HAWK

LOADING AND BRACING ON FLAT BED OR "LOW-BOY" TRAILER● OF RANGE ONLY RADAR, AN/MPQ-37 AND/OR AN/MPQ-51, TRAILER MOUNTED

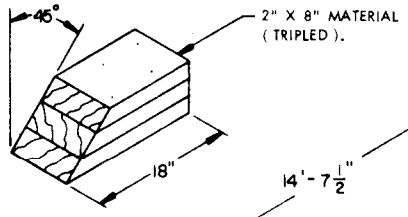
● FOR TRAILERS EQUIPPED WITH A PNEUMATIC (AIR RIDE) SUSPENSION SYSTEM, SEE THE "ADDITIONAL SPECIAL PROVISIONS" ON PAGE 3.

THIS DRAWING, INCLUDING REVISION NO. 3, SUPERSEDES DRAWING 19-48-7487-GSE11HA39, DATED 24 SEPTEMBER 1962, AND ALL REVISIONS THERETO, THROUGH NO. 2, DATED JUNE 1971.

DO NOT SCALE

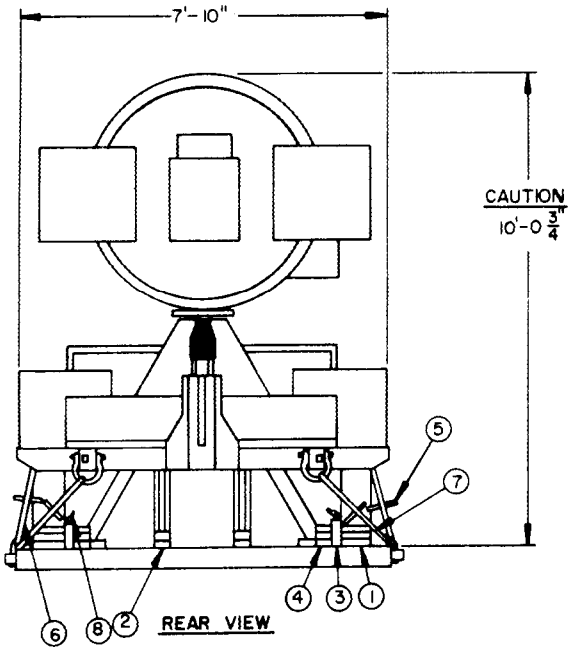
REVISIONS				DRAFTSMAN	PROJ ENG	
				DAK	RWS	
3	FEB 79		Wm J Hogue John H Byrd	CHECKER	LOG PHASE OFFICE	
				APPROVED, U.S. ARMY MISSILE MATERIEL READINESS COMMAND William J Hogue		
				APPROVED BY ORDER OF COMMANDING GENERAL, U.S. ARMY MATERIEL DEVELOPMENT AND READINESS COMMAND (DARCOM) John H Byrd Jr. U.S. ARMY DEFENSE AMMUNITION CENTER AND SCHOOL		
				U.S. ARMY DARCOM DRAWING		
				FEBRUARY 1979		
				CLASS	DIVISION	DRAWING	FILE
				19	48	7487	GSE 11HA39

PROJECT GSE 245-62



CHOCK BLOCK

ISOMETRIC VIEW



REAR VIEW

KEY NUMBERS

(1) CHOCK BLOCK (4 REQD). SEE THE DETAIL ON THIS PAGE. LOCATE BEVELED END OF BLOCK AGAINST WHEEL. NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/5-12d NAILS. NAIL EACH ADDITIONAL PIECE W/4-20d NAILS. SEE GENERAL NOTE "L".

(2) FORWARD BLOCKING (1 REQD). SEE THE DETAIL ON PAGE 4.

(3) RUBBING STRIP, 2" X 6" X 36" (2 REQD). POSITION ON EDGE AND NAIL TO A LOWER PIECE MARKED (4) W/5-12d NAILS.

(4) SIDE BLOCKING, 2" X 4" X 36" (TRIPLED) (2 REQD). PREPOSITION AND NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/5-12d NAILS. NAIL EACH ADDITIONAL PIECE IN A LIKE MANNER.

(5) WIRE TWISTER, 2" X 2" BY A LENGTH TO SUIT (8 REQD). SEE GENERAL NOTE "F".

(6) EIGHT (8) STRANDS OF NO. 8 GAGE BLACK ANNEALED WIRE (4 REQD). PASS THRU HOLES IN A WHEEL AND THRU A TRAILER TIE DOWN FACILITY TO FORM A COMPLETE LOOP. TWIST TAUT WITH PIECE MARKED (5). SEE THE "WHEEL SECUREMENT" DETAIL ON PAGE 4. SEE THE "SPECIAL PROVISIONS"ON PAGES 3 AND 4.

(7) SIXTEEN (16) STRANDS OF NO. 8 GAGE BLACK ANNEALED WIRE (4 REQD). INSTALL WIRE TO APPROXIMATE THE ANGLE SHOWN AND TO FORM A COMPLETE LOOP FROM A TIE DOWN FACILITY ON THE TRAILER THRU THE LADING LUNETTE AT THE FRONT AND/OR THE LADING TIE DOWN DEVICE AT THE REAR AND BACK TO THE TRAILER TIE DOWN FACILITY. TWIST TAUT WITH PIECE MARKED (5). NOTE: IF DESIRED, 3/8" STEEL WIRE ROPE (OR LARGER) MAY BE INSTALLED IN LIEU OF THE WIRE HOLD DOWNS. USE A THIMBLE ("OPEN PATTERN" RECOMMENDED) AT EACH TRANSPORTER TIE DOWN FACILITY AND AT EACH REAR LADING TIE DOWN DEVICE. USE FOUR (4) CLIPS PER EACH CABLE JOINT AND ONE (1) TO SECURE EACH THIMBLE. NOTE THAT NUTS ON 3/8" CABLE CLIPS WILL BE TIGHTENED TO A TORQUE OF 35 TO 40 FOOT POUNDS. SEE GENERAL NOTES "H" AND "J", AND THE "SPECIAL PROVISIONS" ON PAGES 3 AND 4.

(8) WATERPROOF PAPER OR BURLAP OF SUFFICIENT SIZE TO POSITION UNDER AND EXTEND 2" ABOVE PIECE MARKED (3).

ADDITIONAL SPECIAL PROVISIONS:

FOR TRAILERS EQUIPPED WITH A PNEUMATIC (AIR RIDE) SUSPENSION SYSTEM, THE LADING MAY BE SECURED BY CARRIER-OWNED CHAINS AND LOAD BINDERS IN ACCORDANCE WITH NOTES 1, 4, 5, 6 AND 7 OF THE "SPECIAL PROVISIONS" ON PAGE 4, AND THE FOLLOWING CONDITIONS, WHICH WILL BE MET INSTEAD OF THOSE CONDITIONS SPECIFIED BY NOTES 2 AND 3 ON PAGE 4:

1. IN LIEU OF THE TWO (2) STRANDED WIRE TIE DOWNS MARKED (7) ON PAGE 2, ONE (1) LINE OF 3/8" CHAIN MAY BE SUBSTITUTED FOR SECURING THE LADING LUNETTE. WHEN THE CHAIN IS INSTALLED IT SHALL BE THREADED TO ENCIRCLE ONE SIDE OF THE LUNETTE RING. THE ENDS OF THE CHAIN WILL BE SECURELY FASTENED AT OPPOSITE SIDES OF THE TRANSPORTER.

2. FOR WHEEL AND LADING SECUREMENT ON ONE SIDE, IN LIEU OF THE TWO (2) STRANDED WIRE TIE DOWNS MARKED (6) ON PAGE 2 AND THE ONE (1) STRANDED WIRE TIE DOWN MARKED (7) ON PAGE 2, ONE (1) LINE OF 3/8" CHAIN MAY BE SUBSTITUTED. THE CHAIN MAY BE INSTALLED IN ONE OF THE FOLLOWING TWO WAYS. IT MAY RUN FROM A TRANSPORTER TIE DOWN FACILITY REAR OF THE LADING WHEEL, THRU A LIGHTENING HOLE WITHIN THE UPPER AND FORWARD PART OF THE LADING WHEEL, REARWARD AND BACK THRU AN ADJACENT LIGHTENING HOLE OF THE LADING WHEEL, AND FORWARD AND DOWN TO A TRANSPORTER TIE DOWN FACILITY IN FRONT OF THE LADING WHEEL. TO PREVENT DAMAGE TO THE LIGHTENING HOLES AND WHEELS OF THE LADING, A CHAIN MAY BE INSTALLED FROM A REARWARD TIE DOWN FACILITY AT THE SIDE OF THE TRANSPORTER, PASSED BEHIND THE LADING WHEEL AND OVER THE LADING AXLE, AND DOWN TO A FORWARD TIE DOWN FACILITY ON THE SAME SIDE OF THE TRANSPORTER.

GENERAL NOTES

A. THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AMCR 740-13.

B. THE LOAD AS SHOWN IS BASED ON A FLAT BED OR "LOW-BOY" TRAILER 8'-0" WIDE WITH A WOOD OR A WOOD AND METAL FLOOR. ONLY ONE UNIT OF LADING IS SHOWN; HOWEVER, MULTIPLES OF UNITS, AS SHOWN OR DISSIMILAR IN NATURE, MAY BE LOADED ON A TRAILER. THE NUMBER OF UNITS TO BE LOADED ON A TRAILER WILL BE DEPENDENT ON THE SIZE OF THE TRAILER TO BE USED OR THE QUANTITIES OF UNITS TO BE SHIPPED WITH THE VIEW OF FULL UTILIZATION OF THE CARRIER EQUIPMENT. CAUTION: THE LOAD AS SHOWN MAY REQUIRE CLEARANCE CONSIDERATION BECAUSE OF EXCESSIVE LADING SIZE.

C. ONLY TRAILERS CAPABLE OF SAFELY TRANSPORTING THE LADING TO DESTINATION WITHOUT DAMAGE WILL BE SELECTED. TRAILERS SELECTED MUST HAVE "SOUND" FLOORS WHICH PROVIDE NAIL RETENTION PROPERTIES EQUAL TO OR BETTER THAN THE SPECIFIED DUNNAGE LUMBER, AND A SUFFICIENT NUMBER OF TIE DOWN FACILITIES OF A STRENGTH EQUAL TO OR BETTER THAN SPECIFIED LADING TIE DOWN ASSEMBLIES.

D. SHIPMENT GROSS WEIGHT, AXLE DISTRIBUTION OF THE LADING WEIGHT AND OVERALL DIMENSIONS MUST MEET STATE LAW REQUIREMENTS.

E. LADING DATA:

ITEM DIMENSIONS ------ 14'-7-1/2" LONG X 7'-10" WIDE X 10'-0-3/4" HIGH.
ITEM GROSS WEIGHT --- 5,005 POUNDS (APPROX).

F. REFER TO ORD DWG 19-48-C-ORDJU-588, "WIRE ROPE AND ANNEALED WIRE APPLICATION METHODS FOR SECURING LADING ON RAIL & MOTOR CARRIER EQUIP", FOR PROPER TIE DOWN APPLICATION. CAUTION: DURING TWISTED WIRE CABLE AND/OR STEEL WIRE ROPE INSTALLATION, AVOID CONTACT WITH ALL ELECTRICAL WIRING, VEHICLE CONTROLS AND OTHER APPURTENANCES. METAL FILLERS OR COMPARABLE CUSHIONING MATERIAL MUST BE USED BETWEEN TIE DOWN WIRES AND/OR CABLES AND ALL SHARP EDGES, AND ANTI-CHAFING MATERIAL MUST BE USED BETWEEN CONTACTING TIE DOWN WIRES AND LADING TIRES. ADDITIONALLY, LADING TIRES WILL BE INFLATED TO HIGHWAY OPERATING PRESSURE AND ALL HAND BRAKES MUST BE "SET" WITH THE HAND LEVERS WIRE-TIED OR BLOCKED.

G. SEE THE "SPECIAL PROVISIONS" ON THIS PAGE AND ON PAGE 4 FOR SPECIFICATIONS WHICH MUST BE APPLIED IF CHAINS AND LOAD BINDERS ARE USED.

H. TWISTED WIRE CABLE AND/OR STEEL WIRE ROPE MUST BE TENSIONED SUFFICIENTLY TO CAUSE SLIGHT VEHICLE BODY DEPRESSION, AS APPLICABLE. TENSIONING OF STEEL WIRE ROPE CAN BE ACCOMPLISHED BY EMPLOYING TWO (2) CABLE GRIPPERS AND AN APPLICABLY SIZED "COME-A-LONG" TYPE MECHANICAL HOIST.

J. CAUTION: IT IS RECOMMENDED THAT TWISTED WIRE CABLE AND/OR STEEL WIRE ROPE BE INSTALLED TO APPROXIMATE THE ANGLE SHOWN; HOWEVER, IF PLACEMENT OF TRANSPORTER TIE DOWN FACILITIES PREVENTS THIS, CARE MUST BE EXERCISED TO ENSURE THAT CABLES ON THE SAME SIDE OF THE LADING ARE INSTALLED SO THEIR RETENTION FORCES ACT IN OPPOSITE LONGITUDINAL DIRECTIONS.

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 AND 2" X 6" MATERIAL IS ACTUALLY 1-1/2" THICK BY 5-1/2" WIDE.

L. NOTICE: A STAGGERED NAILING PATTERN WILL BE USED WHEN DUNNAGE IS NAILED TO THE FLOOR OF THE TRANSPORTING VEHICLE, OR WHEN LAMINATING DUNNAGE. ADDITIONALLY, THE NAILING PATTERN FOR AN UPPER PIECE OF LAMINATED DUNNAGE WILL BE ADJUSTED AS REQUIRED SO THAT A NAIL FOR THAT PIECE WILL NOT BE DRIVEN THROUGH ONTO OR RIGHT BESIDE A NAIL IN A LOWER PIECE.

BILL OF MATERIAL

LUMBER	LINEAR FEET	BOARD FEET
1" X 6"	5	3
2" X 2"	12	4
2" X 4"	46	31
2" X 6"	9	9
2" X 8"	16	22
NAILS	**NO. REQD**	**POUNDS**
6d (2")	34	1/4
12d (3-1/4")	106	1-1/2
16d (3-1/2")	40	1
20d (4")	64	2-1/2
WIRE, NO. 8 GAGE ---------- 600' REQD ---------- 55 LBS		
WATERPROOF PAPER OR BURLAP --- AS REQD ---------- NIL		

REVISIONS

REVISION NO. 2, DATED JUNE 1971, CONSISTS OF:

1. INCLUDING THE AN/MPQ-51 RADAR SET.
2. ADDING "SPECIAL PROVISIONS" FOR THE USE OF CHAINS AND LOAD BINDERS.
3. UPDATING THE GENERAL NOTES.
4. UPDATING THE DRAWING FORMAT.

REVISION NO. 3, DATED FEBRUARY 1979, CONSISTS OF:

1. CHANGES AS NECESSARY TO UPDATE DRAWING FORMAT.
2. ADDITION OF "ADDITIONAL SPECIAL PROVISIONS" FOR THE USE OF CHAINS AND LOAD BINDERS.

MATERIAL SPECIFICATIONS

LUMBER : DOUGLAS FIR OR COMPARABLE LUMBER WITH STRAIGHT GRAIN AND FREE FROM MATERIAL DEFECTS. REF: FED SPEC MM-L-751.

NAILS - : COMMON. REF: FED SPEC FF-N-105.

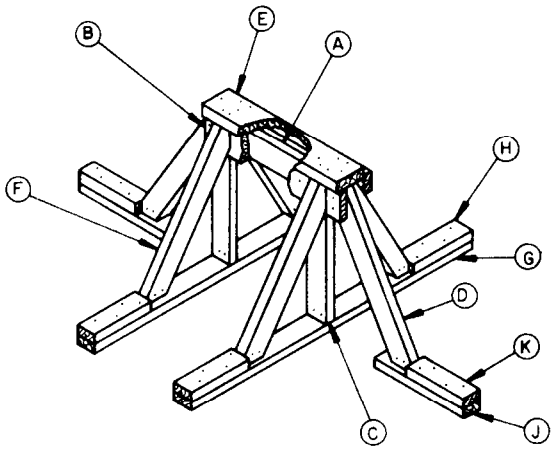
WIRE -- : ANNEALED, BLACK. REF. FED SPEC QQ-W-461.

ROPE -- : STEEL WIRE, PLAIN, PREFORMED, REGULAR LAY, 6 X 19, FLEXIBLE IWRC, MACWHYTE WIRE ROPE CO (OR EQUAL). REF: FED SPEC RR-W-410.

CLIP -- : "U" BOLT, CROSBY, HEAVY DUTY (OR EQUAL). REF: FED SPEC FF-C-450, TYPE I, CLASS 1.

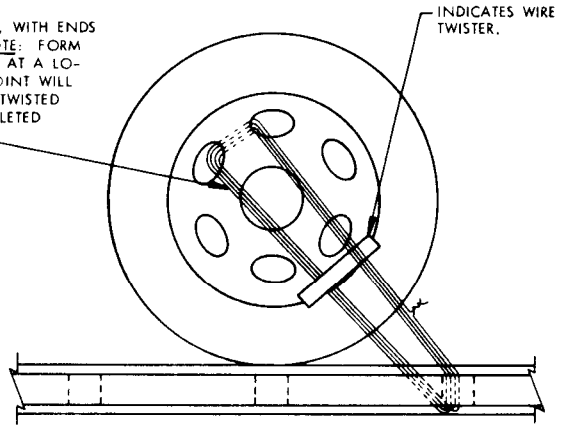
LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
RANGE ONLY RADAR	1	5,005 LBS
DUNNAGE		234 LBS
TOTAL WEIGHT		5,239 LBS



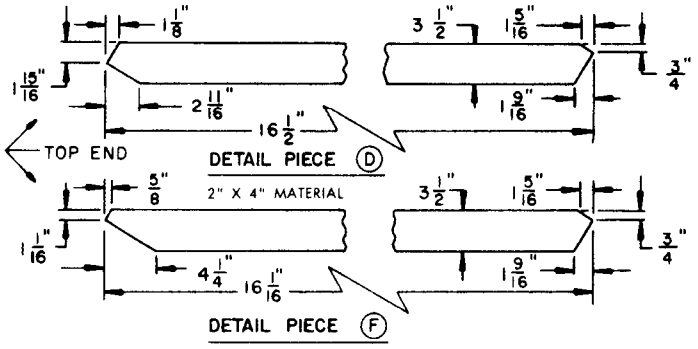
FORWARD BLOCKING

ONE CONTINUOUS WIRE, WITH ENDS TWISTED TOGETHER. NOTE: FORM THE TWISTED WIRE JOINT AT A LOCATION SO THAT THE JOINT WILL BE WITHIN ONE OF THE TWISTED PORTIONS OF THE COMPLETED CABLE ASSEMBLY.



WHEEL SECUREMENT

AN EIGHT (8) STRAND INSTALLATION OF NO. 8 GAGE BLACK ANNEALED WIRE IS SHOWN, PASSED THRU HOLES IN A WHEEL AND A TRAILER TIE DOWN FACILITY TO FORM A COMPLETE LOOP, AND READY TO BE TWISTED TAUT WITH A WIRE TWISTER.



KEY LETTERS

(A) 2" X 4" X 22" (1 REQD).

(B) 1" X 6" X 27" (2 REQD). NAIL TO PIECE MARKED (A) W/5-6d NAILS. NAIL TO PIECES MARKED (C) AND (D) W/3-6d NAILS EACH.

(C) 2" X 4" X 10-1/4" (2 REQD). CENTER ON PIECE MARKED (G) AND TOENAIL W/4-16d NAILS.

(D) 2" X 4" X 16-1/2" (2 REQD). DOUBLE BEVEL EACH END. SEE DETAIL PIECE (D) " FOR BEVEL CUTS REQUIRED. TOENAIL TO PIECE MARKED (J) W/4-16d NAILS AFTER THE ASSEMBLY ((A) THRU (G)) HAS BEEN LOCATED ON THE TRAILER AND PIECE MARKED (J) HAS BEEN NAILED TO THE TRAILER FLOOR.

(E) 2" X 6" X 27" (1 REQD). NAIL TO PIECE MARKED (A) W/4-12d NAILS AND TO PIECES MARKED (D) AND (F) W/2-12d NAILS EACH.

(F) 2" X 4" X 16-1/16" (4 REQD). DOUBLE BEVEL EACH END. SEE "DETAIL PIECE (F) " FOR BEVEL CUTS REQUIRED. TOENAIL TO PIECE MARKED (B) W/2-16d NAILS AND TO PIECE MARKED (G) W/4-16d NAILS.

(G) 2" X 4" X 43-1/2" (2 REQD). LOCATE BLOCKING ASSEMBLY ((A) THRU (G)) UNDER ITEM AND NAIL TO THE TRAILER FLOOR W/1-12d NAIL EVERY 8".

(H) 2" X 4" X 12" (4 REQD). POSITION AGAINST PIECE MARKED (F) AND NAIL TO PIECE MARKED (G) W/4-20d NAILS.

(J) 2" X 4" X 18" (2 REQD). NAIL TO THE TRAILER FLOOR W/5-12d NAILS.

(K) 2" X 4" X 12" (2 REQD). POSITION AGAINST PIECE MARKED (D) AND NAIL TO PIECE MARKED (J) W/4-20d NAILS.

SPECIAL PROVISIONS: (SEE CONDITION NO. 8 BELOW)

LADING MAY BE SECURED BY CARRIER-OWNED CHAINS AND LOAD BINDERS IN LIEU OF SPECIFIED STRANDED ANNEALED WIRE TIE DOWN DUNNAGE MATERIALS, PROVIDING THE FOLLOWING CONDITIONS ARE MET:

1. ONLY CHAINS AND LOAD BINDERS OF GOOD QUALITY SHOULD BE USED. CAUTION: EXTREME CARE MUST BE USED IN TENSIONING CHAINS TO PREVENT DAMAGE TO THE LADING OR DEFORMATION OF THE LADING TIE DOWN FACILITIES.
2. ONE (1) LINE OF 1/4" CHAIN MAY BE SUBSTITUTED FOR EACH STRANDED WIRE TIE DOWN CABLE, PIECE MARKED (7). CHAINS SHALL BE INSTALLED AT THE SAME LOCATIONS SHOWN FOR THE STRANDED WIRE CABLES AND IN THE SAME MANNER AS DIRECTED IN GENERAL NOTE "J" ON PAGE 3.
3. FOR WHEEL SECUREMENT, IN LIEU OF TWO (2) STRANDED WIRE TIE DOWNS, PIECE MARKED (6), ONE (1) LINE OF 1/4" CHAIN MAY BE USED. TO PREVENT DAMAGE TO THE LIGHTENING HOLES AND WHEELS OF THE LADING, AND TO FACILITATE THE APPLICATION OF CHAINS AND LOAD BINDERS, A CHAIN MAY BE INSTALLED FROM A FORWARD TIE DOWN FACILITY AT THE SIDE OF THE TRANSPORTER, PASSED BEHIND THE WHEEL AND OVER THE AXLE OF THE LADING, AND THEN TO A REARWARD TIE DOWN FACILITY ON THE SAME SIDE OF THE TRANSPORTER.
4. IF DESIRED, CHAINS OF A LARGER SIZE THAN SPECIFIED ABOVE MAY BE USED.
5. BEFORE AND DURING INSTALLATION, THE CHAINS AND LOAD BINDERS SHALL BE INSPECTED FOR BENT HOOKS, STRETCH, GOUGES, BENT LINKS, WEAR, AND ANY OTHER NOTICEABLE DEFECTS. ANY DEFICIENCY SHALL BE CAUSE FOR REJECTION OF A CHAIN OR LOAD BINDER. CHAINS MUST NOT BE TWISTED DURING INSTALLATION.
6. THE TENSIONING DEVICE OF EACH LOAD BINDER MUST BE SAFETY-WIRE TIED TO PREVENT ACCIDENTAL OPENING OR LOOSENING IN TRANSIT.
7. ANTI-CHAFING MATERIAL MUST BE PLACED AND SECURED BETWEEN THE CHAINS AND THE LADING AT ALL POINTS OF CONTACT, EXCEPT AT DEFINITIVE TIE DOWN POINTS.
8. FOR TRAILERS EQUIPPED WITH A PNEUMATIC (AIR RIDE) SUSPENSIONS SYSTEM, SEE THE "ADDITIONAL SPECIAL PROVISIONS" ON PAGE 3, WHICH WILL APPLY.