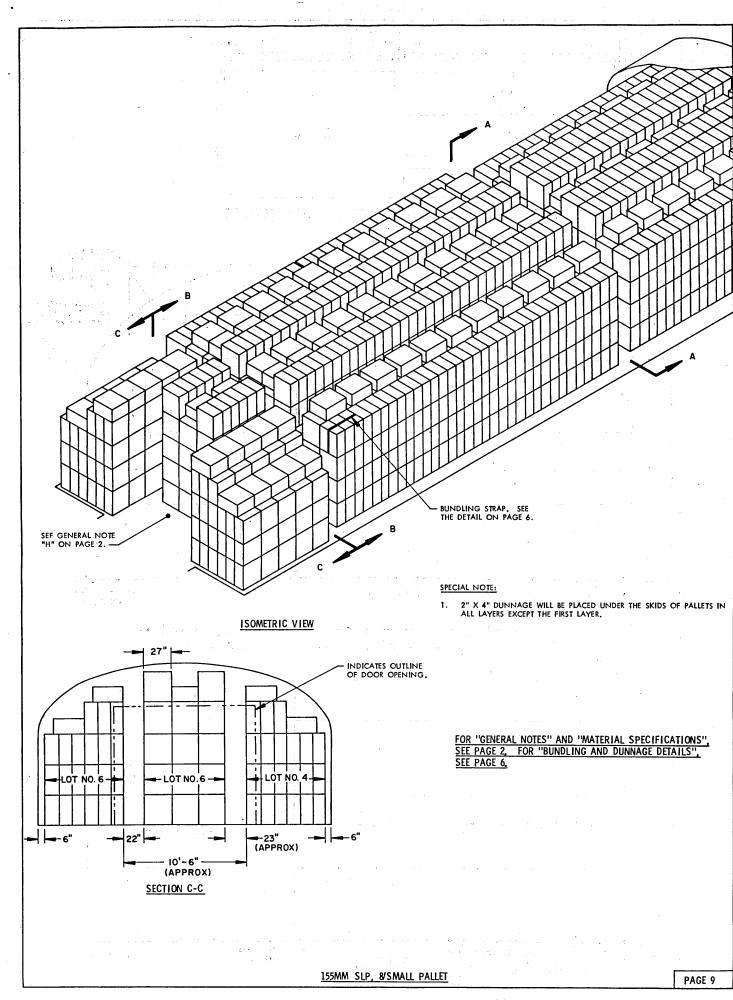


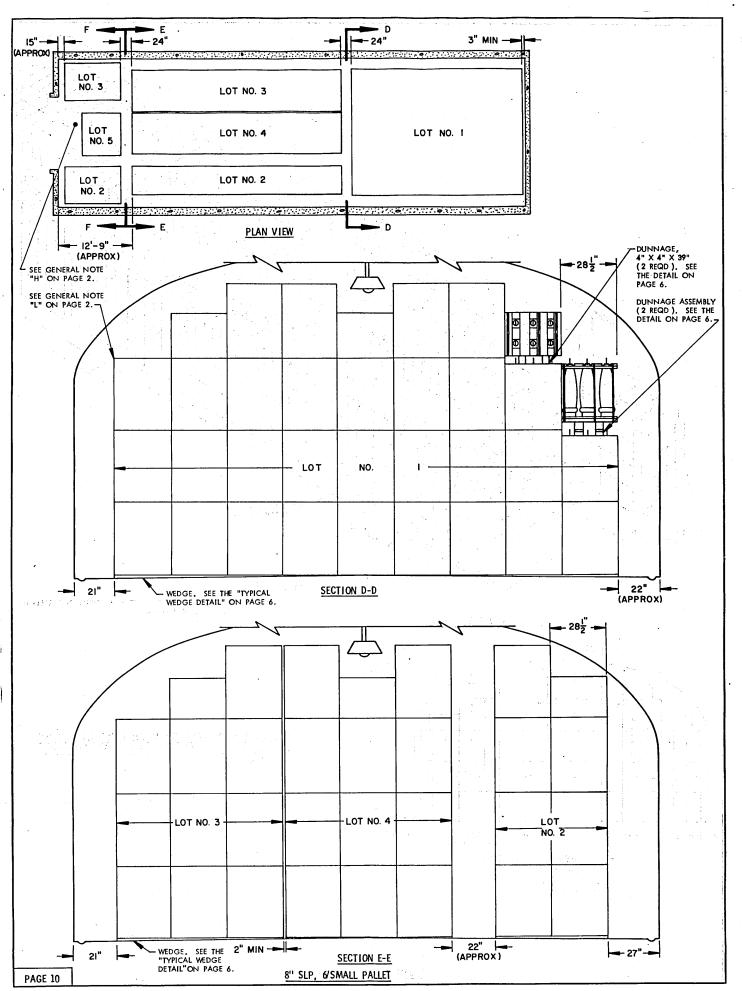
LOOSE BOXES ARE LIMITED TO ONE LAYER FOR SAFE HANDLING. SEE GENERAL NOTES "D" AND "O" ON PAGE 2.

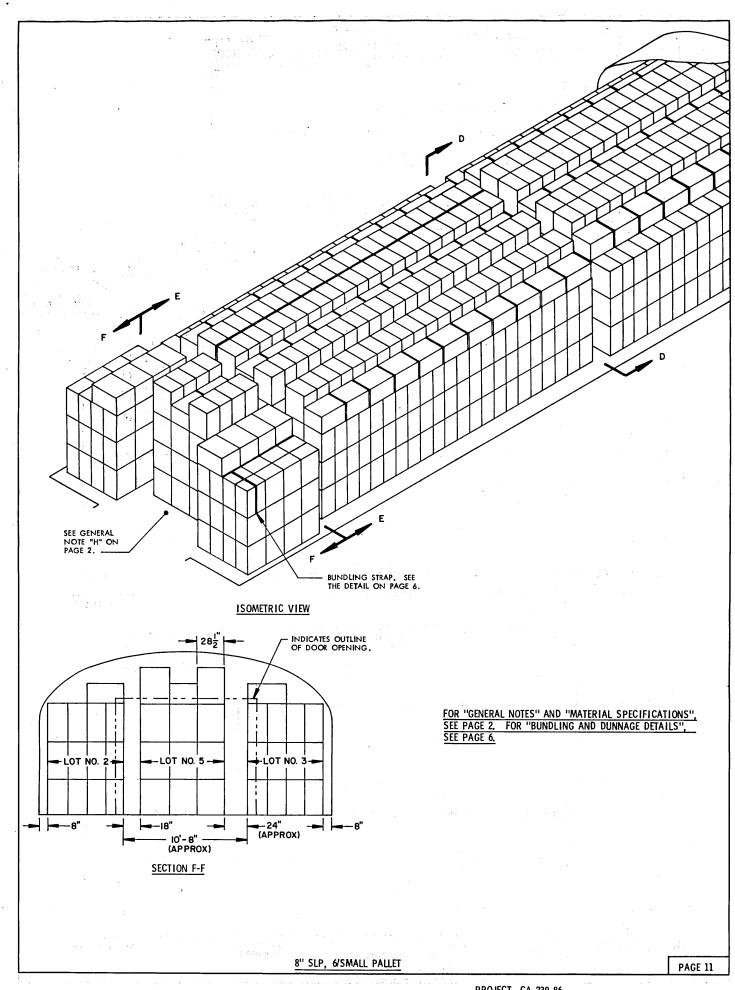
RECONFIGURATION METHODS:

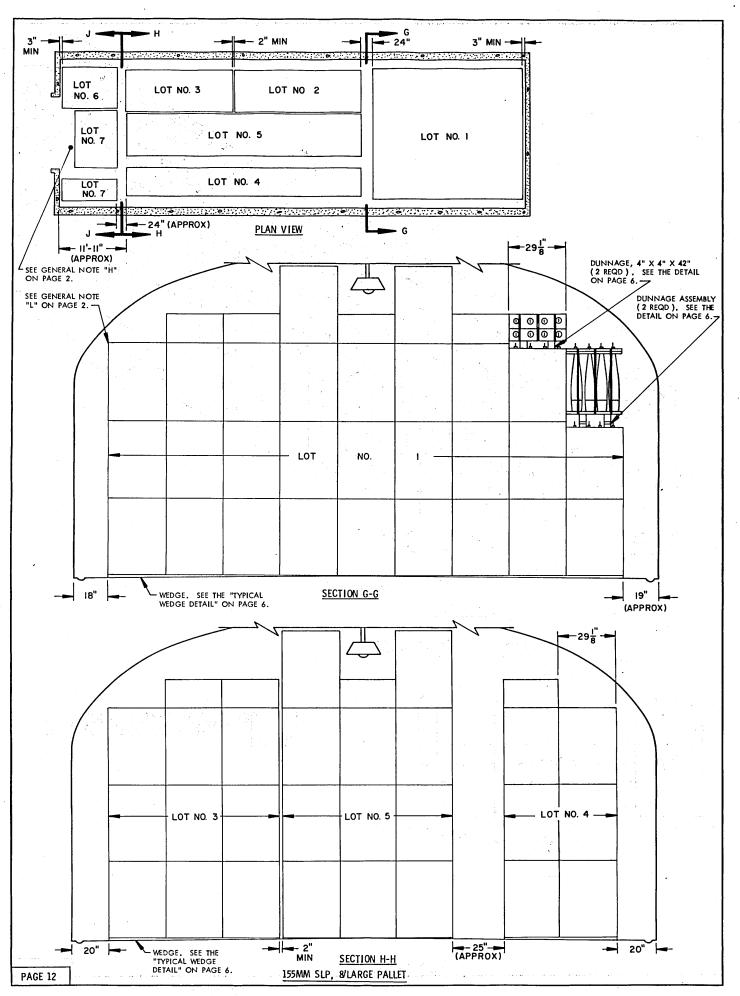
- 1. PRIOR TO RECONFIGURATING UNITS, SEE GENERAL NOTE "P" ON PAGE 2.
- MODIFIED UNIT WITH STRAPS: THIS CONFIGURATION IS ACHIEVED BY INCREASING THE HEIGHT OF THE "STANDARD" UNITS BY ADDING AND STRAPPING ONE OR MORE LAYERS TO THEM. SEE METHOD NO. 1 ABOVE. THIS UNIT MUST NOT EXCEED 64" IN HEIGHT. SEE GENERAL NOTE "M" ON PAGE 2.
- STANDARD UNIT PLUS ONE LAYER: IN THIS CONFIGURATION, ONE LAYER OF LOOSE BOXES IS ADDED TO THE "STANDARD OR MODIFIED UNIT". ADDITIONAL STRAPPING IS NOT REQUIRED. SEE METHOD NO. 2 ABOVE. Ιз.
- NEW-HEIGHT NON-STANDARD UNIT: TO ACHIEVE THIS CONFIGURATION, MODIFY THE STANDARD HEIGHT UNIT BY ADDING OR REMOVING ONE OR MORE LAY-ERS. RESTRAP THE NEW-HEIGHT UNIT. SEE METHOD NO. 3 ABOVE. THIS UNIT MUST NOT EXCEED 64" IN HEIGHT. SEE GENERAL NOTE "M" ON PAGE 2.
- PARTIAL-HEIGHT UNIT: THIS CONFIGURATION IS ACHIEVED BY BREAKING DOWN STANDARD UNITS AND RESTRAPPING THEM INTO UNITS WHICH ARE LESSER IN HEIGHT THAN THE ORIGINAL STANDARD UNIT. SEE METHOD NO. 4 ABOVE.

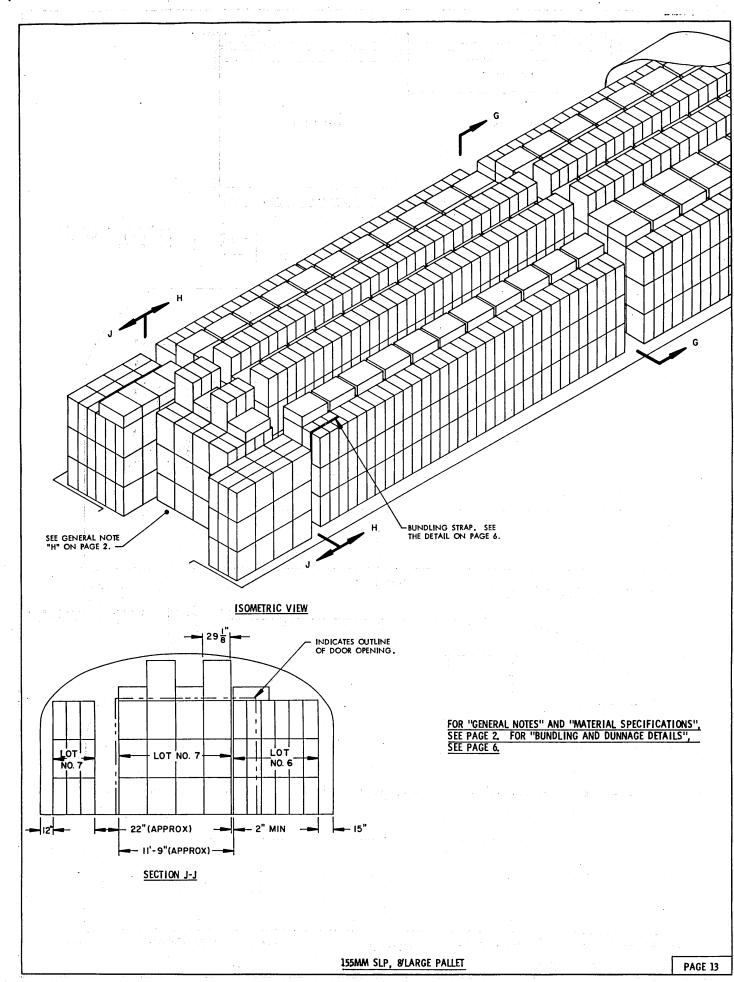


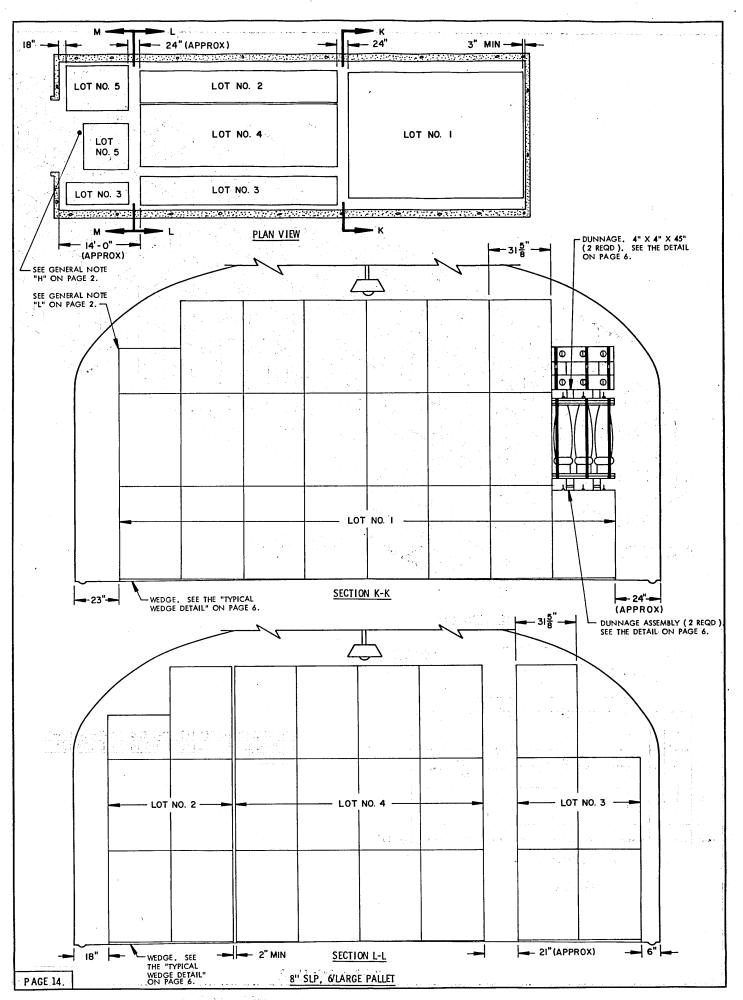


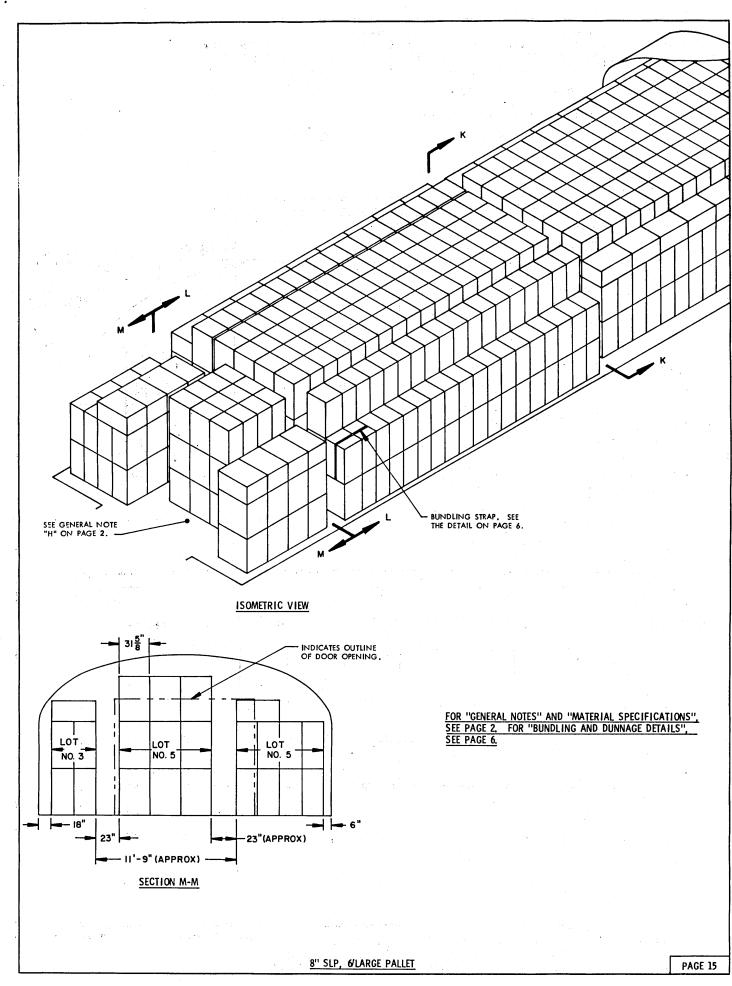


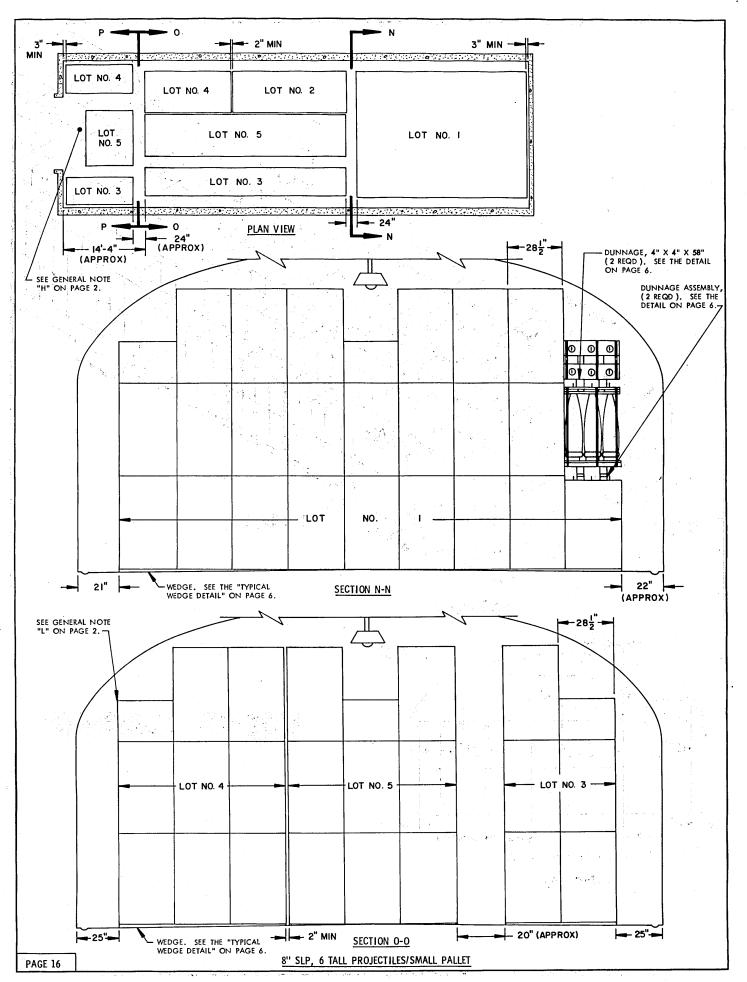




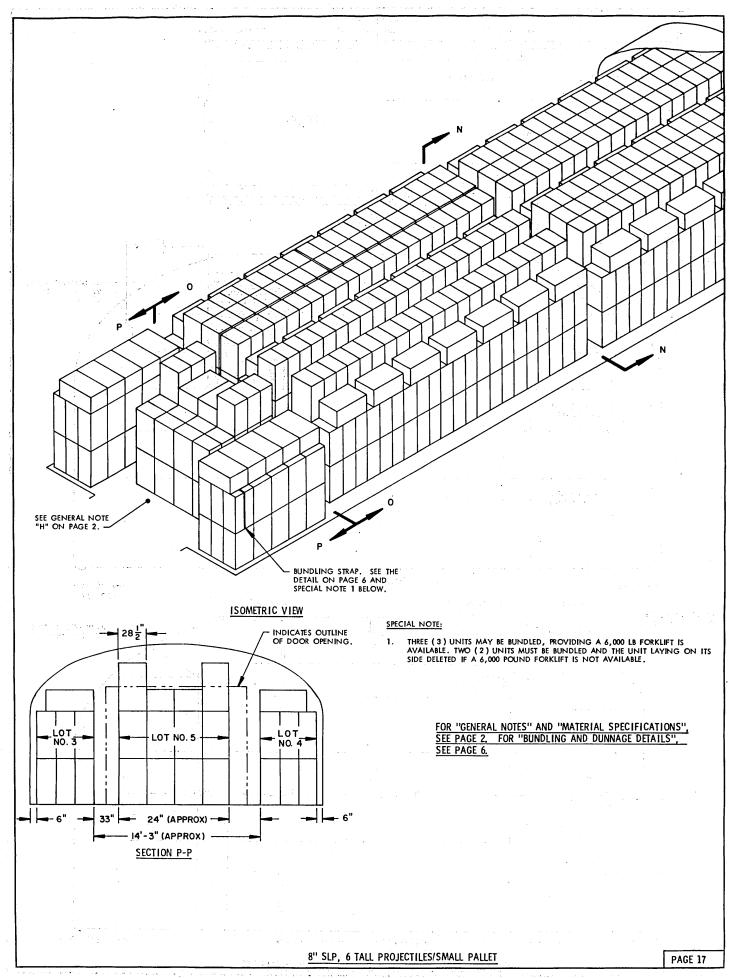


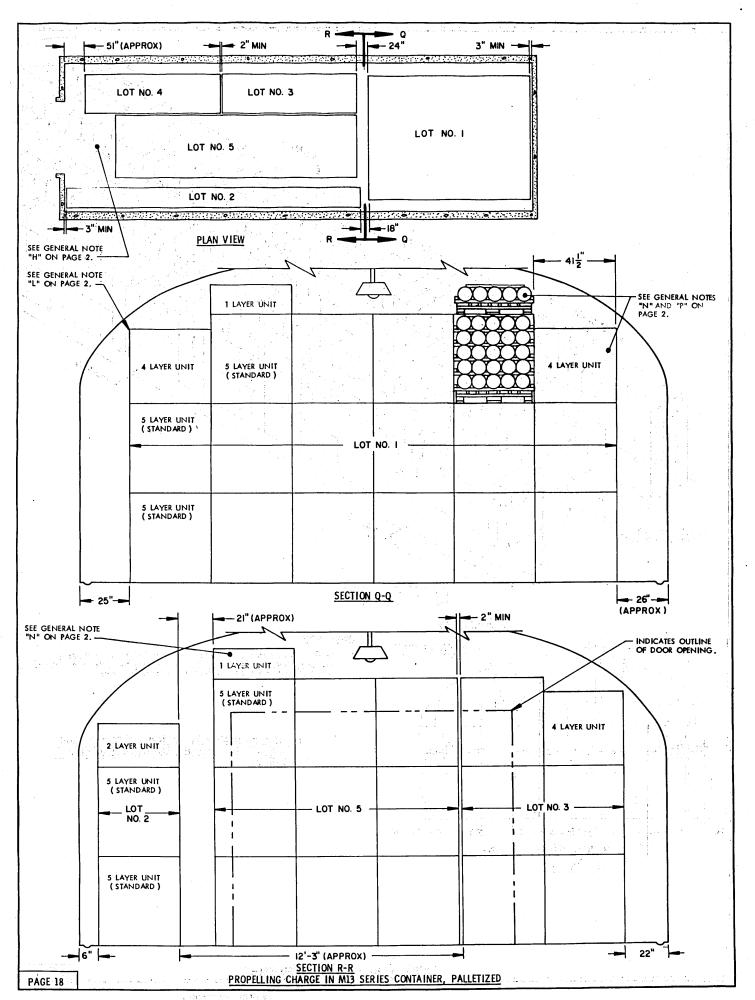


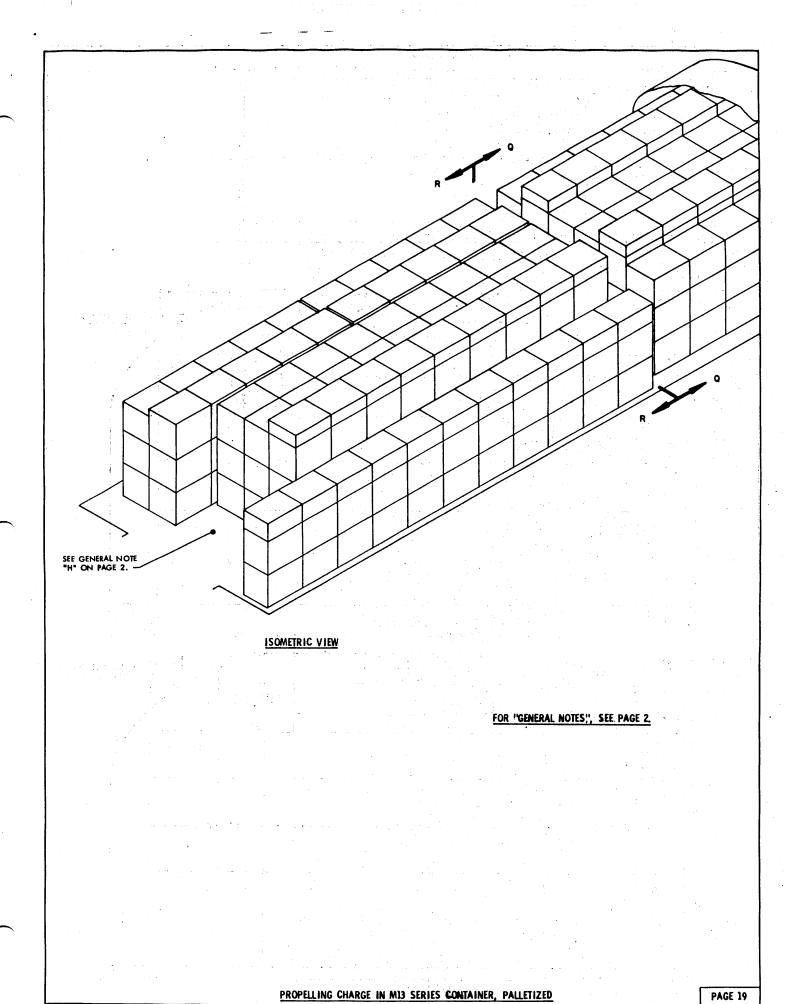


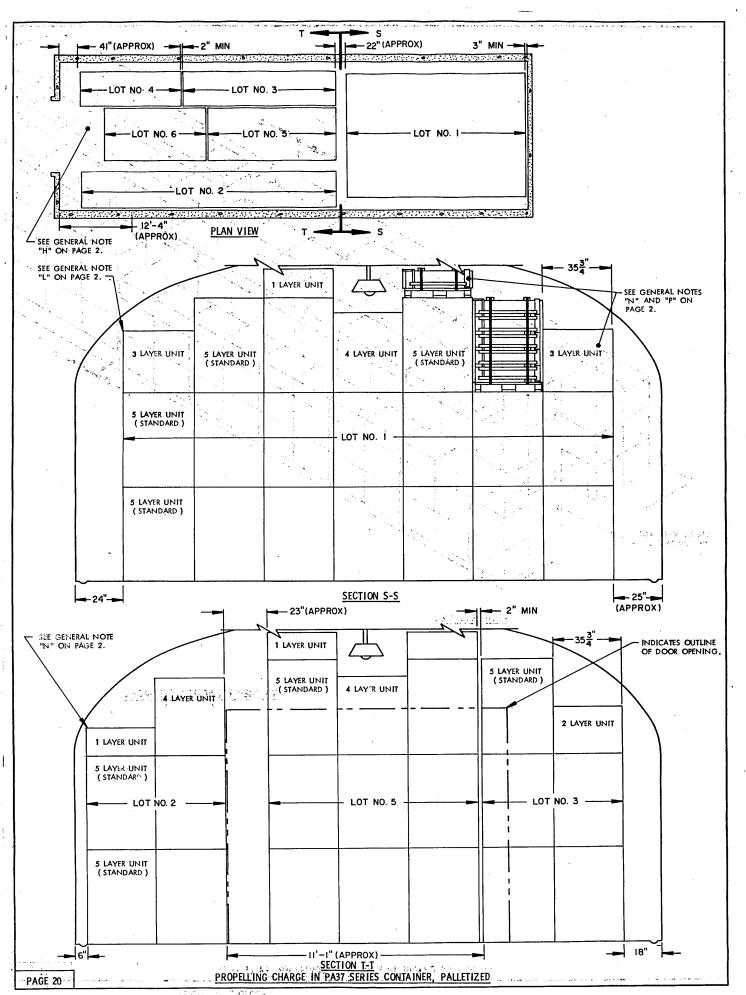


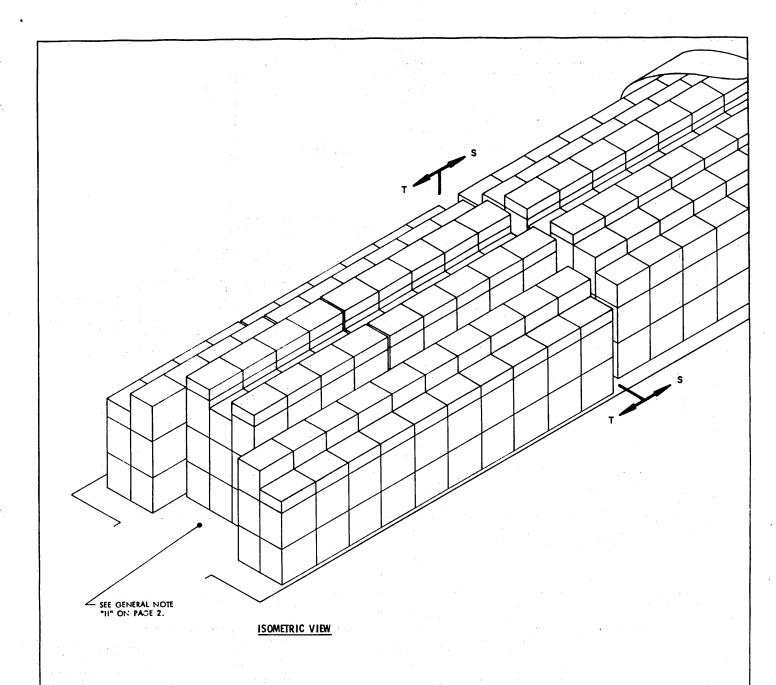
PROJECT <u>CA 239-86</u>





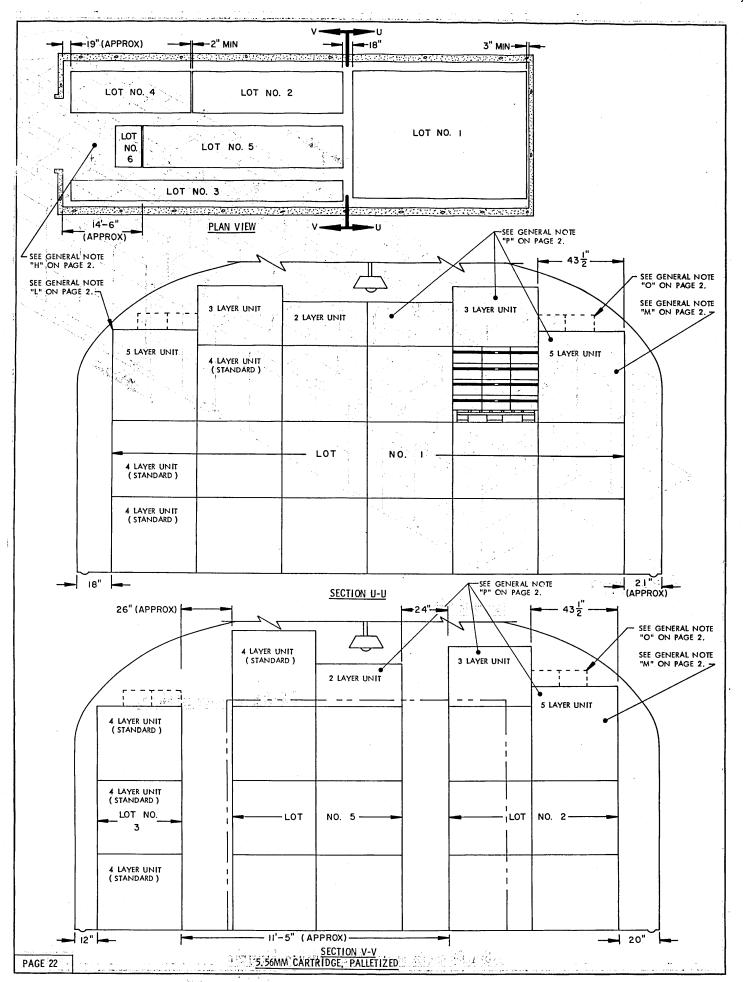


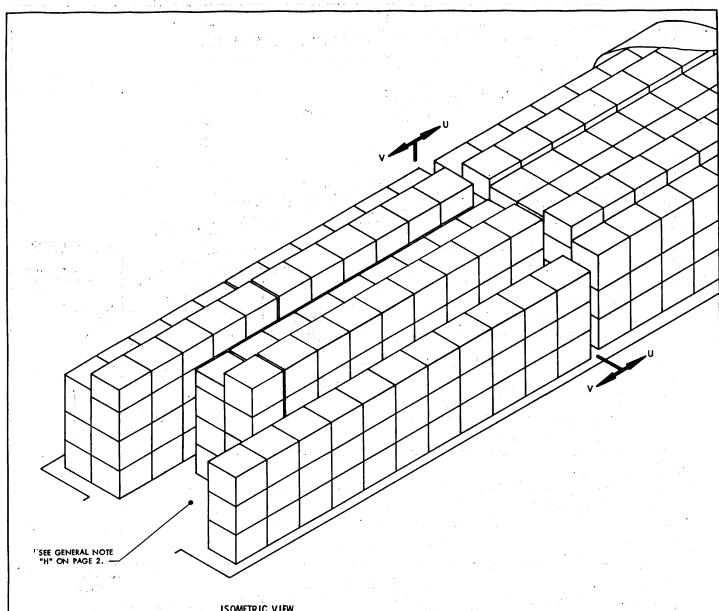




FOR "GENERAL NOTES", SEE PAGE 2.

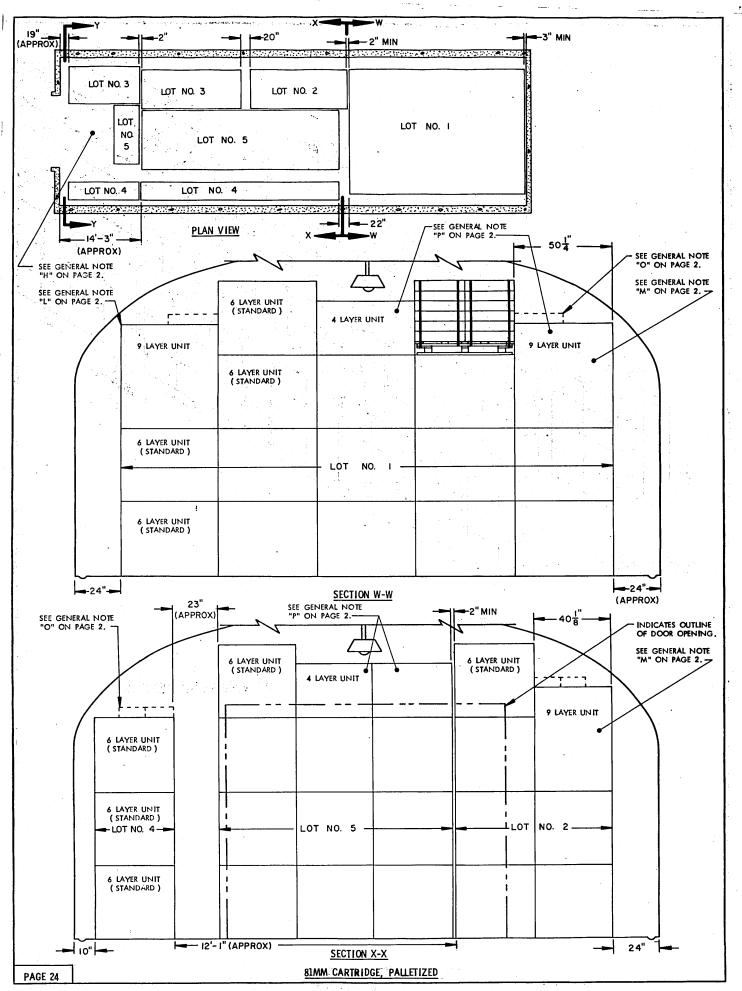
PROPELLING CHARGE IN PAST SERIES CONTAINER, PALLETIZED

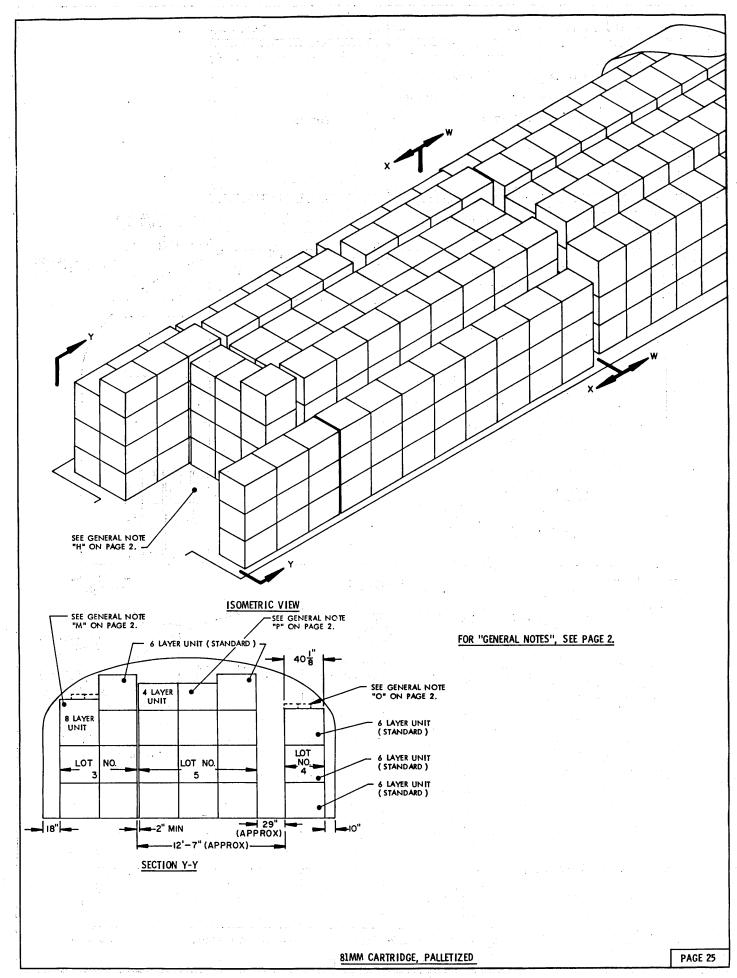


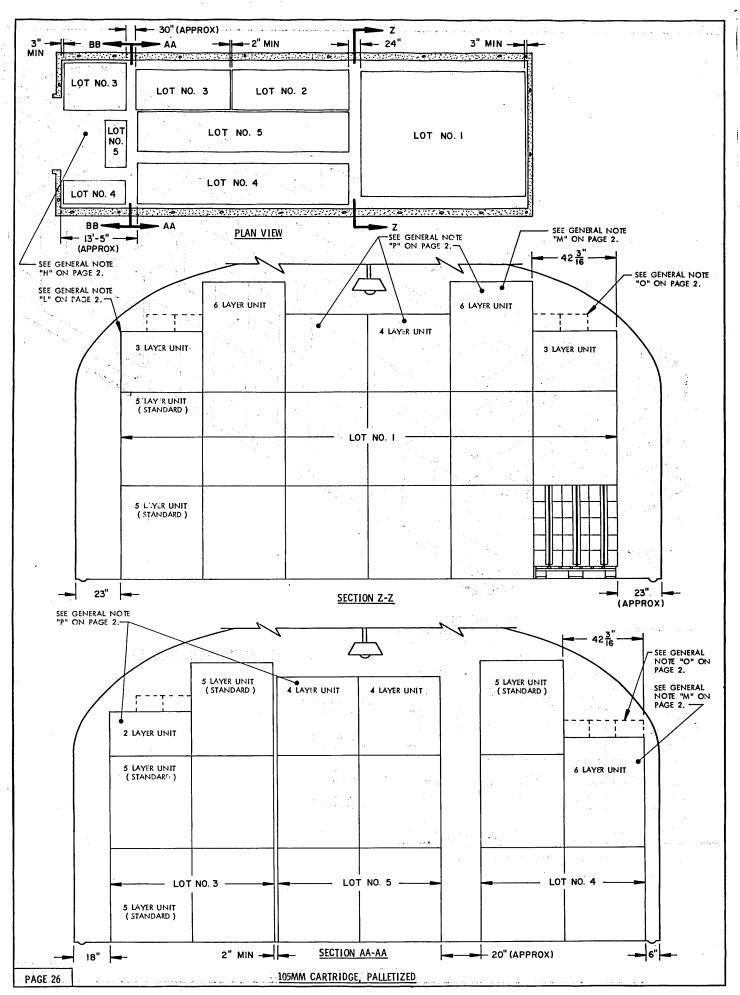


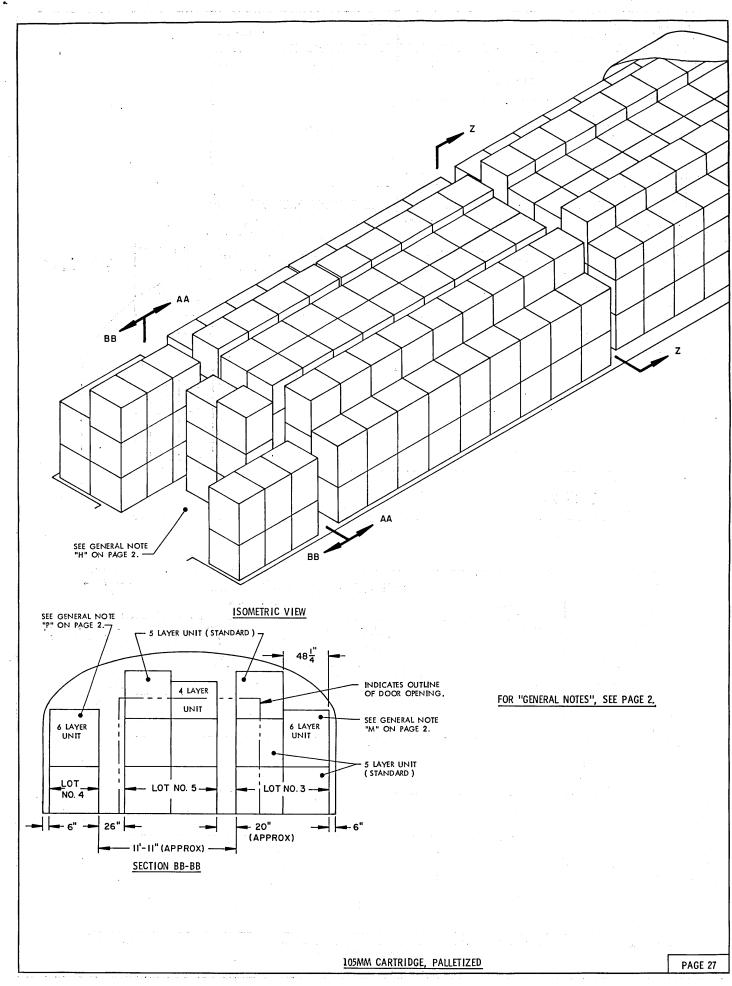
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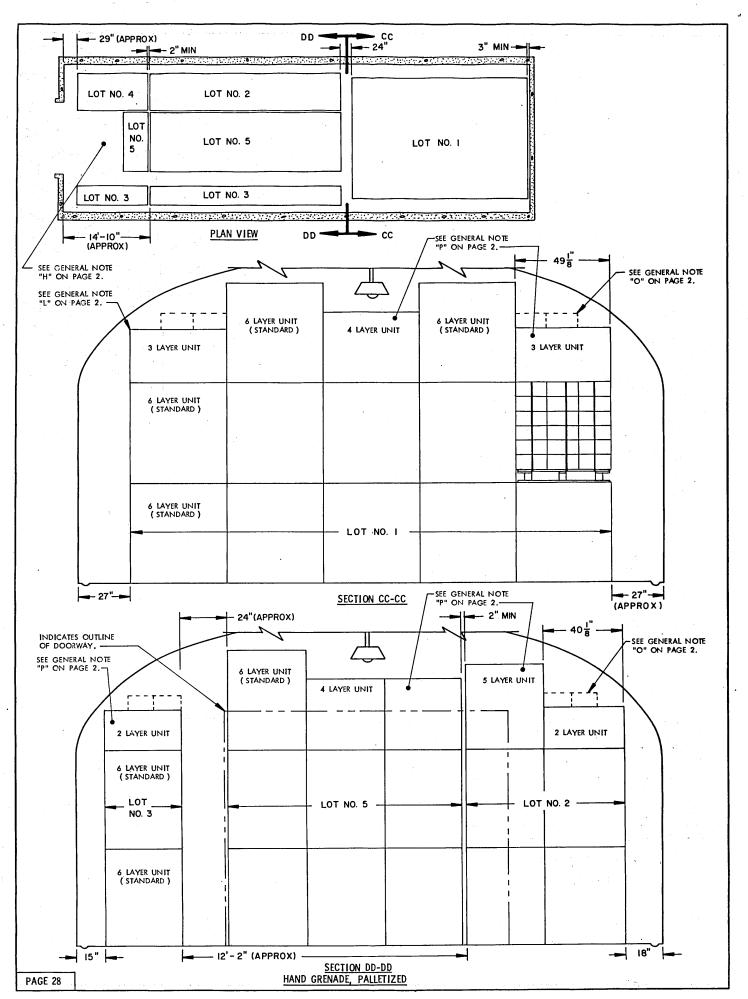
5.56MM CARTRIDGE, PALLETIZED

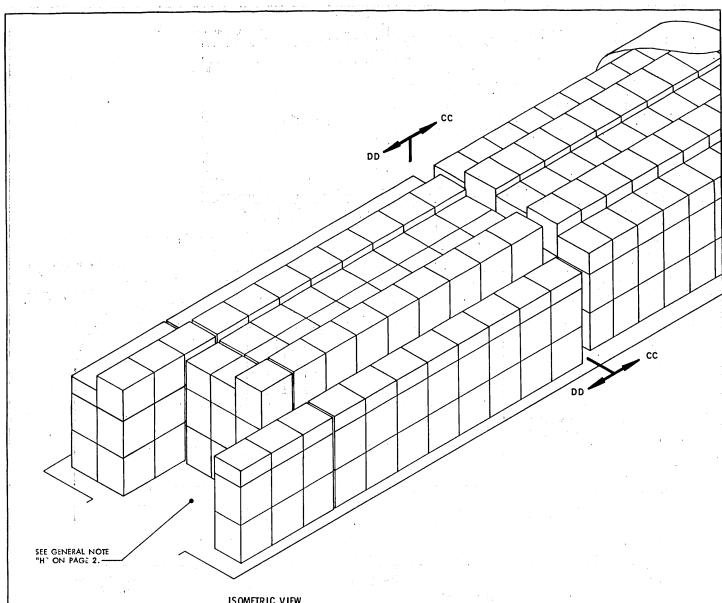






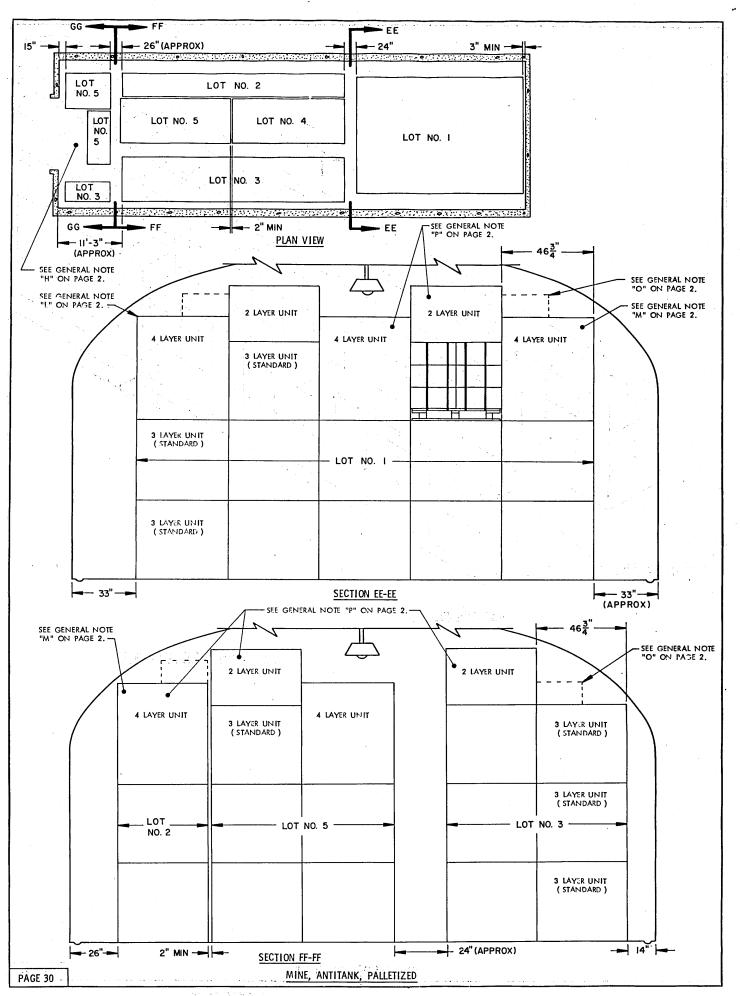


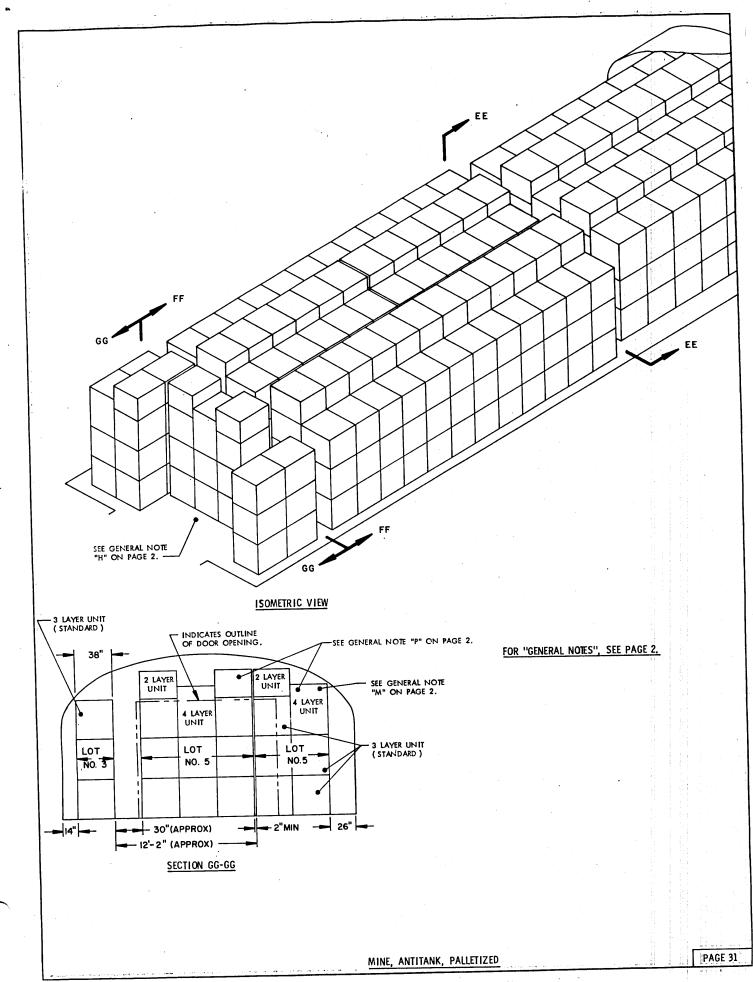




FOR "GENERAL NOTES", SEE PAGE 2.

HAND GRENADE, PALLETIZED





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<u>- 역사 (1884년</u>학 교육 전 1816년 2월 전