

TECHNICAL MANUAL

**AVIATION UNIT AND INTERMEDIATE
MAINTENANCE MANUAL**

**ARMY MODEL
AH-1P (PROD)
AH-1E (ECAS)
AH-1F (MODERNIZED COBRA)
HELICOPTERS**

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**HEADQUARTERS, DEPARTMENT OF THE ARMY
31 JULY 1990**

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DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 30 April 1992

Aviation Unit and Intermediate
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WASHINGTON, D.C., 1 April 1991

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WARNING

Personnel performing operations, procedures, and practices which are included or implied in this technical manual shall observe the following warnings. Disregard of these warnings and precautionary information can cause serious injury, or death.

Warnings, cautions, and notes are used to emphasize important and critical instructions and shall be used for the following conditions:

WARNING

An operating procedure, practice, etc., which, if not correctly followed, could result in personal injury or loss of life.

CAUTION

An operating procedure, practice, etc., which if not strictly observed, could result in damage to or destruction of equipment.

NOTE

An operating procedure, condition, etc., which it is essential to highlight.

STARTING ENGINE

Starting and Operation
of the helicopter will be performed only by
authorized personnel in accordance with AR 95-1.

HIGH VOLTAGE

The helicopter should be electrically grounded when parked.
Turn off all power switches before making electrical connections or disconnections.
Serious burns and electrical shock can result from contact
with exposed electrical wires or connectors.

RADIATION HAZARD

Self-luminous dials contain radioactive materials.
If such an instrument is broken or becomes unsealed, avoid personal contact.
Use forceps or gloves made of rubber or polyethylene to pick up contaminated material.
Place material and gloves in a plastic bag.
Seal bag and dispose of it as radioactive waste
in accordance with AR 755-15 and TM 3-261 (TB 43-0108).
Repair procedures shall conform to requirements in AR 700-52.

RADIATION HAZARD

Thorium Fluoride

Some of the FLIR optics inside the C-NITE telescopic sight unit (TSU) have a coating that is slightly radioactive.

Accidental inhaling or swallowing of this material is hazardous to health.
If the C-NITE TSU has been ruptured (by crash damage, etc.), dispose of broken optics in accordance with AR 385-11 and TB 750-237.

DANGEROUS CHEMICALS

Exposure to high concentrations of fire extinguishing agents can cause severe irritation of eyes and nose.

Corrosive Battery Electrolyte (Potassium Hydroxide). Wear rubber gloves, apron, and face shield when handling leaking batteries. If potassium hydroxide is spilled on clothing, or other material, wash immediately with clean water. If spilled on personnel, immediately start flushing the affected area with clean water. Continue washing until medical assistance arrives.

Use solvents or chemicals in a well ventilated area.
Do not inhale vapors or allow to come in contact with skin or eyes.
Observe proper fire prevention rules.

LASER LIGHT

The laser beam is dangerous and can cause blindness if it enters the eye either directly or reflected from a shiny surface. Crewmen shall wear approved laser protective visors whenever in controlled area when laser rangefinder or laser target designators are being used. Laser shall be used only in controlled areas by qualified personnel.

NOISE LEVEL

Sound pressure levels in the helicopter during some operating conditions exceed the Surgeon Generals hearing conservation criteria as defined in TB MED 251.

Hearing, protection devices, such as the aviator helmet or ear plugs, are required to be worn by all personnel in and around the helicopter during its operation.

ASBESTOS FIBERS

Avoid creating dust. Breathing asbestos dust may cause serious bodily harm.

ARMAMENT

When working on, or near an armed helicopter, take all possible precautions to avoid accidental firing of armament.
Personnel shall not occupy possible firing pattern in front of or up to 20 feet behind rocket pods.

Munitions shall be handled by authorized personnel only.
All weapons shall be dry-fired. Dummy ammunition shall not be used.

JETTISON

All ground safety pins must be removed before flight. Failure to do so will prevent emergency jettison of stores.

Jettison circuit may be activated with BAT switch OFF and pilot WING STORES JTSN circuit breaker OPEN. For positive deactivation of jettison circuit, open both the PLT JTSN circuit breaker and the GNR JTSN circuit breaker located in the pilot's side console. Serious injury can result from accidental ground jettison.

SANDING DUST

Sanding on reinforced laminated glass produces fine dust that may cause skin irritations. Observed necessary protective measures.

TRANSMISSION LEVELING

Do not attempt to level transmission with "Jacks Only" Hoist must be used in conjunction with jacks while lifting transmission.

EXTERNAL STORES

Prior to any helicopter maintenance functions that require external stores be removed, JETTISON cartridge shall be removed.

Remove jettison cartridges from pylon stores ejection device prior to placing helicopter in a hangar, to prevent injury to personnel and damage to equipment.

Exception: Removal is not necessary when helicopter is to be placed in hangar for short-term, providing both PLT JTSN and GNR JETSJ circuit breakers in the pilot's side console are OPEN, and warning signs indicate that helicopter has an armed jettison system.

CANOPY REMOVAL SYSTEM

Ground safety pins must be installed in pilot and gunner arming firing handles of canopy removal system whenever the helicopter is on the ground. Pins should be installed by crew.

CLEANING HYDRAULIC COMPONENTS

The use of any alcohol in cleaning components which contact hydraulic fluids is prohibited. Formation of a polymeric residue can result, which could impair mechanical operation of the component.

HANDLING HYDRAULIC FLUID (MIL-H-83282)

When handling hydraulic fluid (MIL-H-83282), Table 1-3, Item 61, observe the following:

—Prolonged contact with liquid or mist can irritate eyes and skin.

—After any prolonged contact with skin, immediately wash contacted area with soap and water. If liquid contacts eyes, flush them immediately with clear water.

—If liquid is swallowed, do not induce vomiting; get immediate medical attention.

—Wear rubber gloves when handling liquid. If prolonged contact with mist is likely, wear an appropriate respirator.

—When fluid is decomposed by heating, toxic gases are released.

EPOXY BASED ADHESIVE

Epoxy based adhesive, P/N EA934, contains an asbestos filler which could be inhaled or ingested during grinding, cutting, or sanding operations on cured epoxy material.

TOOLS

Use only chrome plated steel or unplated steel tools for disassembly or reassembly procedures described in this manual.

Use of cadmium or zinc plated tools is not permitted.

GROUNDING

All aircraft parked outside will be grounded and bonded, in accordance with FM 1-500, to the aerospace ground equipment while servicing, i.e., fueling or defueling, arming (ammunition or explosives), oxygen, hydraulic fluids or any flammable liquids. Grounding is not necessary for aircraft parked outside unless one of the above is being accomplished.

INSPECTION OF REMOVED COMPONENTS

When components are being removed from an aircraft, all inspections required by the next phase maintenance inspection must be accomplished prior to either immediate re-use or storage. Upon installation, the component will be inspected in accordance with the current phase (either that phase the receiving aircraft is in or if in between phase, the last phase performed). This will ensure that a re-used component will not overfly any PM inspections, and that it will be properly interfaced with the receiving aircraft phase sequence.

TECHNICAL MANUAL

No. 55-1520-236-23-5

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WASHINGTON, D.C., 31 July 1990

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NOTE

This manual is printed in five volumes, as follows:

TM 55-1520-236-23-1, consisting of Table of Contents, Preface Chapters 1 through 6.

TM 55-1520-236-23-2, consisting of Table of Contents. Chapters 7 through 17. Appendix A through C.

TM 55-1520-236-23-3, consisting of Table of Contents, Appendix D through G, and Index.

TM 55-1520-236-23-4, consisting of Table of Contents, FO-1 thru FO-142.

TM 55-1520-236-23-5, consisting of Table of Contents, FO-143 (Sheet 1 of 28 through Sheet 28 of 28) and FO-144 (Sheet 1 of 6 through Sheet 6 of 6).

The Preface, Appendices and Index are applicable to all volumes.

Technical Manual

No. 55-1520-236-23

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DEPARTMENT OF THE ARMY
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AVIATION UNIT AND INTERMEDIATE MAINTENANCE MANUAL

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REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in back of this manual direct to: Commander, U.S. Army Aviation Systems Command, ATTN: AMSAV-MC, 4300 Goodfellow Blvd., St. Louis, MO 63120-1798. A reply will be furnished to you.

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AND WHAT SHOULD BE DONE ABOUT IT:

In line 6 of paragraph 2-1a the manual states the engine has 6 Cylinders. The engine on my set only has 4 Cylinders. Change the manual to show 4 Cylinders.

Callout 16 on figure 4-3 is pointing at a bolt. In key to figure 4-3, item 16 is called a shim - Please correct one or the other.

I ordered a gasket, item 19 on figure B-16 by NSN 2 910-00-762-3001. I got a gasket but it doesn't fit. Supply says I got what I ordered, so the NSN is wrong. Please give me a good NSN

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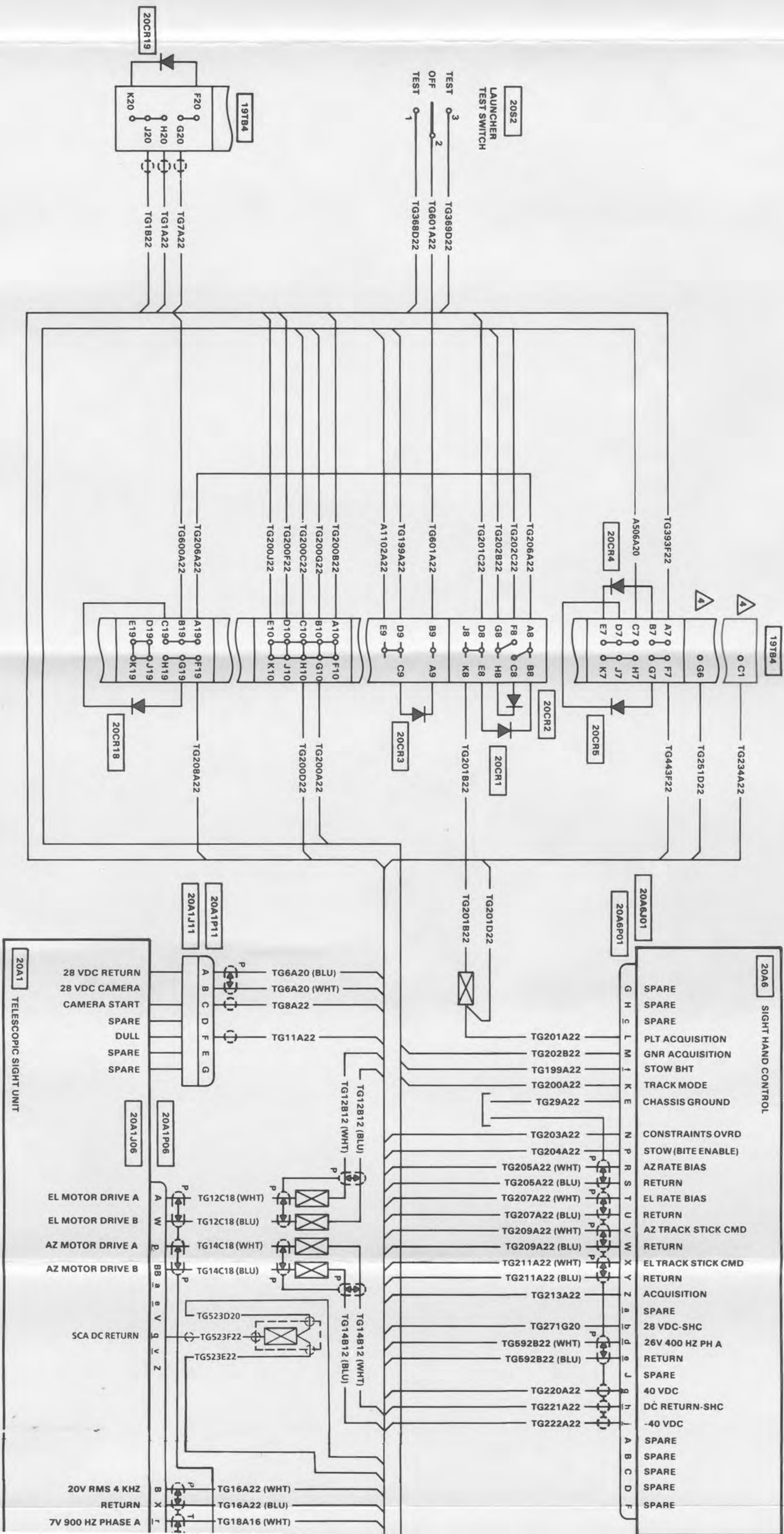
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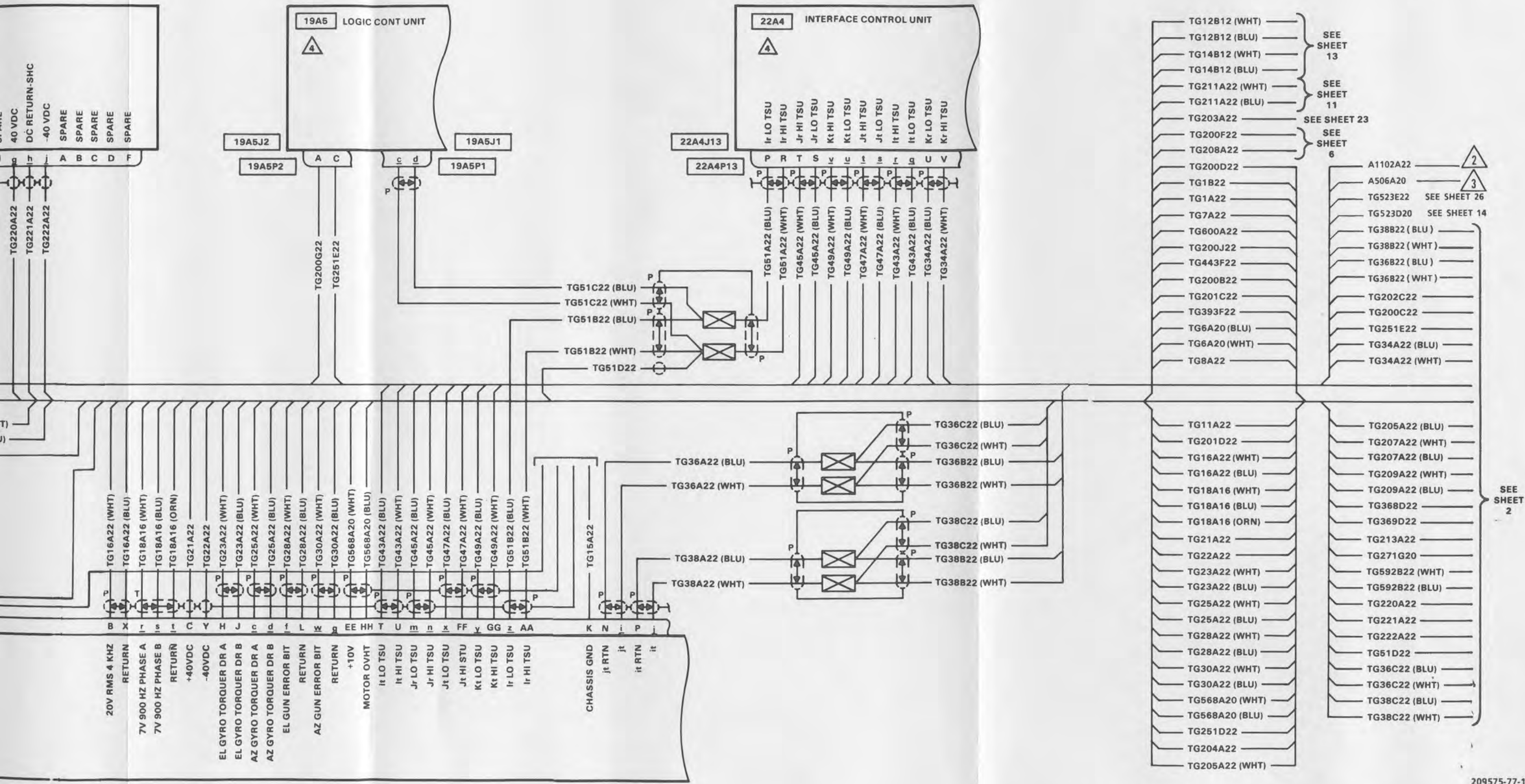
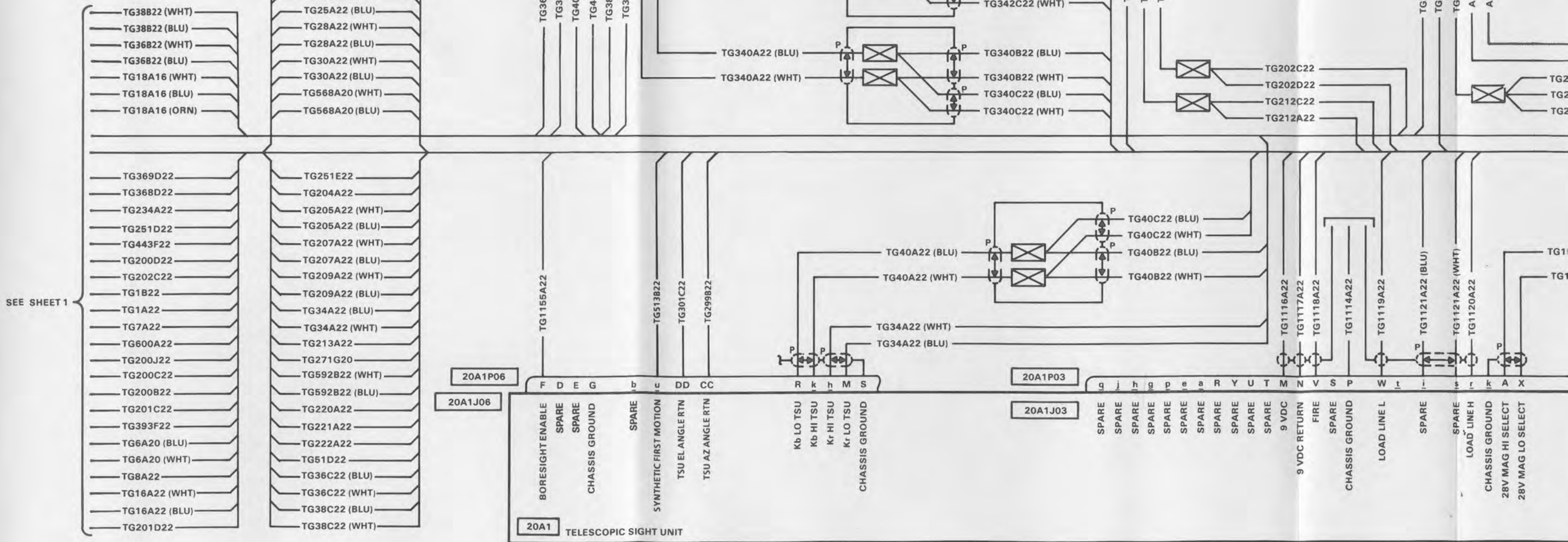


Figure FO-143. MCN TOW Missile Armament Subsystem (Sheet 1 of 28)

NOTES

- 1 REFER TO INTERIOR LIGHTS SYSTEM WIRING DIAGRAM.
- 2 REFER TO MCN FIRE CONTROL SYSTEM WIRING DIAGRAM.
- 3 REFER TO WING STORES SYSTEM WIRING DIAGRAM.
- 4 REFER TO TURRET SYSTEM WIRING DIAGRAM.
- 5 REFER TO HYDRAULIC CONTROL SYSTEM WIRING DIAGRAM.
- 6 REFER TO DC POWER AND INTER-CONNECT LOGIC WIRING DIAGRAM.
- 7 REFER TO TM11-1520-236 SERIES MANUALS.
- 8 REFER TO AC POWER SYSTEM WIRING DIAGRAM.
- 9 REFER TO TOW MISSILE ARMAMENT SUBSYSTEM WIRING DIAGRAM.



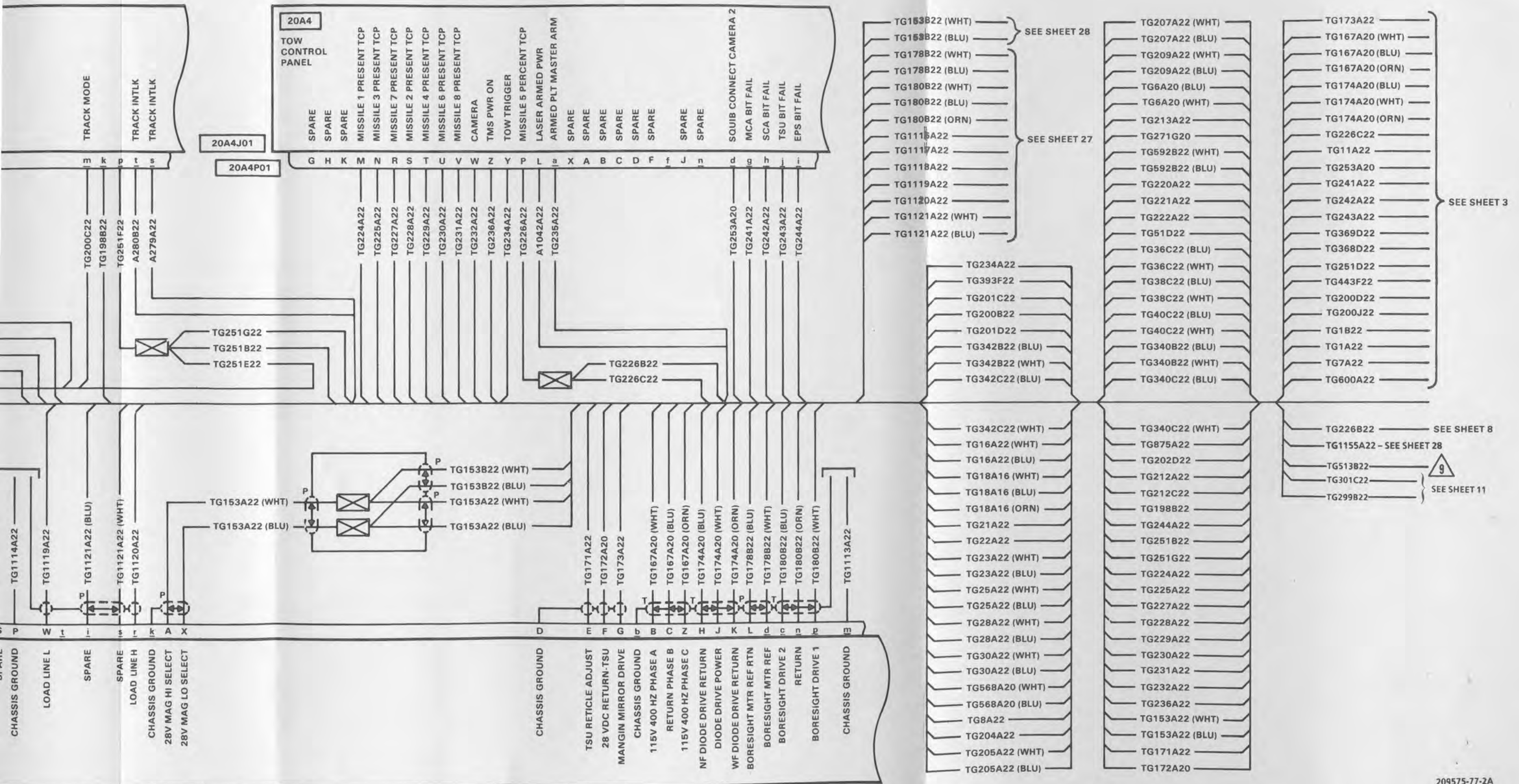
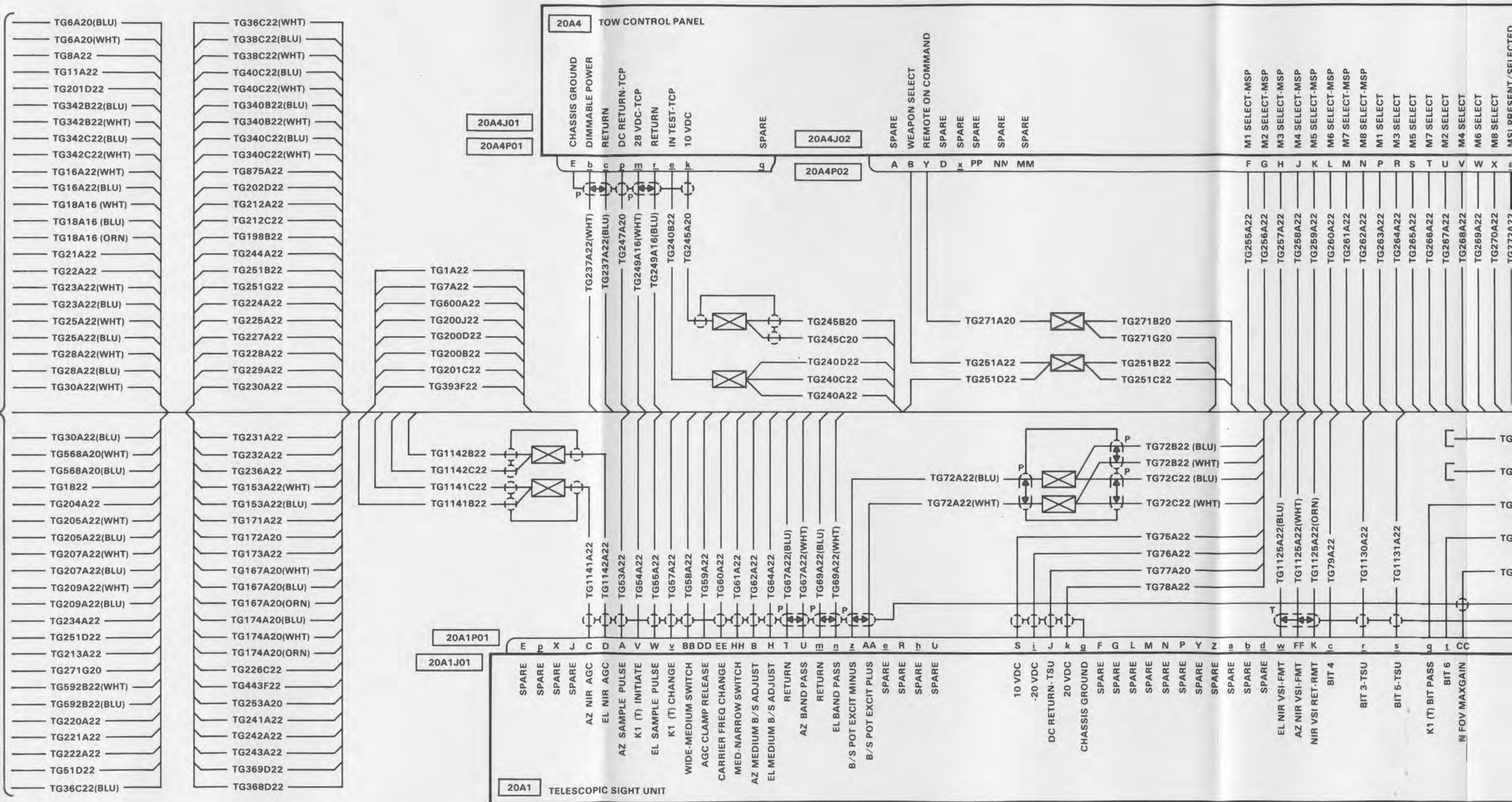


Figure FO-143. **MCN** TOW Missile Armament Subsystem (Sheet 2 of 28)



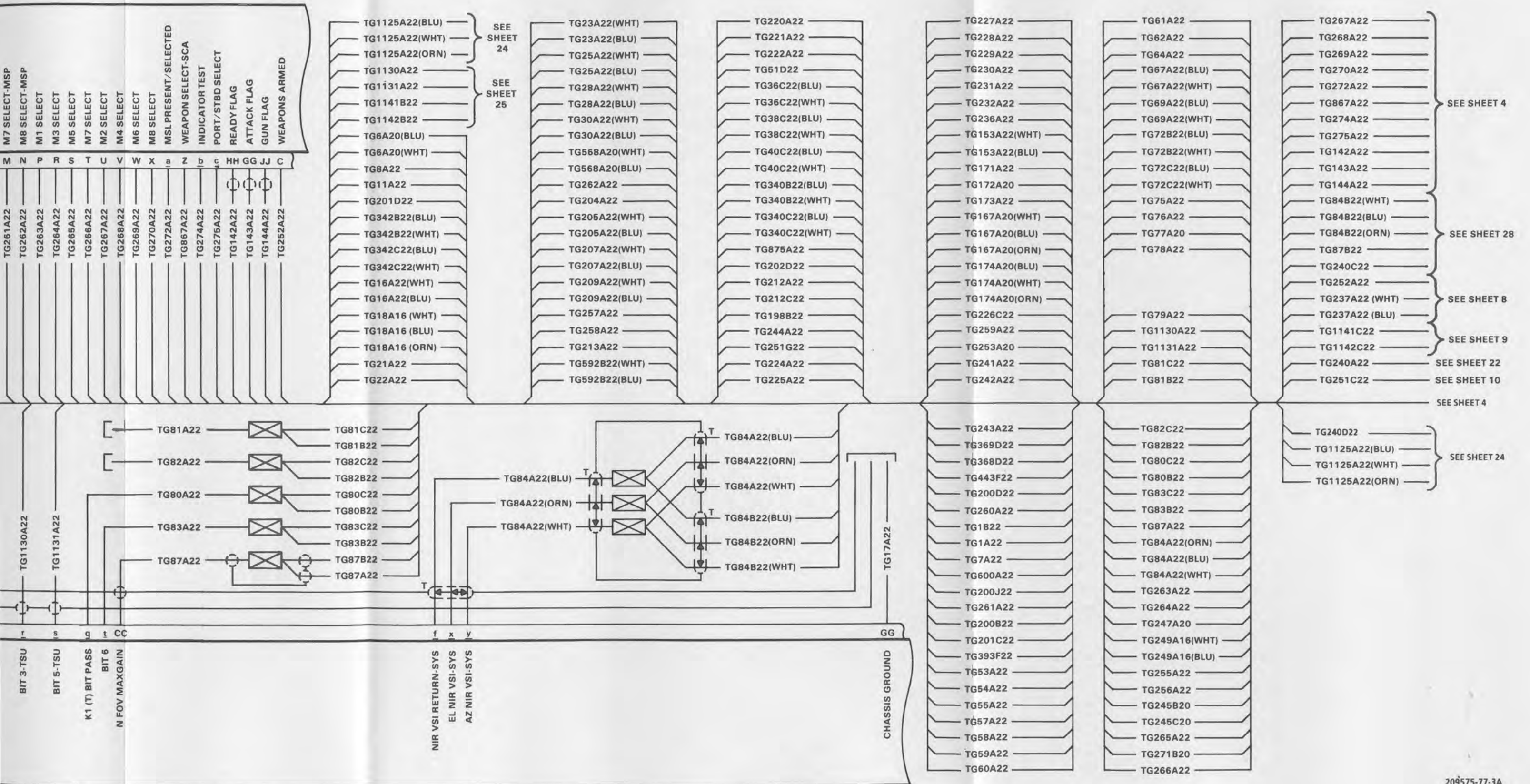
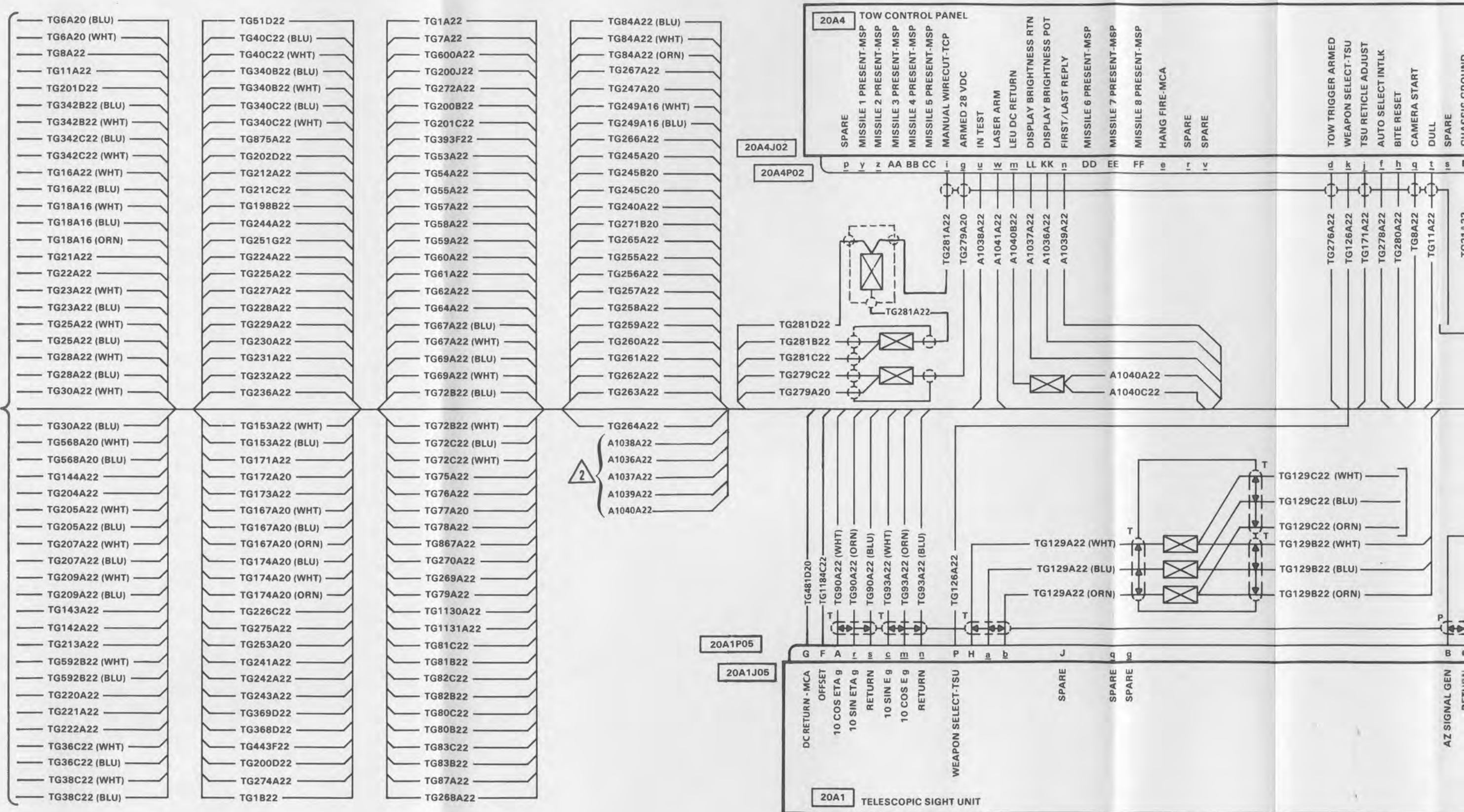


Figure FO-143. MCN TOW Missile Armament Subsystem (Sheet 3 of 28)

SEE SHEET 3



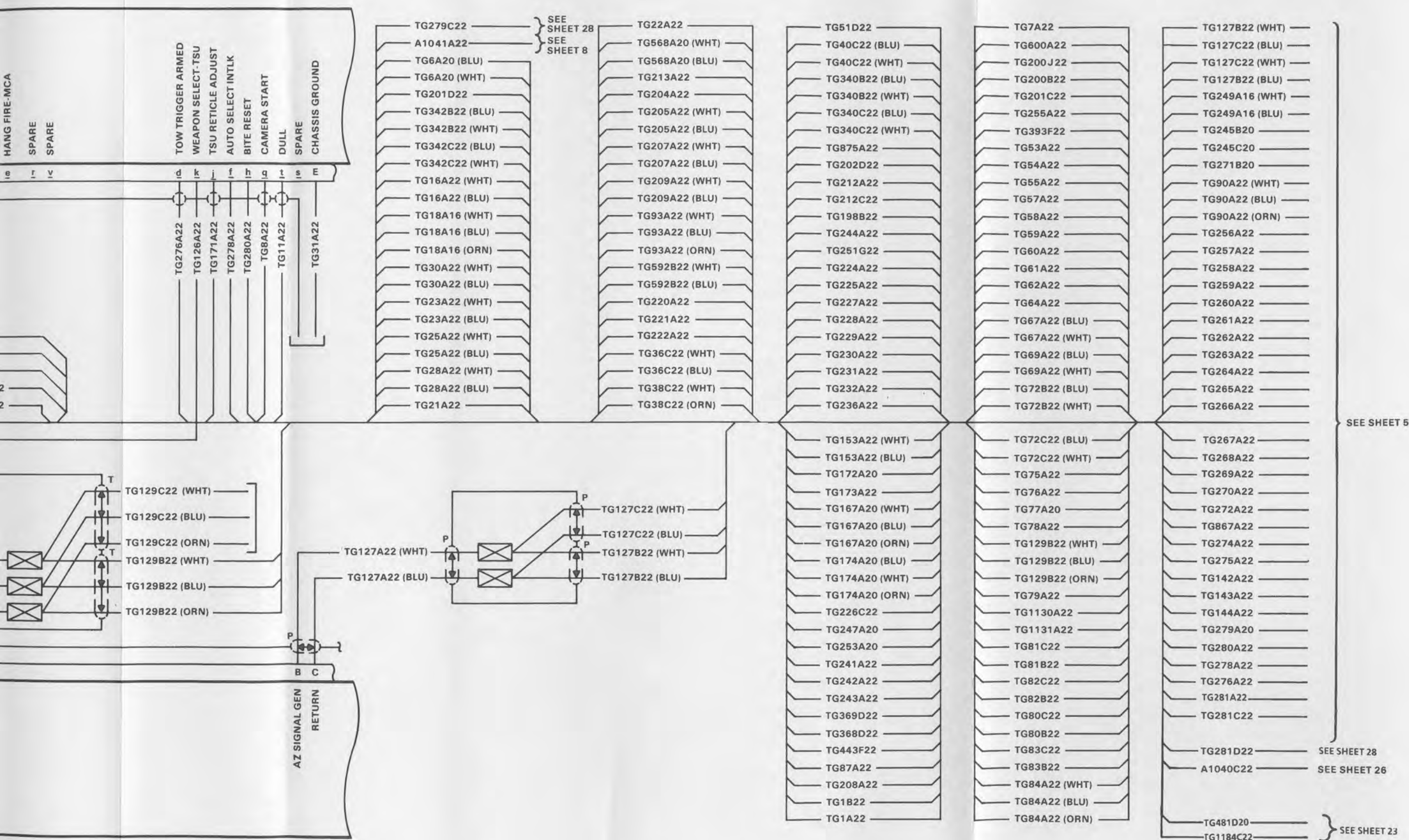
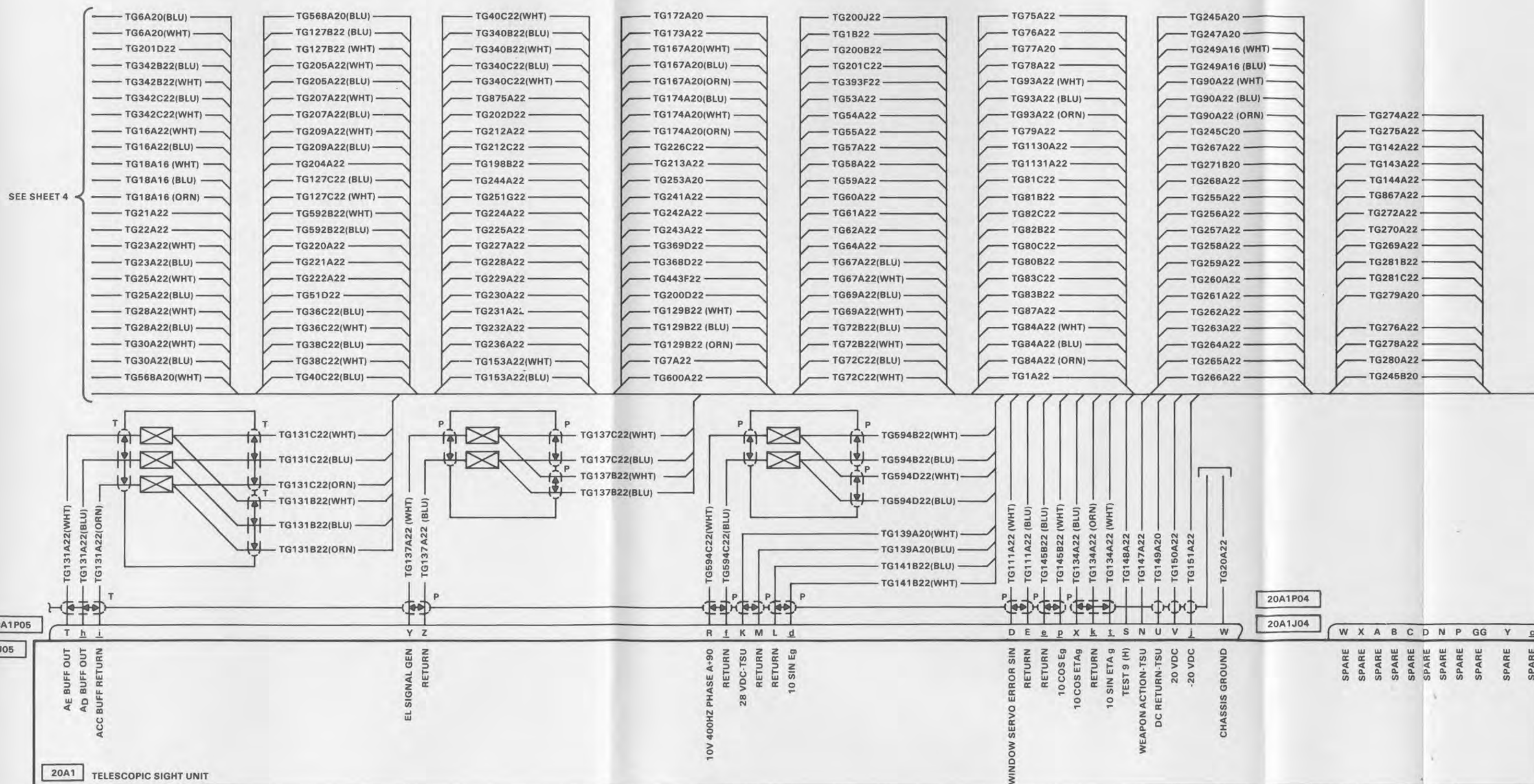


Figure FO-143. MCN TOW Missile Armament Subsystem (Sheet 4 of 28)



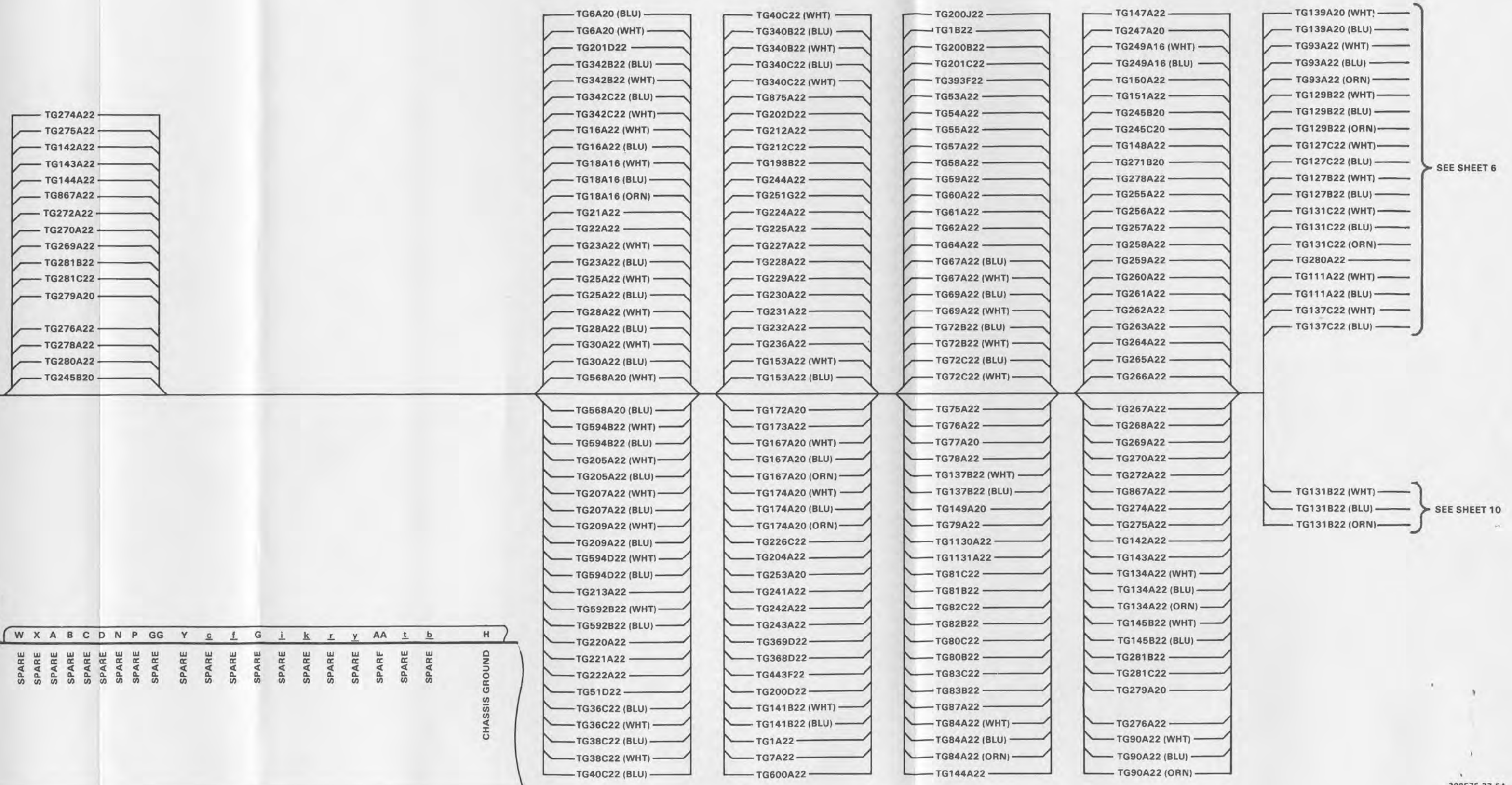


Figure FO-143. MCN TOW Missile Armament Subsystem (Sheet 5 of 28)

SEE
SHEET
1

TG200F22
TG208A22
TG201D22
TG342B22 (BLU)
TG342B22 (WHT)
TG342C22 (BLU)
TG342C22 (WHT)
TG16A22 (WHT)
TG16A22 (BLU)
TG18A16 (WHT)
TG18A16 (BLU)
TG18A16 (ORN)
TG21A22
TG22A22
TG23A22 (WHT)
TG23A22 (BLU)
TG25A22 (WHT)
TG25A22 (BLU)
TG28A22 (WHT)
TG28A22 (BLU)
TG30A22 (WHT)
TG30A22 (BLU)
TG568A20 (WHT)

SEE
SHEET
5

TG568A20 (BLU)
TG253A20
TG204A22
TG205A22 (WHT)
TG205A22 (BLU)
TG207A22 (WHT)
TG207A22 (BLU)
TG209A22 (WHT)
TG209A22 (BLU)
TG6A20 (WHT)
TG6A20 (BLU)
TG213A22
TG592B22 (WHT)
TG592B22 (BLU)
TG220A22
TG221A22
TG222A22
TG51D22
TG36C22 (WHT)
TG36C22 (BLU)
TG38C22 (WHT)
TG38C22 (BLU)
TG40C22 (WHT)

TG40C22 (BLU)
TG340B22 (BLU)
TG340B22 (WHT)
TG340C22 (BLU)
TG340C22 (WHT)
TG875A22
TG202D22
TG212A22
TG212C22
TG198B22
TG244A22
TG251G22
TG224A22
TG225A22
TG227A22
TG228A22
TG229A22
TG230A22
TG231A22
TG232A22
TG236A22
TG153A22 (WHT)
TG153A22 (BLU)

TG172A20
TG173A22
TG167A20 (WHT)
TG167A20 (BLU)
TG167A20 (ORN)
TG174A20 (BLU)
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TG174A20 (ORN)
TG226C22
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TG241A22
TG242A22
TG243A22
TG369D22
TG368D22
TG443F22
TG200D22
TG150A22
TG1B22
TG1A22
TG7A22
TG600A22

TG200J22
TG149A22
TG200B22
TG201C22
TG393F22
TG53A22
TG54A22
TG55A22
TG57A22
TG58A22
TG59A22
TG60A22
TG61A22
TG62A22
TG64A22
TG67A22 (BLU)
TG67A22 (WHT)
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TG72C22 (BLU)
TG72C22 (WHT)

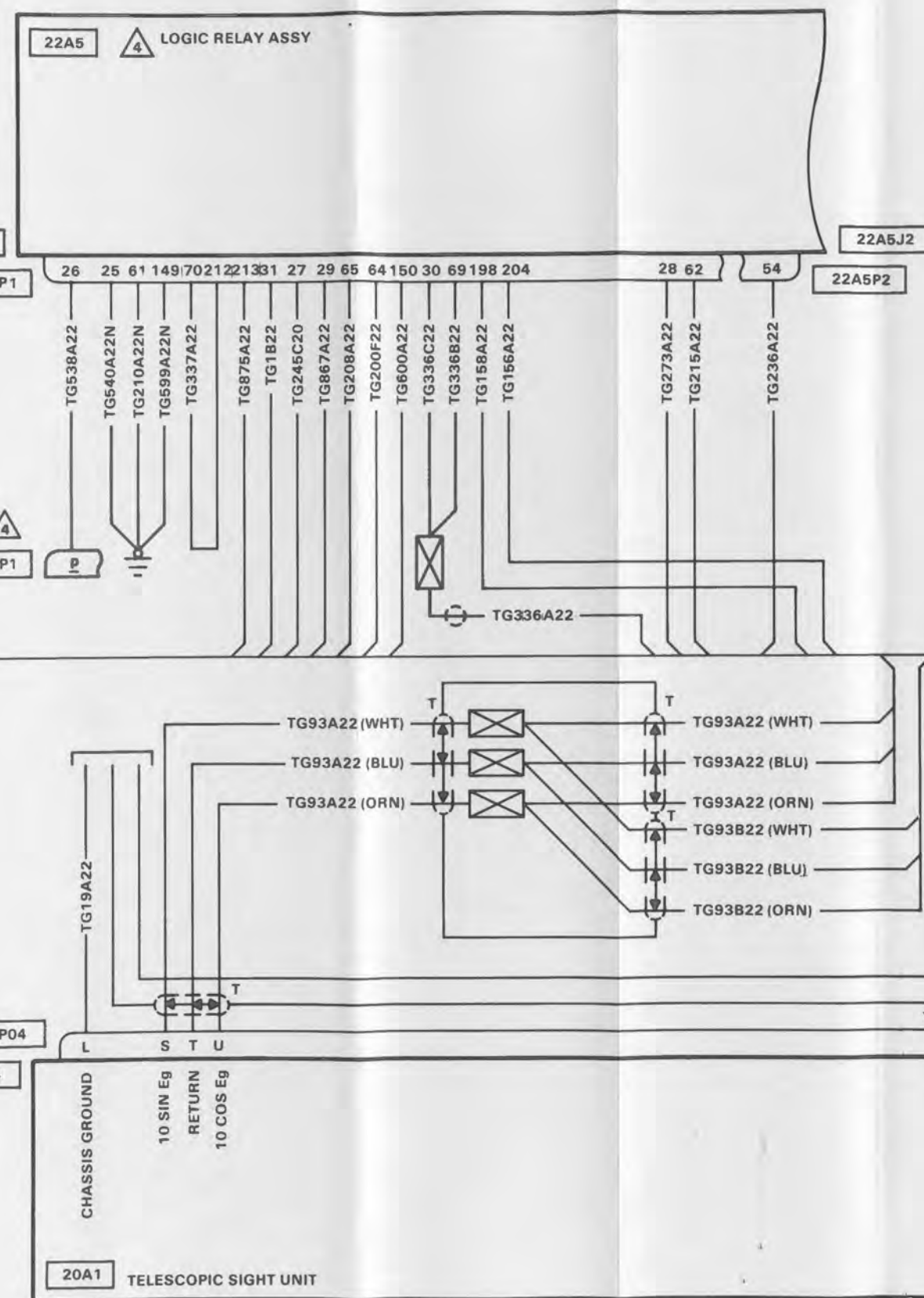
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TG148A22
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TG1131A22
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TG81B22
TG82C22
TG82B22
TG80C22
TG80B22
TG83C22
TG83B22
TG87A22
TG84A22 (WHT)
TG84A22 (BLU)
TG84A22 (ORN)
TG144A22

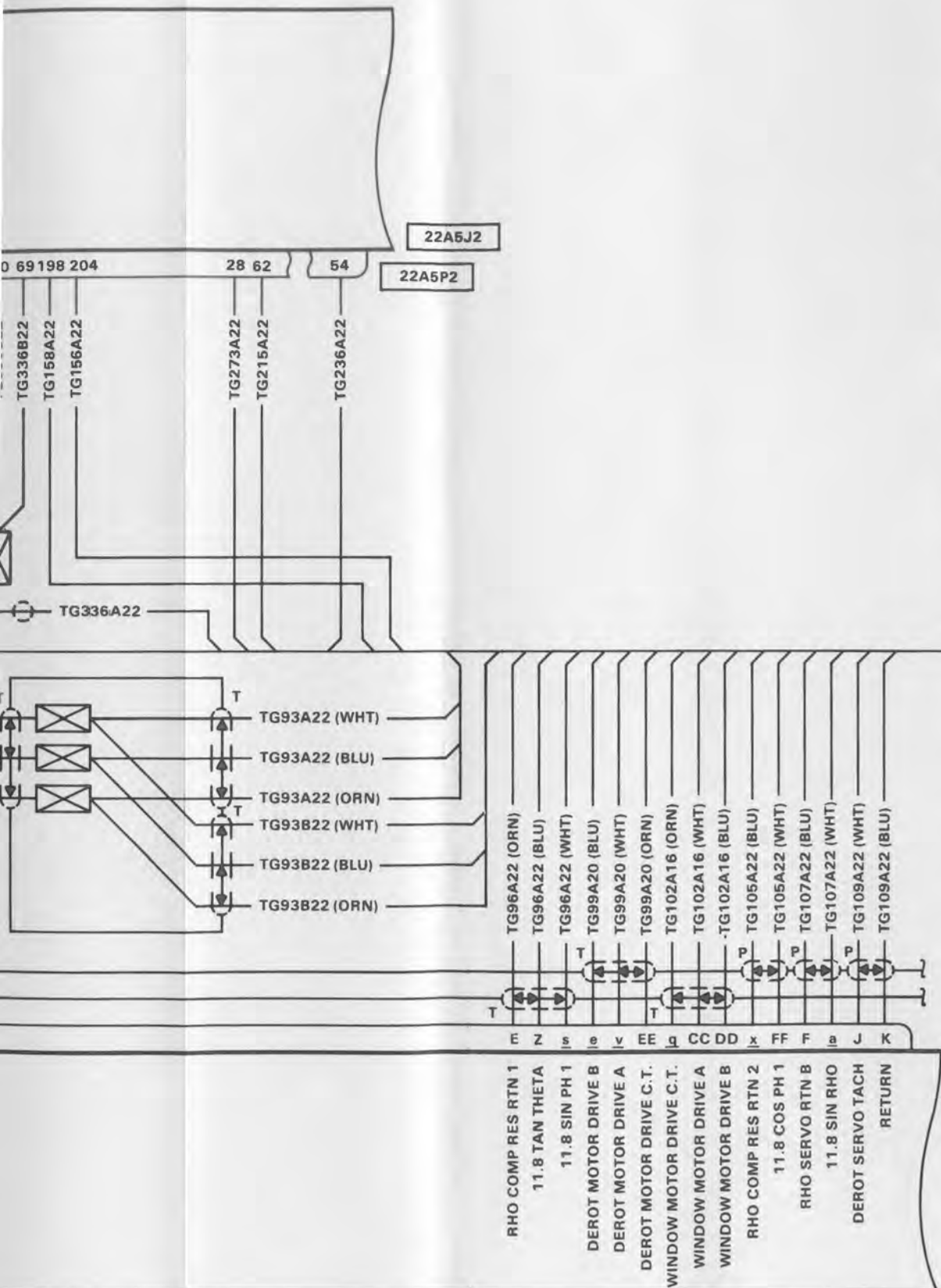
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TG249A16 (BLU)
TG151A22
TG245A20
TG245B20
TG245C20
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TG141B22 (BLU)
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TG134A22 (BLU)
TG134A22 (ORN)
TG257A22
TG258A22
TG259A22
TG260A22
TG261A22
TG262A22
TG263A22
TG264A22
TG265A22
TG266A22

TG267A22
TG268A22
TG269A22
TG270A22
TG272A22
TG867A22
TG274A22
TG275A22
TG142A22
TG594B22 (WHT)
TG594B22 (BLU)
TG145B22 (BLU)
TG145B22 (WHT)
TG276A22
TG281D22
TG281B22
TG281C22
TG279A20
TG111A22 (WHT)
TG111A22 (BLU)
TG278A22
TG280A22
TG90A22 (WHT)

TG90A22 (BLU)
TG90A22 (ORN)
TG93A22 (WHT)
TG93A22 (BLU)
TG93A22 (ORN)
TG129B22 (WHT)
TG129B22 (BLU)
TG129B22 (ORN)
TG127C22 (WHT)
TG127C22 (BLU)
TG127B22 (WHT)
TG127B22 (BLU)
TG131C22 (WHT)
TG131C22 (BLU)
TG131C22 (ORN)
TG271B20
TG139A20 (WHT)
TG139A20 (BLU)
TG137C22 (WHT)
TG137C22 (BLU)
TG137B22 (WHT)
TG137B22 (BLU)
TG143A22

TG594D22 (WHT)
TG594D22 (BLU)



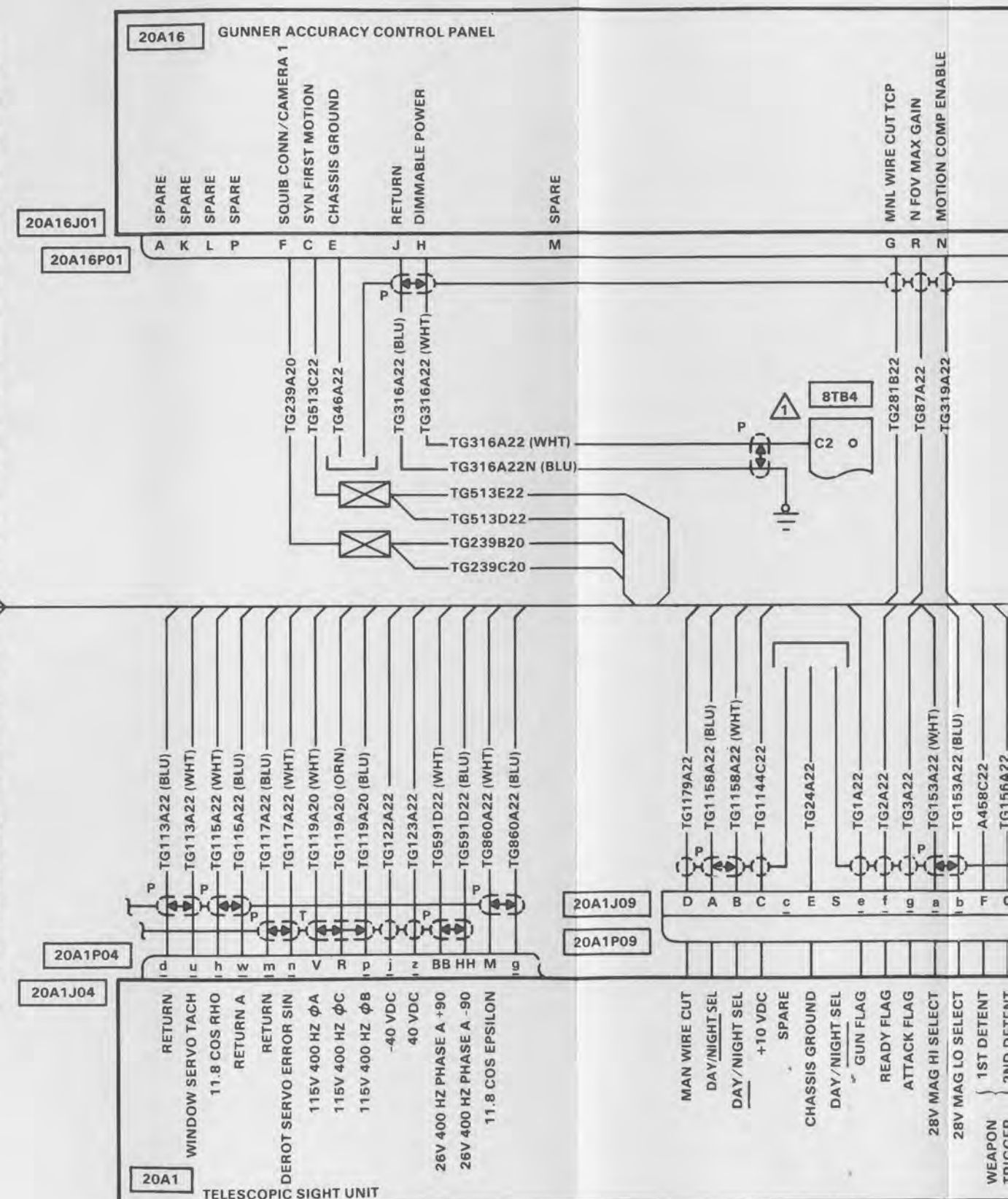
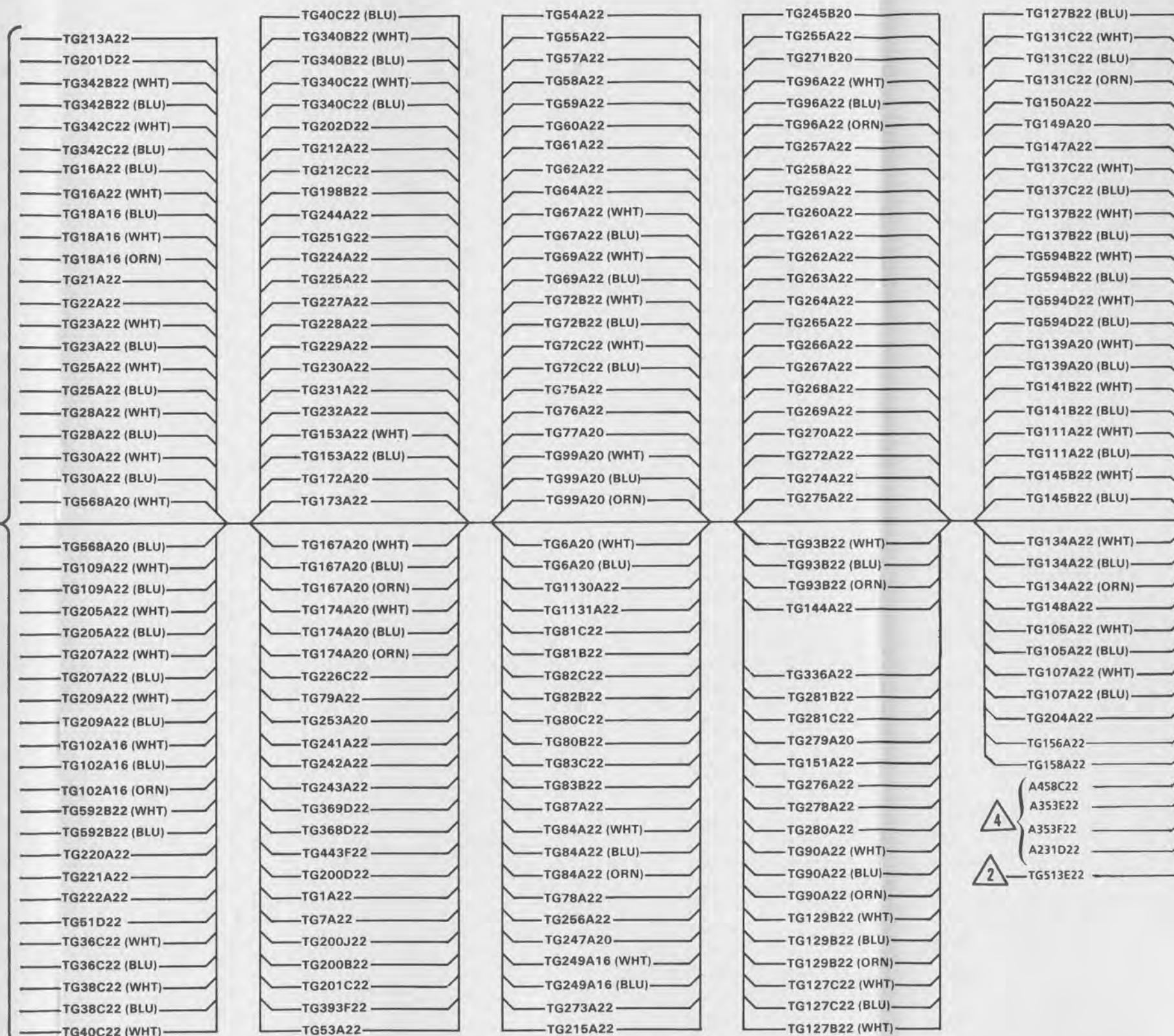


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TG201D22	TG340B22 (BLU)	TG57A22	TG255A22	TG93B22 (ORN)
TG342B22 (BLU)	TG340C22 (WHT)	TG58A22	TG256A22	TG96A22 (WHT)
TG342B22 (WHT)	TG340C22 (BLU)	TG59A22	TG257A22	TG96A22 (BLU)
TG342C22 (BLU)	TG202D22	TG60A22	TG258A22	TG96A22 (ORN)
TG342C22 (WHT)	TG212A22	TG61A22	TG259A22	TG99A20 (WHT)
TG16A22 (BLU)	TG212C22	TG62A22	TG260A22	TG99A20 (BLU)
TG16A22 (WHT)	TG198B22	TG64A22	TG261A22	TG99A20 (ORN)
TG18A16 (BLU)	TG244A22	TG67A22 (WHT)	TG262A22	TG102A16 (WHT)
TG18A16 (WHT)	TG251G22	TG67A22 (BLU)	TG263A22	TG102A16 (BLU)
TG18A16 (ORN)	TG224A22	TG69A22 (WHT)	TG264A22	TG102A16 (ORN)
TG21A22	TG225A22	TG69A22 (BLU)	TG265A22	TG105A22 (WHT)
TG22A22	TG227A22	TG72B22 (WHT)	TG266A22	TG105A22 (BLU)
TG23A22 (WHT)	TG228A22	TG72B22 (BLU)	TG267A22	TG253A20
TG23A22 (BLU)	TG229A22	TG72C22 (WHT)	TG268A22	TG141B22 (WHT)
TG25A22 (WHT)	TG230A22	TG72C22 (BLU)	TG269A22	TG141B22 (BLU)
TG25A22 (BLU)	TG231A22	TG75A22	TG270A22	TG111A22 (WHT)
TG28A22 (WHT)	TG232A22	TG76A22	TG272A22	TG111A22 (BLU)
TG28A22 (BLU)	TG153A22 (WHT)	TG77A20	TG274A22	TG145B22 (WHT)
TG30A22 (WHT)	TG153A22 (BLU)	TG131C22 (WHT)	TG275A22	TG145B22 (BLU)
TG30A22 (BLU)	TG172A20	TG131C22 (BLU)	TG142A22	TG134A22 (WHT)
TG568A20 (WHT)	TG173A22	TG131C22 (ORN)	TG143A22	TG134A22 (BLU)
TG568A20 (BLU)	TG167A20 (WHT)	TG137B22 (WHT)	TG594B22 (WHT)	TG134A22 (ORN)
TG107A22 (WHT)	TG167A20 (BLU)	TG137B22 (BLU)	TG594B22 (BLU)	TG148A22
TG107A22 (BLU)	TG167A20 (ORN)	TG1130A22	TG594D22 (WHT)	TG147A22
TG205A22 (WHT)	TG174A20 (WHT)	TG1131A22	TG594D22 (BLU)	TG149A20
TG205A22 (BLU)	TG174A20 (BLU)	TG81C22	TG78A22	TG150A22
TG207A22 (WHT)	TG174A20 (ORN)	TG81B22	TG281B22	TG151A22
TG207A22 (BLU)	TG226C22	TG82C22	TG281C22	TG336A22
TG209A22 (WHT)	TG109A22 (BLU)	TG82B22	TG279A20	TG273A22
TG209A22 (BLU)	TG109A22 (WHT)	TG80C22	TG276A22	TG215A22
TG139A20 (WHT)	TG241A22	TG80B22	TG278A22	TG158A22
TG139A20 (BLU)	TG242A22	TG83C22	TG280A22	TG156A22
TG213A22	TG243A22	TG83B22	TG90A22 (WHT)	
TG592B22 (WHT)	TG369D22	TG87A22	TG90A22 (BLU)	
TG592B22 (BLU)	TG368D22	TG84A22 (WHT)	TG90A22 (ORN)	
TG220A22	TG443F22	TG84A22 (BLU)	TG129B22 (WHT)	
TG221A22	TG200D22	TG84A22 (ORN)	TG129B22 (BLU)	
TG222A22	TG1A22	TG137C22 (WHT)	TG129B22 (ORN)	
TG51D22	TG7A22	TG137C22 (BLU)	TG127C22 (WHT)	
TG36C22 (WHT)	TG200J22	TG247A20	TG127C22 (BLU)	
TG36C22 (BLU)	TG200B22	TG249A16 (WHT)	TG127B22 (WHT)	
TG38C22 (WHT)	TG201C22	TG249A16 (BLU)	TG127B22 (BLU)	
TG36C22 (BLU)	TG393F22	TG245B20		
TG40C22 (WHT)	TG53A22	TG79A22		

SEE
SHEET
7

Figure FO-143. MCN TOW Missile Armament Subsystem (Sheet 6 of 28)

SEE
SHEET
6



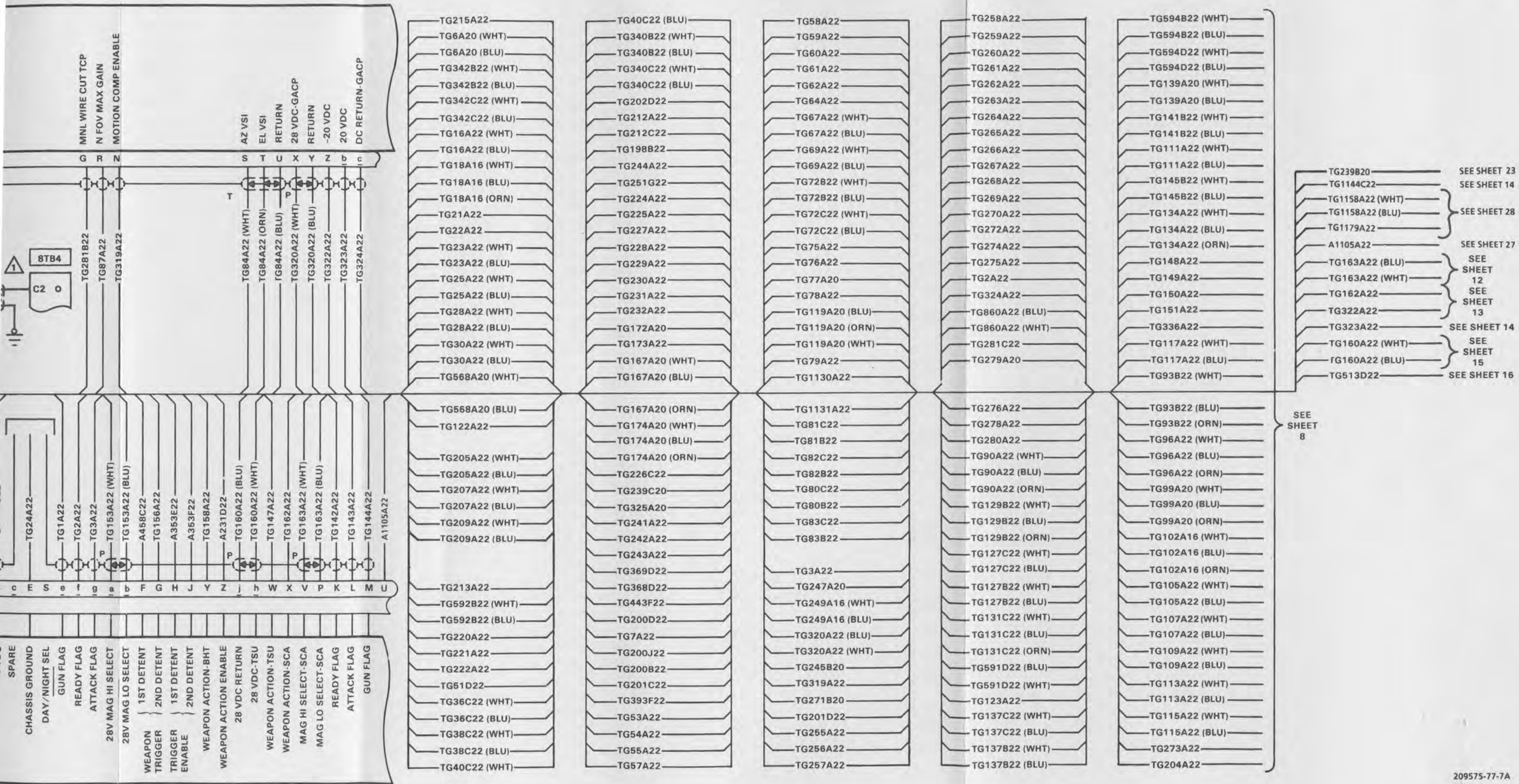
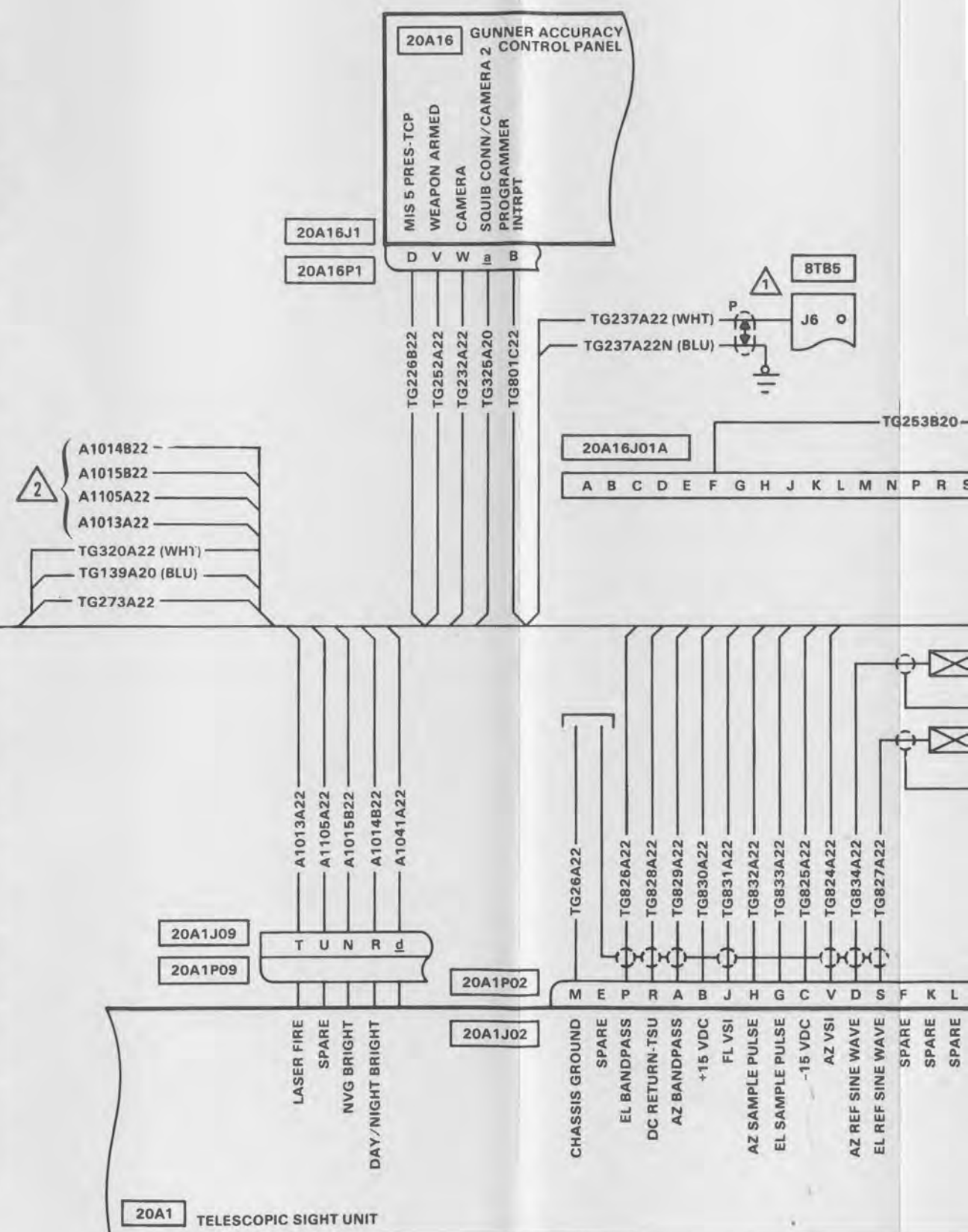
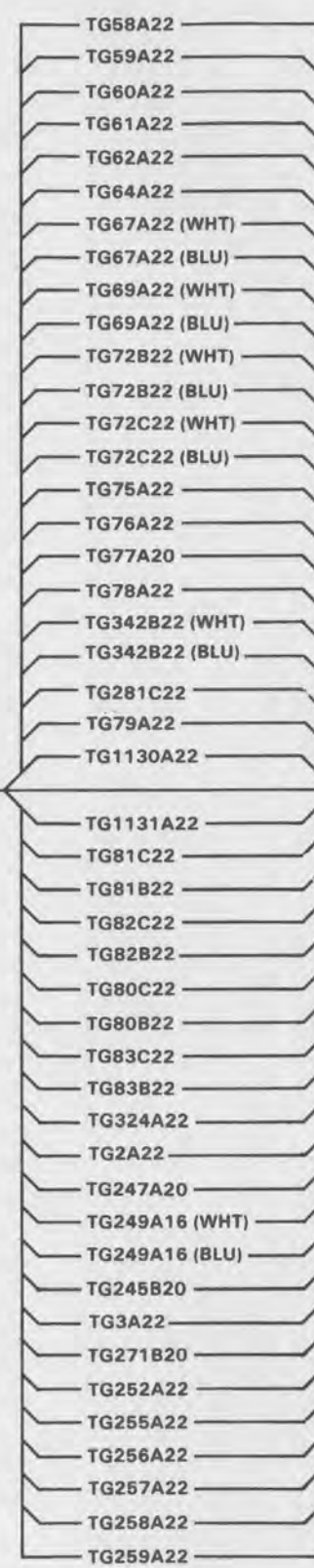
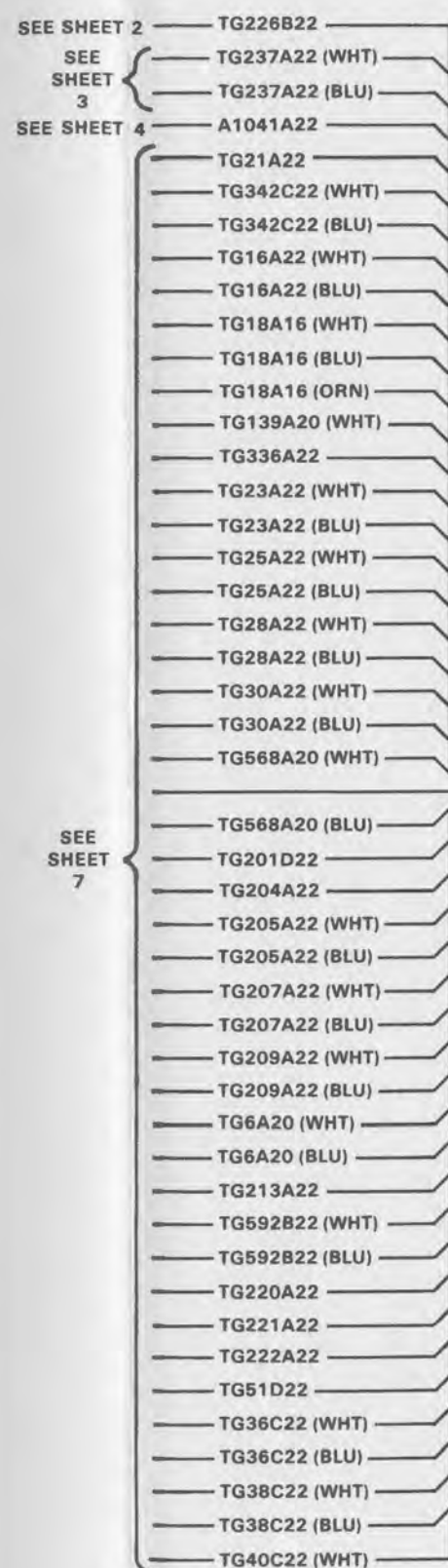


Figure FO-143. MCN TOW Missile Armament Subsystem (Sheet 7 of 28)



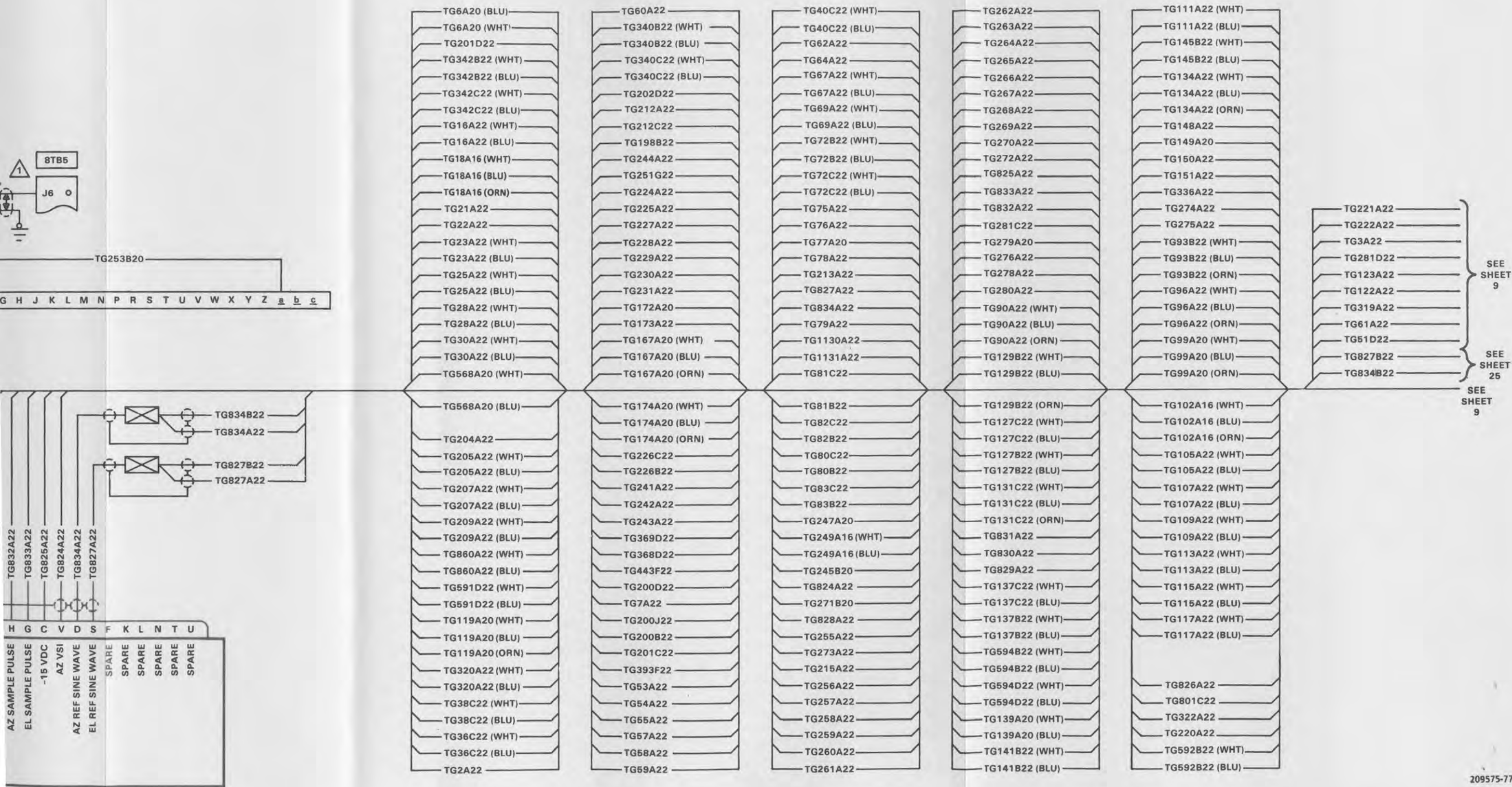
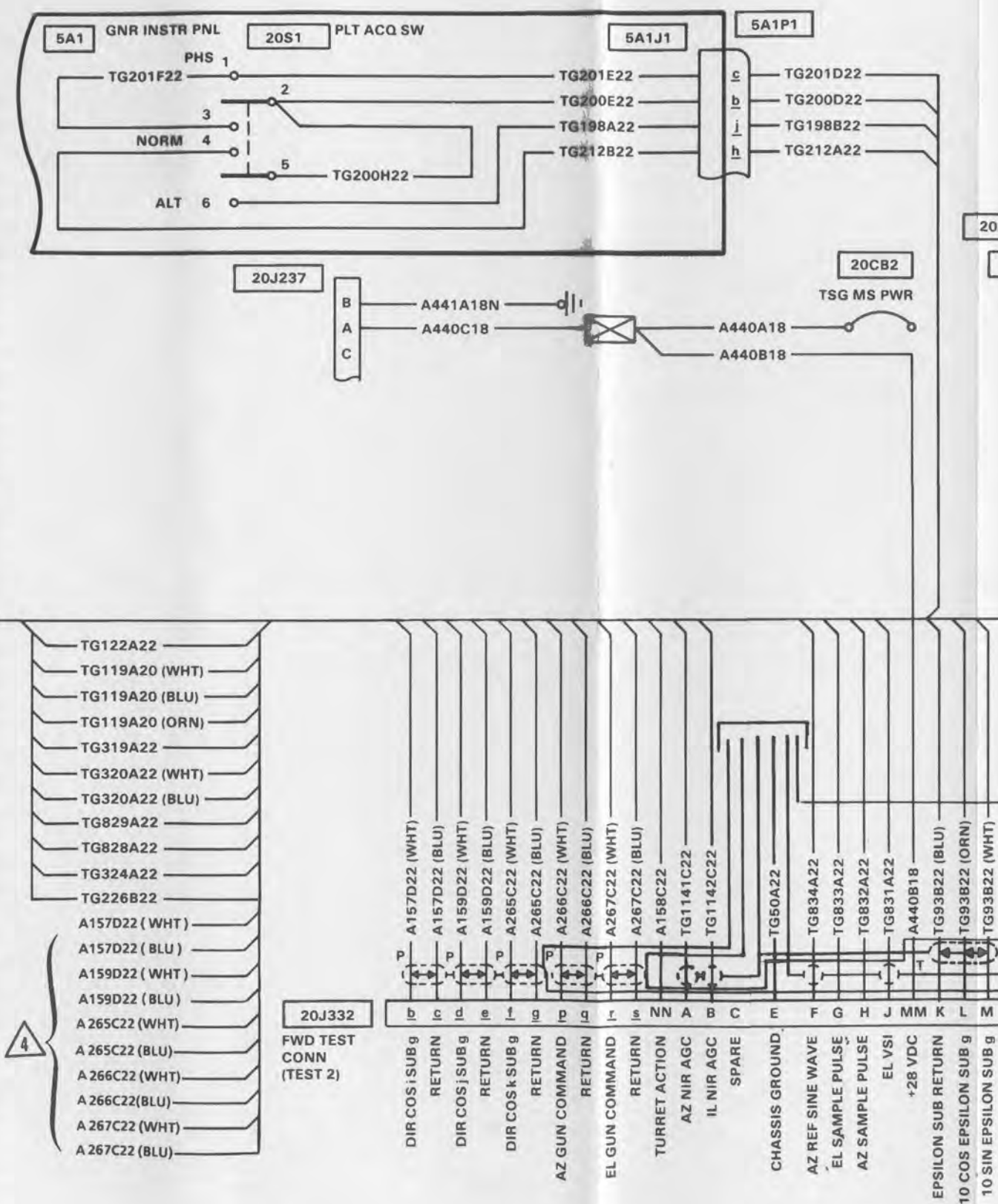
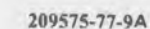


Figure FO-143. MCN TOW Missile Armament Subsystem (Sheet 8 of 28)

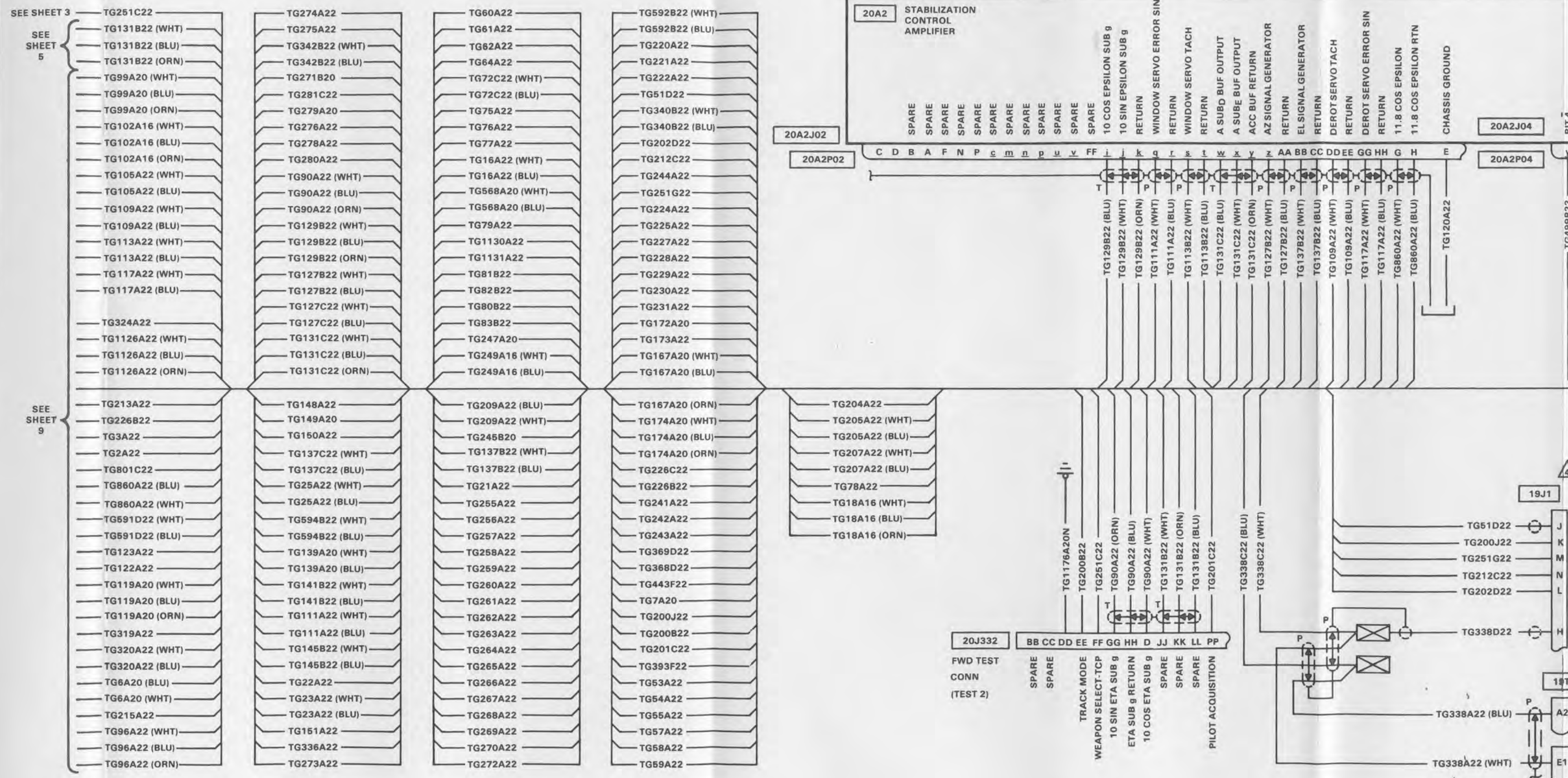
SEE
SHEET
3

SEE
SHEET
8





FO-159/(FO-160 Blank)



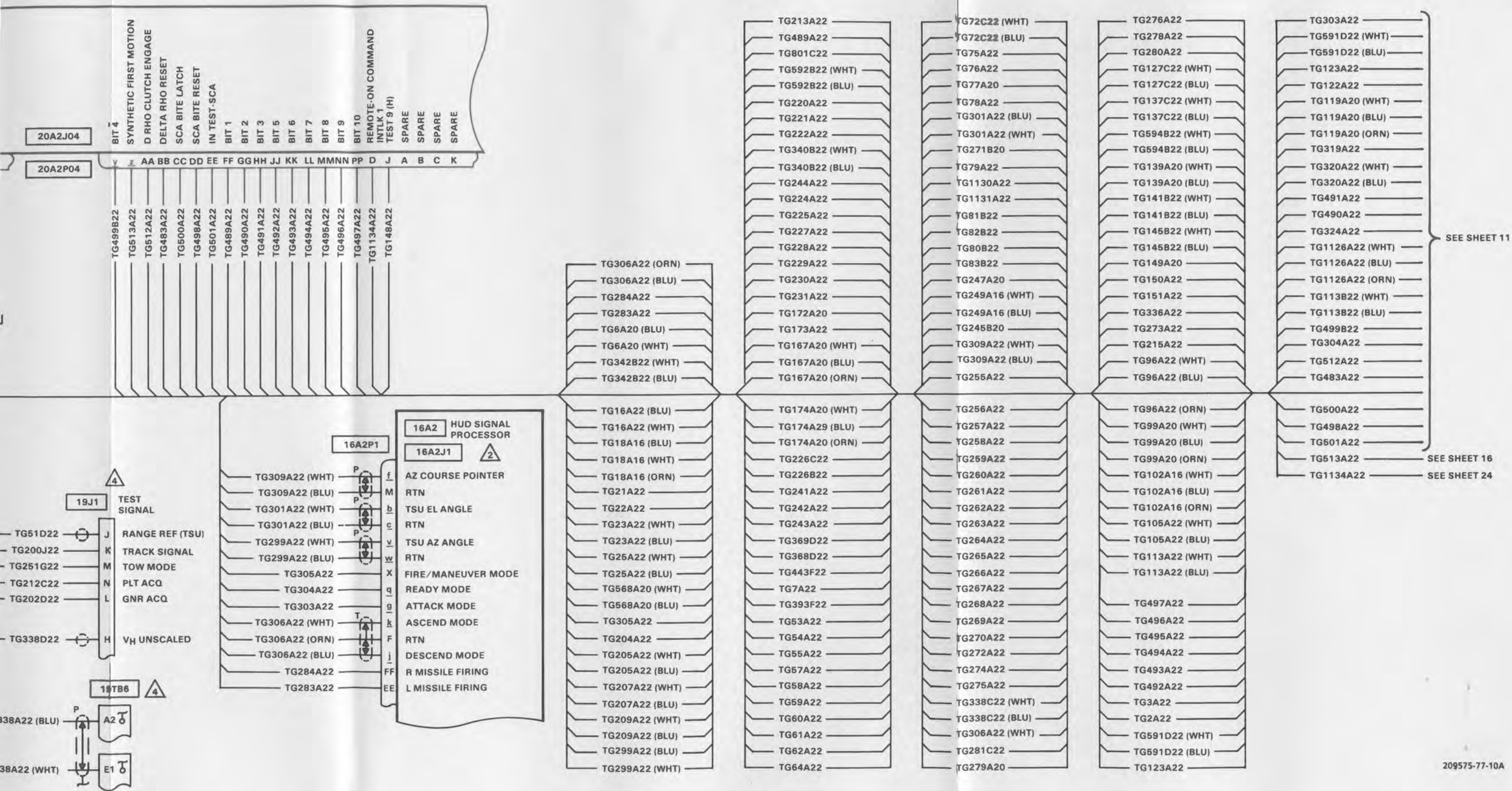
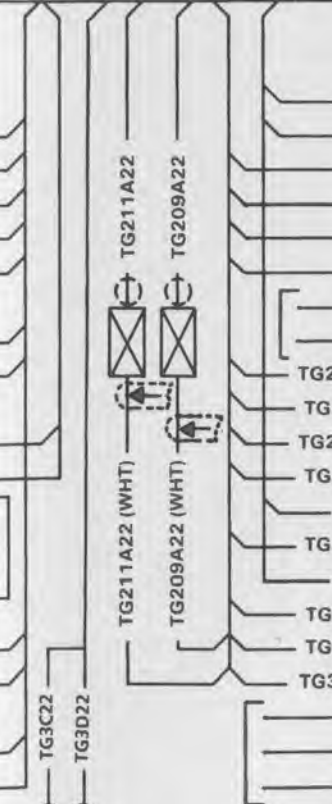
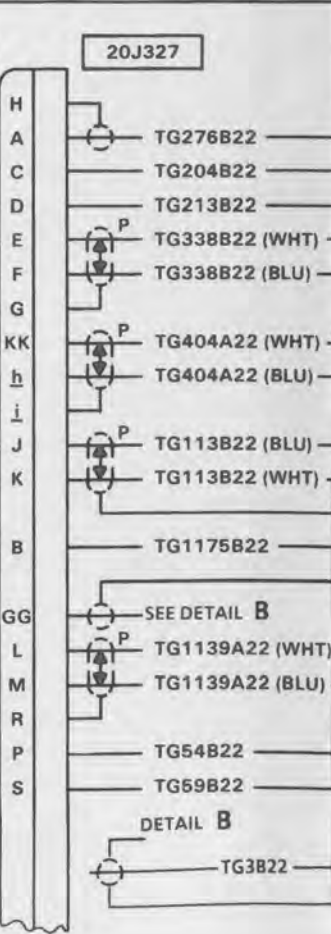
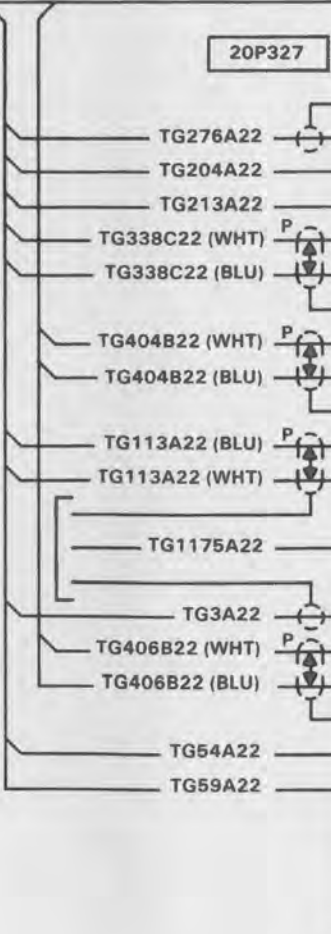
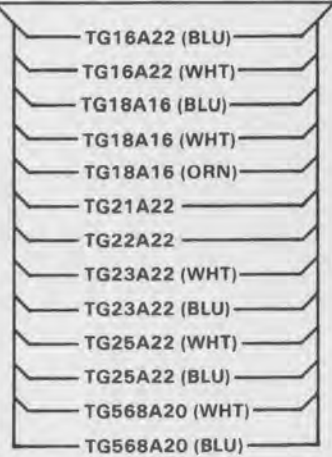
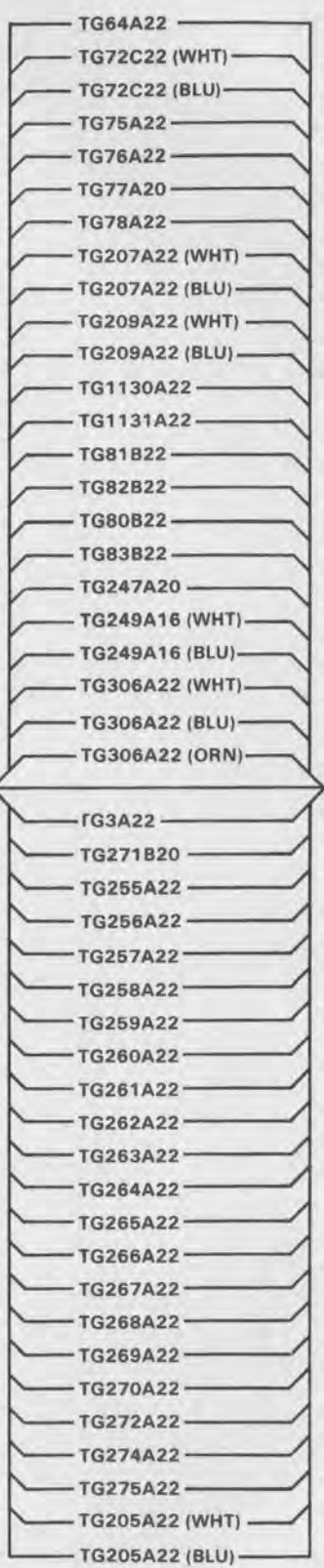
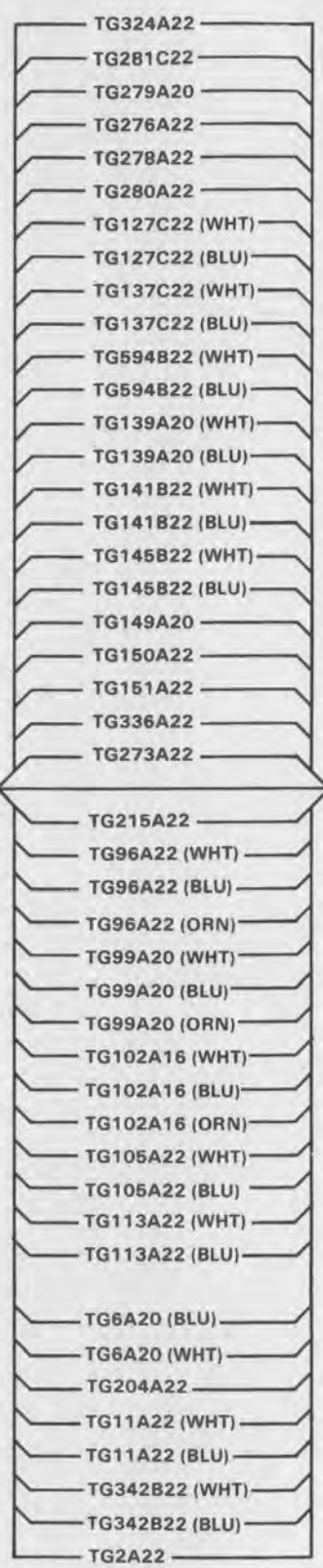
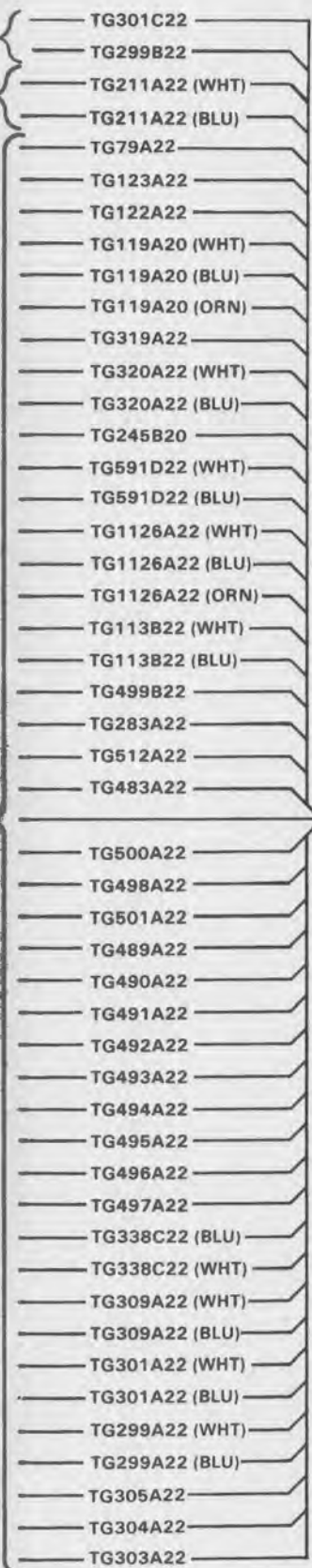


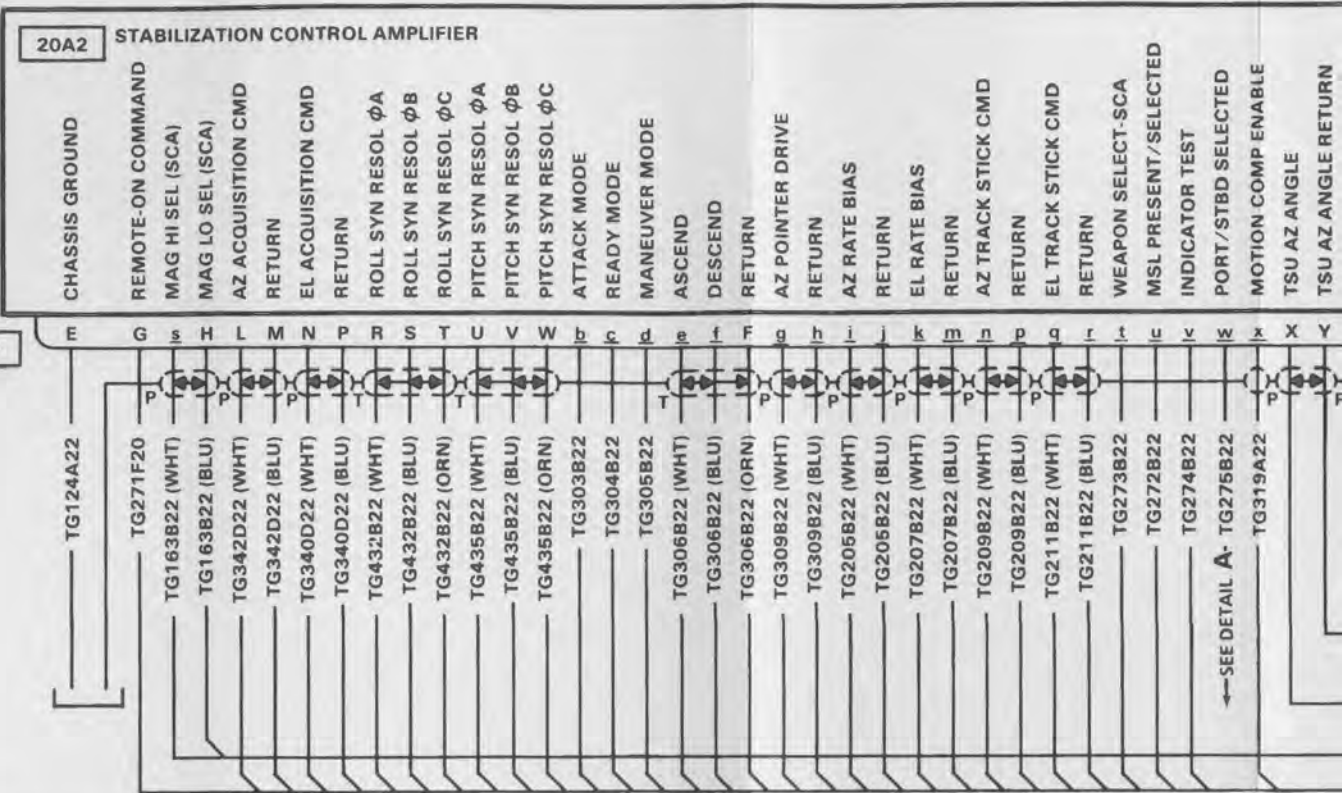
Figure FO-143. MCN TOW Missile Armament Subsystem (Sheet 10 of 28)

SEE SHEET 2
SEE SHEET 1

SEE SHEET 10



20A2J04
20A2P04



SEE DETAIL A

DETAIL B

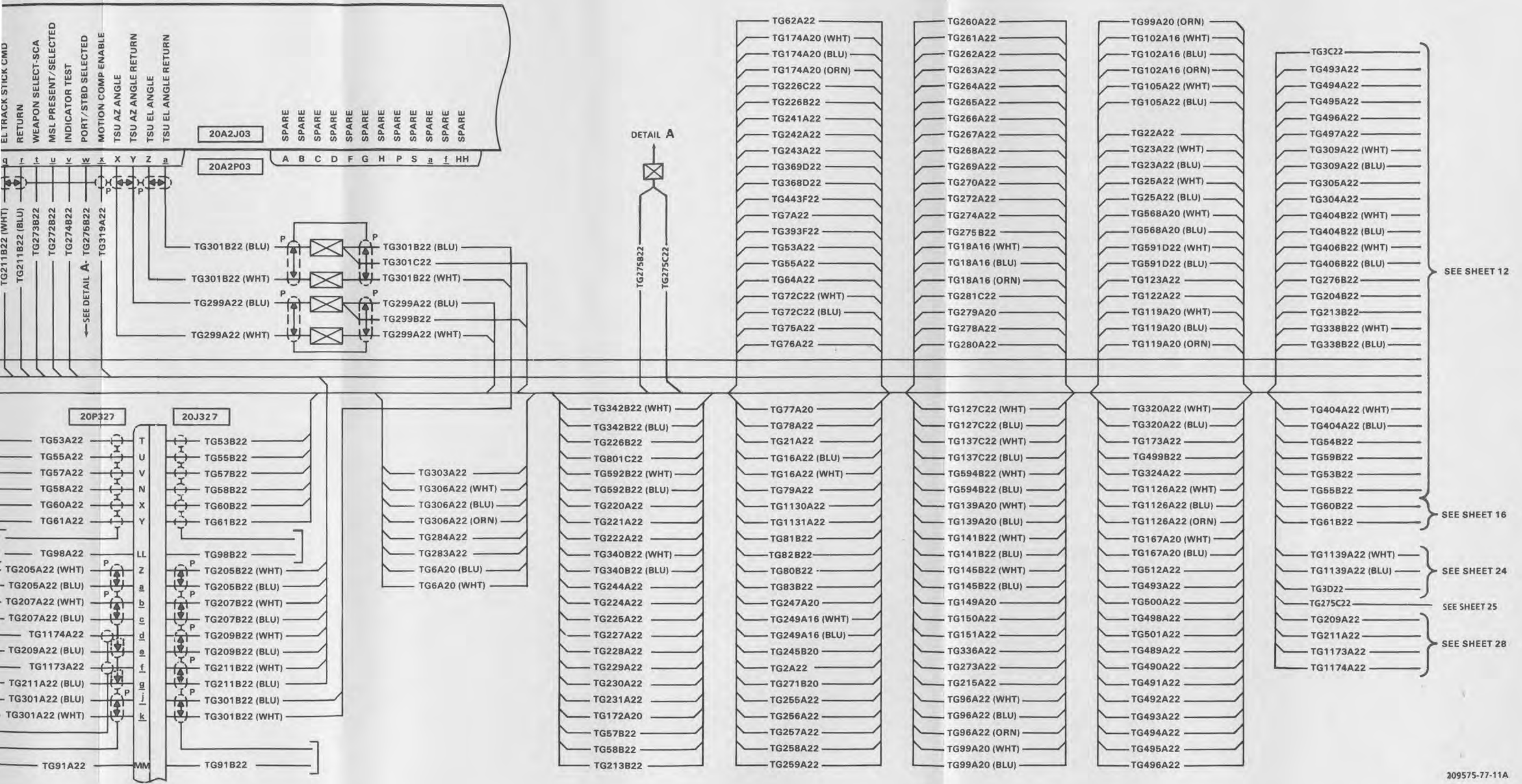


Figure FO-143. MCN TOW Missile Armament Subsystem (Sheet 11 of 28)

SEE
SHEET
7

TG163A22 (WHT)
TG163A22 (BLU)
TG309A22 (WHT)
TG309A22 (BLU)
TG305A22
TG62A22
TG342B22 (WHT)
TG342B22 (BLU)
TG16A22 (BLU)
TG16A22 (WHT)
TG18A16 (BLU)
TG18A16 (WHT)
TG18A16 (ORN)
TG21A22
TG22A22
TG23A22 (WHT)
TG23A22 (BLU)
TG25A22 (WHT)
TG25A22 (BLU)
TG568A20 (WHT)
TG568A20 (BLU)

TG174A20 (WHT)
TG174A20 (BLU)
TG174A20 (ORN)
TG226C22
TG226B22
TG241A22
TG242A22
TG243A22
TG369D22
TG368D22
TG443F22
TG7A22
TG393F22
TG53B22
TG55B22
TG64A22
TG72C22 (WHT)
TG72C22 (BLU)
TG75A22
TG76A22
TG77A20

TG275B22
TG261A22
TG262A22
TG263A22
TG264A22
TG265A22
TG266A22
TG267A22
TG268A22
TG269A22
TG270A22
TG271A22
TG272A22
TG274A22
TG275A22
TG276B22
TG204B22
TG213B22
TG281C22
TG279A20
TG278A22
TG127C22 (WHT)

TG102A16 (WHT)
TG102A16 (BLU)
TG102A16 (ORN)
TG105A22 (WHT)
TG105A22 (BLU)
TG513D22
TG163A22 (WHT)
TG163A22 (BLU)
TG162A22
TG160A22 (WHT)
TG160A22 (BLU)
TG2A22
TG591D22 (WHT)
TG591D22 (BLU)
TG123A22
TG122A22
TG119A20 (WHT)
TG119A20 (BLU)
TG119A20 (ORN)
TG320A22 (WHT)

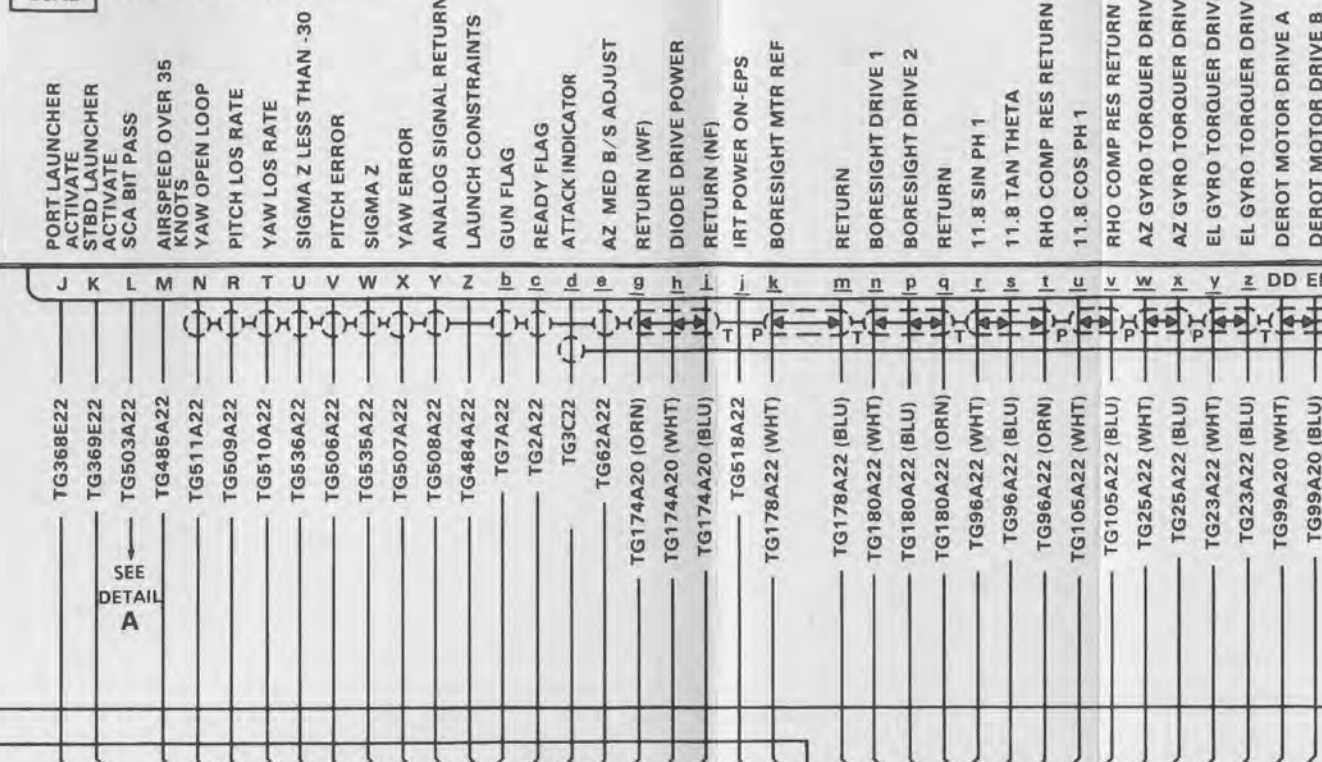
DETAIL A



20A2J03

20A2P03

20A2 STABILIZATION CONTROL AMPLIFIER



SEE
SHEET
11

TG304A22
TG226B22
TG801C22
TG592B22 (WHT)
TG592B22 (BLU)
TG220A22
TG221A22
TG222A22
TG340B22 (WHT)
TG340B22 (BLU)
TG244A22
TG224A22
TG225A22
TG227A22
TG228A22
TG229A22
TG230A22
TG231A22
TG172A20
TG173A22
TG167A20 (WHT)
TG167A20 (BLU)
TG167A20 (ORN)

TG78A22
TG404B22 (WHT)
TG404B22 (BLU)
TG406B22 (WHT)
TG406B22 (BLU)
TG1130A22
TG1131A22
TG81B22
TG82B22
TG80B22
TG83B22
TG247A20
TG249A16 (WHT)
TG249A16 (BLU)
TG245B20
TG79A22
TG271B20
TG255A22
TG256A22
TG257A22
TG258A22
TG259A22
TG260A22

TG127C22 (BLU)
TG137C22 (WHT)
TG137C22 (BLU)
TG594B22 (WHT)
TG594B22 (BLU)
TG139A20 (WHT)
TG139A20 (BLU)
TG141B22 (WHT)
TG141B22 (BLU)
TG145B22 (WHT)
TG145B22 (BLU)
TG149A20
TG150A22
TG151A22
TG336A22
TG273A22
TG215A22
TG96A22 (WHT)
TG96A22 (BLU)
TG96A22 (ORN)
TG99A20 (WHT)
TG99A20 (BLU)
TG99A20 (ORN)

TG320A22 (BLU)
TG322A22
TG323A22
TG324A22
TG1126A22 (WHT)
TG1126A22 (BLU)
TG1126A22 (ORN)
TG499B22
TG513A22
TG512A22
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TG498A22
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TG497A22

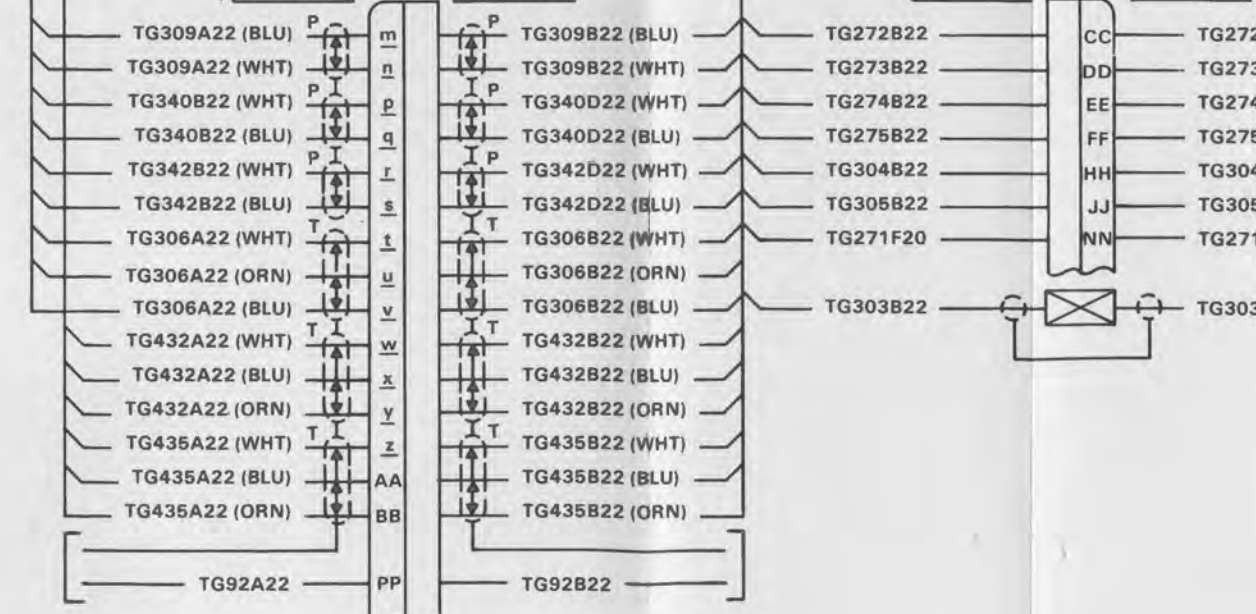
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TG55B22
TG57B22
TG58B22
TG60B22
TG61B22
TG303A22

20P327

20J327

20J327

20P327





SEE SHEET 1

SEE SHEET 7

SEE SHEET 12

TG12B12 (WHT)
TG12B12 (BLU)
TG14B12 (WHT)
TG14B12 (BLU)
TG162A22
TG322A22
TG271E20
TG518A22
TG320A22 (WHT)
TG320A22 (BLU)
TG324A22
TG1126A22 (WHT)
TG1126A22 (BLU)
TG1126A22 (ORN)
TG499B22
TG512A22
TG483A22
TG369E22
TG368E22
TG284A22
TG283A22
TG6A20 (BLU)
TG6A20 (WHT)

TG230A22
TG231A22
TG172A20
TG173A22
TG167A20 (WHT)
TG167A20 (BLU)
TG167A20 (ORN)
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TG241A22
TG242A22
TG243A22
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TG368D22
TG443F22
TG393F22
TG53B22
TG55B22
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TG72C22 (BLU)
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TG76A22
TG77A20
TG78A22

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TG263A22
TG264A22
TG265A22
TG266A22
TG267A22
TG268A22
TG269A22
TG270A22
TG500A22
TG498A22
TG501A22
TG281C22
TG279A20
TG278A22
TG280A22
TG127C22 (WHT)
TG127C22 (BLU)
TG137C22 (WHT)
TG137C22 (BLU)
TG594B22 (WHT)
TG594B22 (BLU)
TG139A20 (WHT)

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2 -A1023A22
TG493A22

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TG18A16 (BLU)
TG18A16 (WHT)
TG18A16 (ORN)
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TG592B22 (BLU)
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TG244A22
TG224A22
TG225A22
TG227A22
TG228A22
TG229A22

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TG435A22 (ORN)
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TG259A22
TG260A22
TG261A22

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TG141B22 (BLU)
TG145B22 (WHT)
TG145B22 (BLU)
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TG336A22
TG215A22
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TG491A22
TG492A22
TG591D22 (WHT)
TG591D22 (BLU)
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TG119A20 (WHT)
TG119A20 (BLU)
TG119A20 (ORN)
TG323A22

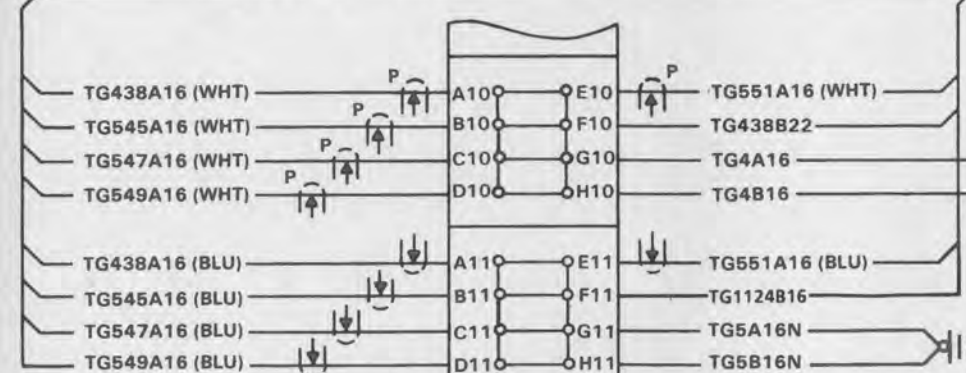
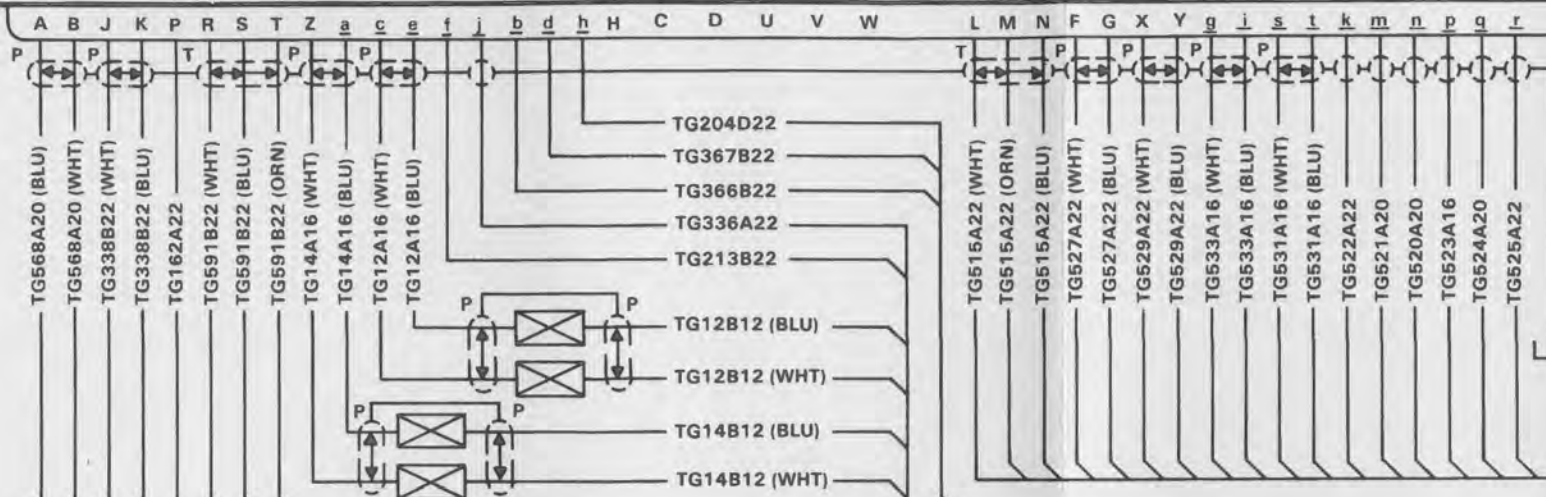
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TG406B22 (BLU)
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TG338B22 (BLU)
TG404A22 (WHT)
TG404A22 (BLU)
TG54B22
TG59B22
TG57B22
TG58B22
TG60B22
TG432A22 (WHT)
TG432A22 (BLU)
TG432A22 (ORN)

20A2 STABILIZATION CONTROL AMPLIFIER

MOTOR OVHT +10V
VH (UNSCALED)
RETURN
WEAPON ACTION-SCA
26V 400 HZ ϕ A + 90
26V 400 HZ ϕ A - 90
RETURN
AZ MOTOR DRIVE A
AZ MOTOR DRIVE B
EL MOTOR DRIVE A
EL MOTOR DRIVE B
ACQUISITION
TURRET STATUS
PORT LAUNCH POS STATUS
STBD LAUNCH POS STATUS
STOW-SCA
SPARE
SPARE
SPARE
SPARE
SPARE
SPARE
115V 400 HZ ϕ A
115V 400 HZ ϕ C
115V 400 HZ ϕ B RETURN
20V RMS 4 KHZ
RETURN
7V 900 HZ ϕ A
RETURN
28 VDC-SCA
RETURN
28 VDC-SCA
RETURN
40 VDC
20 VDC
10 VDC
DC RETURN
-20 VDC
-40 VDC

20A2J01

20A2P01



16TB1

2

35
20CB1
TOW PWR

6

2 16TB1

20CR8

20CR9

20CR10

20CR11

TG283A22

TG256A22

TG258A22

TG260A22

TG262A22

A120

B120

C120

D120

E120

A130

B130

C130

D130

E130

A140

B140

C140

D140

E140

F12

OG12

OH12

OJ12

OK12

F13

OG13

OH13

OJ13

OK13

F14

OG14

OH14

OJ14

OK14

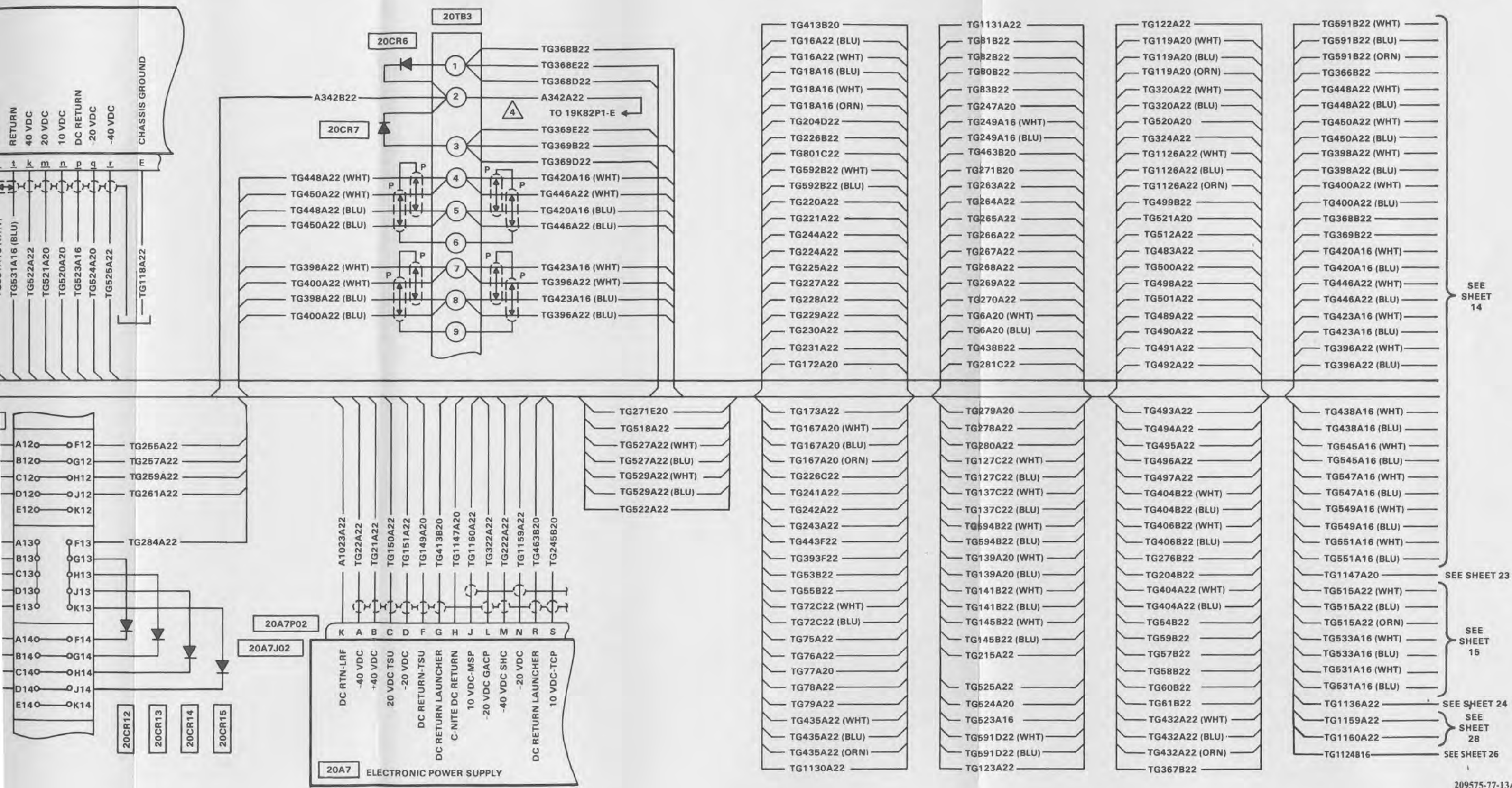
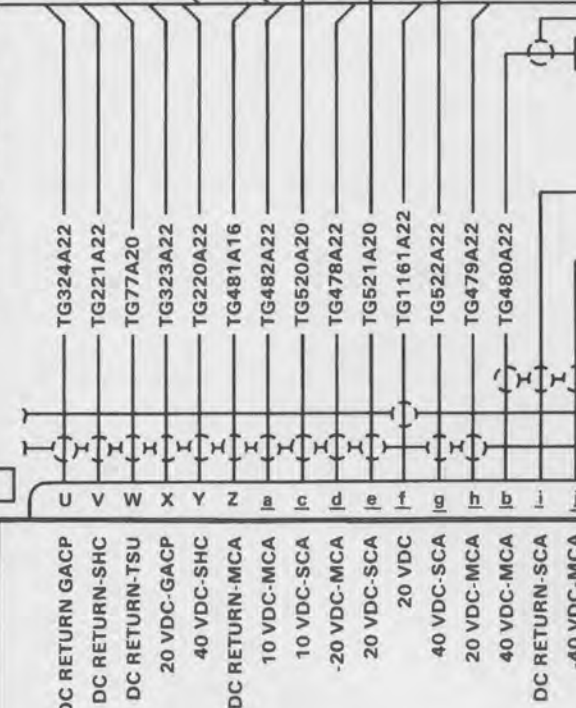
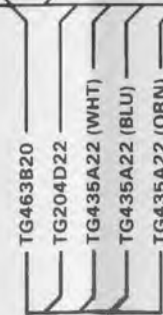
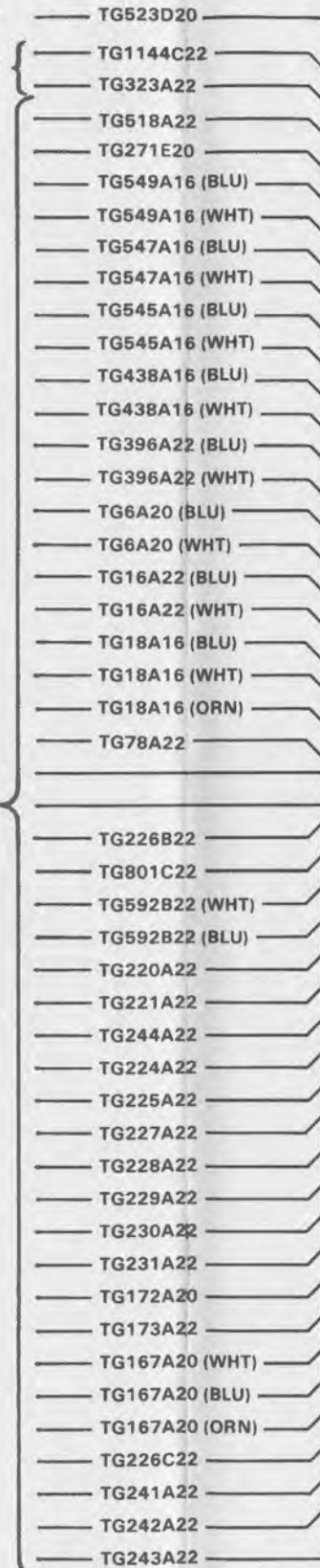


Figure FO-143. MCN TOW Missile Armament Subsystem (Sheet 13 of 28)

209575-77-13A

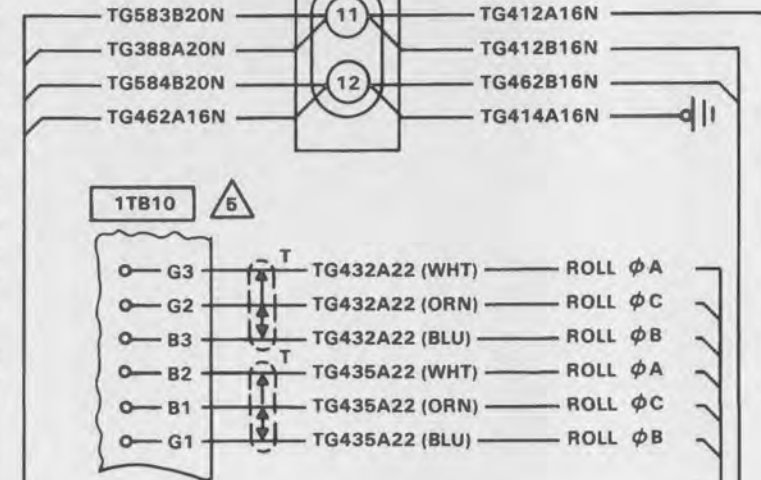
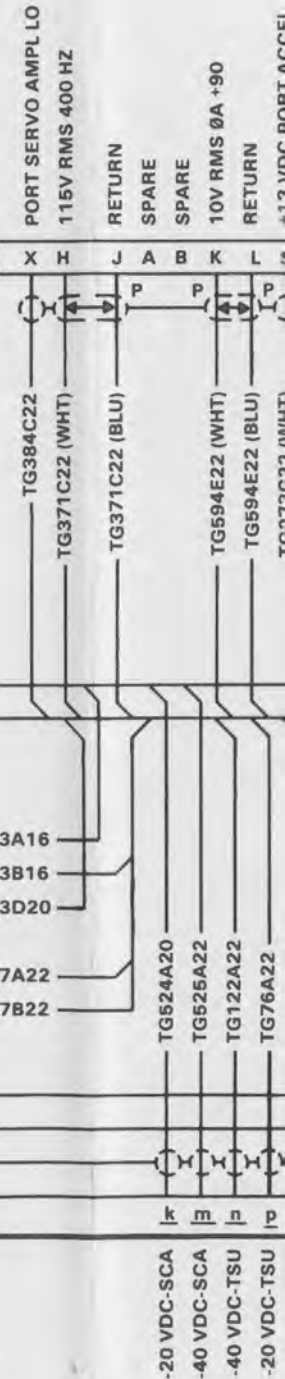
SEE SHEET 1

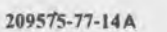
SEE SHEET 7

SEE
SHEET
13

20A7 ELECTRONIC POWER SUPPLY

20TB3

20J331
TEST 3



FO-169/(FO-170 Blank)

SEE
SHEET
7

SEE
SHEET
14

TG160A22 (WHT)
TG160A22 (BLU)
TG53B22
TG271E20
TG518A22
TG494A22
TG515A22 (WHT)
TG515A22 (BLU)
TG515A22 (ORN)
TG533A16 (WHT)
TG533A16 (BLU)
TG531A16 (WHT)
TG531A16 (BLU)
TG6A20 (BLU)
TG6A20 (WHT)
TG18A16 (BLU)
TG18A16 (WHT)
TG18A16 (ORN)
TG462B16N
TG226B22
TG801C22
TG592B22 (WHT)

TG592B22 (BLU)
TG244A22
TG224A22
TG225A22
TG227A22
TG228A22
TG229A22
TG230A22
TG231A22
TG173A22
TG167A20 (WHT)
TG167A20 (BLU)
TG167A20 (ORN)
TG226C22
TG241A22
TG242A22
TG243A22
TG443F22
TG393F22
TG412B16N
TG55B22
TG72C22 (WHT)
TG72C22 (BLU)

TG393D22
TG376C22 (WHT)
TG376C22 (BLU)
TG79A22
TG1130A22
TG1131A22
TG81B22
TG82B22
TG80B22
TG83B22
TG249A16 (WHT)
TG249A16 (BLU)
TG477A22
TG271B20
TG263A22
TG264A22
TG265A22
TG266A22
TG267A22
TG268A22
TG269A22
TG270A22

TG478A22
TG479A22
TG480A22
TG281C22
TG279A20
TG278A22
TG280A22
TG127C22 (WHT)
TG127C22 (BLU)
TG137C22 (WHT)
TG137C22 (BLU)
TG594B22 (WHT)
TG594B22 (BLU)
TG141B22 (WHT)
TG141B22 (BLU)
TG145B22 (WHT)
TG145B22 (BLU)
TG853A22
TG482A22
TG591D22 (WHT)
TG591D22 (BLU)

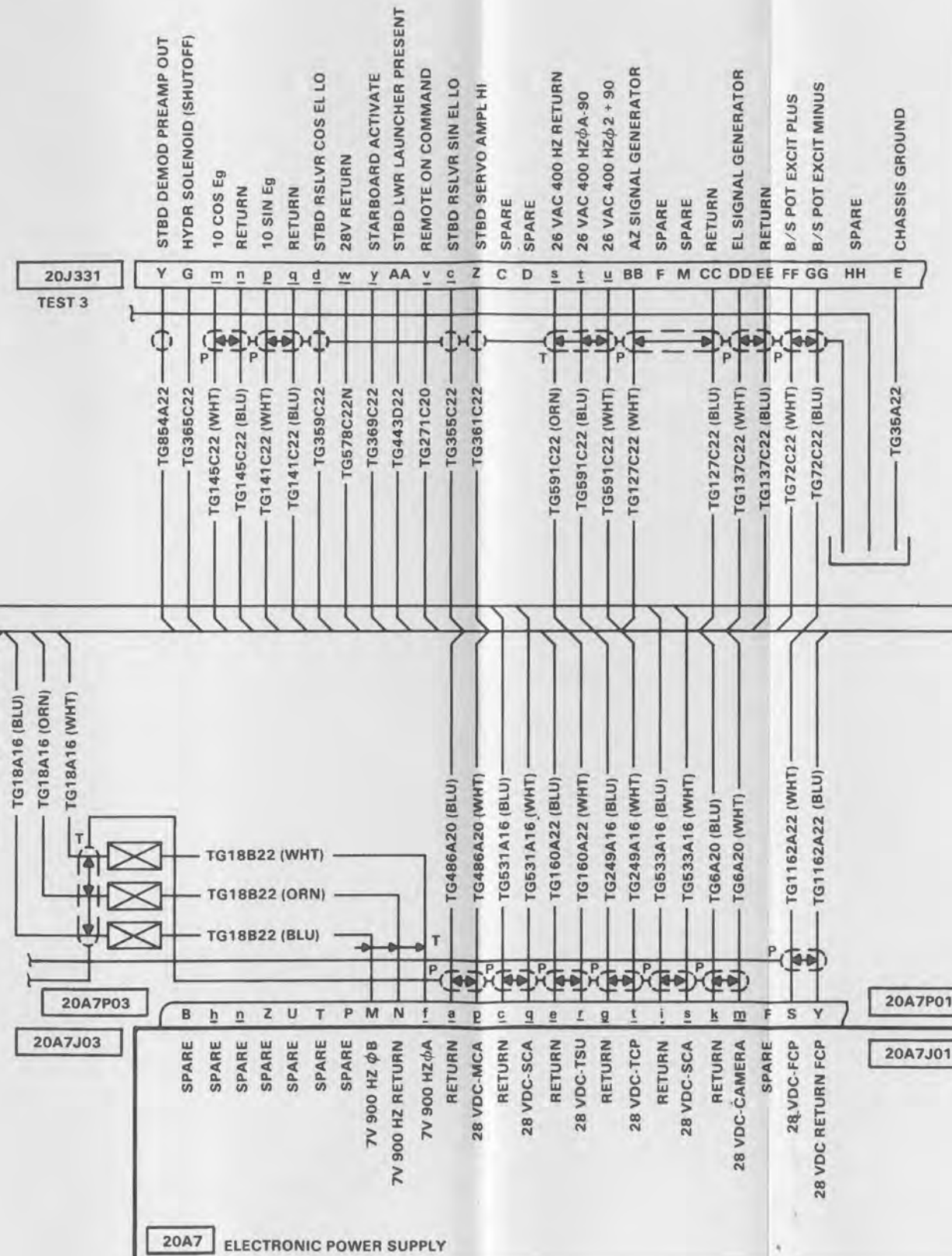
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TG119A20 (BLU)
TG119A20 (ORN)
TG1126A22 (WHT)
TG1126A22 (BLU)
TG1126A22 (ORN)
TG499B22
TG851A22
TG512A22
TG483A22
TG500A22
TG498A22
TG501A22
TG489A2
TG490A22
TG491A22
TG492A22
TG493A22
TG494A22
TG495A22
TG496A22
TG497A22

TG404B22 (WHT)
TG404B22 (BLU)
TG406B22 (WHT)
TG406B22 (BLU)
TG276B22
TG204B22
TG404A22 (WHT)
TG404A22 (BLU)
TG54B22
TG59B22
TG57B22
TG58B22
TG60B22
TG61B22
TG591B22 (BLU)
TG591B22 (WHT)
TG591B22 (ORN)
TG367B22
TG366B22
TG448A22 (WHT)
TG448A22 (BLU)
TG450A22 (WHT)
TG450A22 (BLU)

TG398A22 (WHT)
TG398A22 (BLU)
TG400A22 (WHT)
TG400A22 (BLU)
TG368B22
TG269B22
TG420A16 (WHT)
TG420A16 (BLU)
TG446A22 (WHT)
TG446A22 (BLU)
TG423A16 (WHT)
TG423A16 (BLU)
TG396A22 (WHT)
TG396A22 (BLU)
TG438A16 (WHT)
TG438A16 (BLU)
TG545A16 (WHT)
TG545A16 (BLU)
TG547A16 (WHT)
TG547A16 (BLU)
TG549A16 (WHT)
TG549A16 (BLU)

TG551A16 (WHT)
TG551A16 (BLU)
TG438B22
TG413B20
TG463B20
TG204D22
TG583B20N
TG388A20N
TG584B20N
TG462A16N
TG412A16N
TG384C22
TG371C22 (WHT)
TG371C22 (BLU)
TG594E22 (WHT)
TG594E22 (BLU)
TG373C22 (WT)
TG373C22 (BLU)
TG366C22
TG389C22N
TG368C22
TG378C22
TG382C22

TG856A22
TG855A22
TG350C22 (WHT)
TG350C22 (BLU)
TG353C22 (WHT)
TG353C22 (BLU)
TG367C22
TG850A22



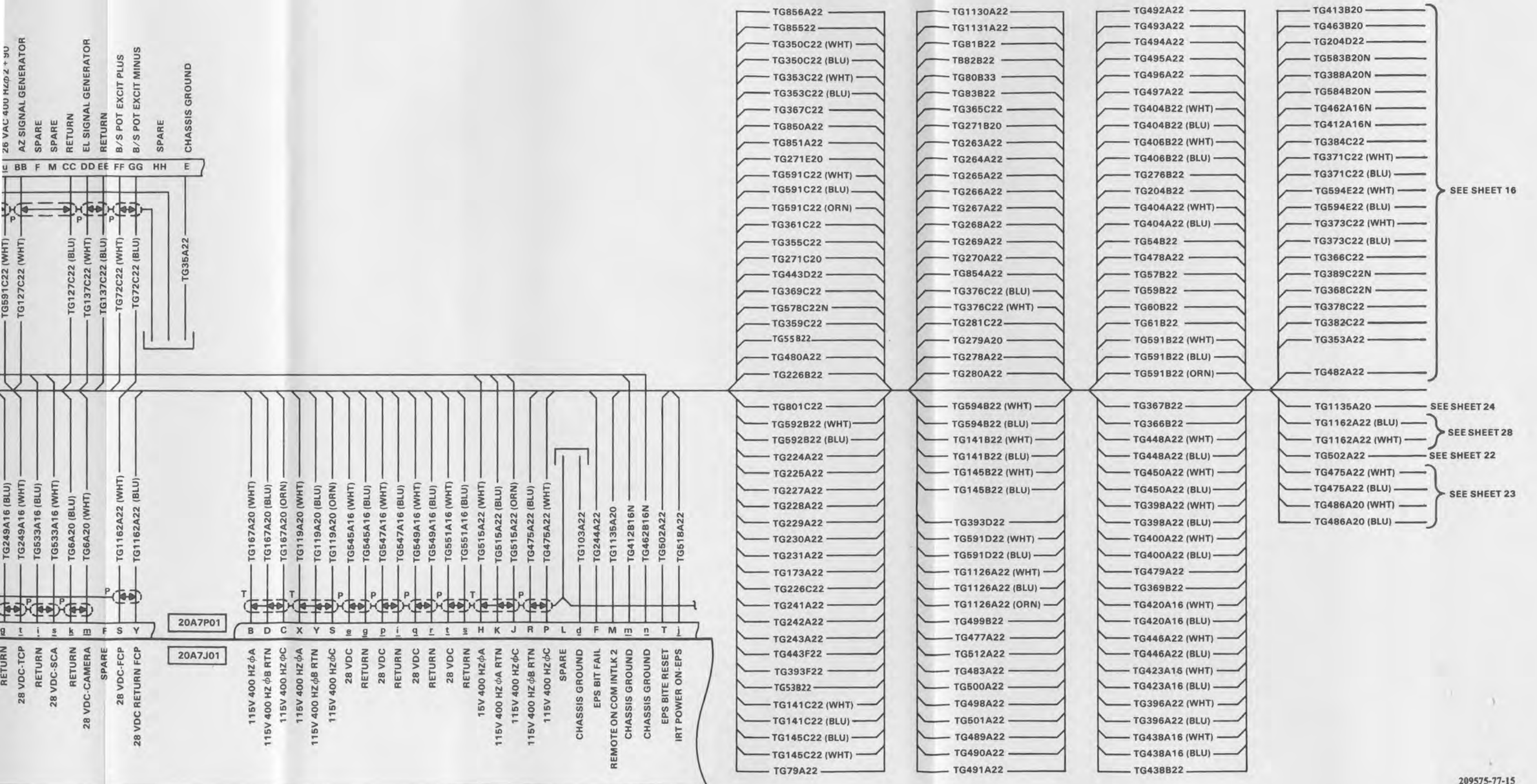


Figure FO-143. MCN TOW Missile Armament Subsystem (Sheet 15 of 28)



SEE
SHEET
16

TG801B22
TG809A22
TG802A22
TG803A22
TG804A22
TG805A22
TG806A22
TG818A22
TG819A22
TG820A22
TG817A22
TG821A22
TG822A22
TG823A22
TG836A22
TG808A22
TG807A22
TG816A22
TG810A22
TG811A22
TG856A22
TG855A22

TG173A22
TG226C22
TG241A22
TG242A22
TG243A22
TG443F22
TG393F22
TG53B22
TG55B22
TG591C22 (WHT)
TG591C22 (BLU)
TG591C22 (ORN)
TG79A22
TG1130A22
TG1131A22
TG81B22
TG82B22
TG80B22
TG83B22
TG489C22
TG271B20
TG263A22

TG1126A22 (WHT)
TG1126A22 (BLU)
TG1126A22 (ORN)
TG499B22
TG483A22
TG500A22
TG498A22
TG501A22
TG489A22
TG490A22
TG491A22
TG492A22
TG493A22
TG494A22
TG495A22
TG496A22
TG497A22
TG404B22 (WHT)
TG404B22 (BLU)
TG406B22 (BLU)
TG406B22 (WHT)
TG276B22

TG396A22 (BLU)
TG438A16 (WHT)
TG438A16 (BLU)
TG413B20
TG463B20
TG204D22
TG583B20N
TG388A20N
TG584B20N
TG462A16N
TG412A16N
TG384C22
TG371C22 (WHT)
TG371C22 (BLU)
TG594E22 (WHT)
TG594E22 (BLU)
TG373C22 (WHT)
TG373C22 (BLU)
TG366C22
TG389C22N
TG368C22
TG378C22

TG495C22
TG496C22
TG497C22
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TG429B22 (BLU)
TG429B22 (ORN)
TG361C22
TG402A22 (WHT)
TG402A22 (BLU)

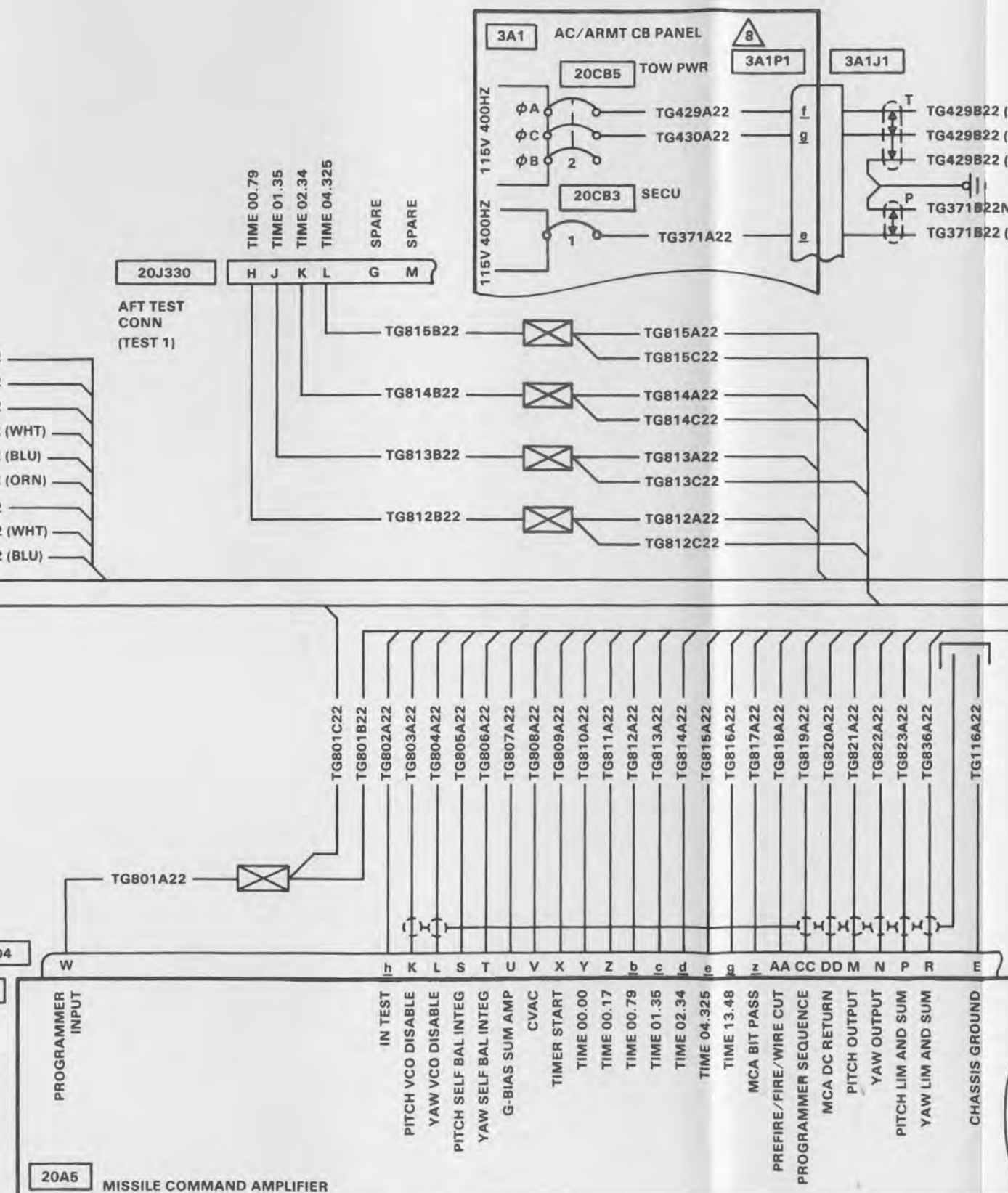
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TG353C22 (WHT)
TG353C22 (BLU)
TG367C22
TG850A22
TG851A22
TG271E20
TG452A22 (WHT)
TG452A22 (BLU)
TG454A22 (WHT)
TG454A22 (BLU)
TG226B22
TG801C22
TG592B22 (WHT)
TG592B22 (BLU)
TG224A22
TG225A22
TG227A22
TG228A22
TG229A22
TG230A22
TG231A22

TG264A22
TG265A22
TG266A22
TG267A22
TG268A22
TG269A22
TG270A22
TG490C22
TG499C22
TG494C22
TG281C22
TG279A20
TG278A22
TG280A22
TG594B22 (WHT)
TG594B22 (BLU)
TG141B22 (WHT)
TG141B22 (BLU)
TG145B22 (WHT)
TG145B22 (BLU)
TG591D22 (WHT)
TG591D22 (BLU)

TG204B22
TG591B22 (WHT)
TG591B22 (BLU)
TG591B22 (ORN)
TG367B22
TG366B22
TG448A22 (WHT)
TG448A22 (BLU)
TG450A22 (WHT)
TG450A22 (BLU)
TG398A22 (WHT)
TG398A22 (BLU)
TG400A22 (WHT)
TG400A22 (BLU)
TG368B22
TG369B22
TG420A16 (WHT)
TG420A16 (BLU)
TG446A22 (WHT)
TG446A22 (BLU)
TG423A16 (WHT)
TG423A16 (BLU)
TG396A22 (WHT)

TG382C22
TG853A22
TG482A22
TG478A22
TG479A22
TG480A22
TG477A22
TG393D22
TG376C22 (WHT)
TG376C22 (BLU)
TG854A22
TG365C22
TG145C22 (WHT)
TG145C22 (BLU)
TG141C22 (WHT)
TG141C22 (BLU)
TG359C22
TG578C22N
TG369C22
TG443D22
TG271C20
TG355C22

20A5P04
20A5J04



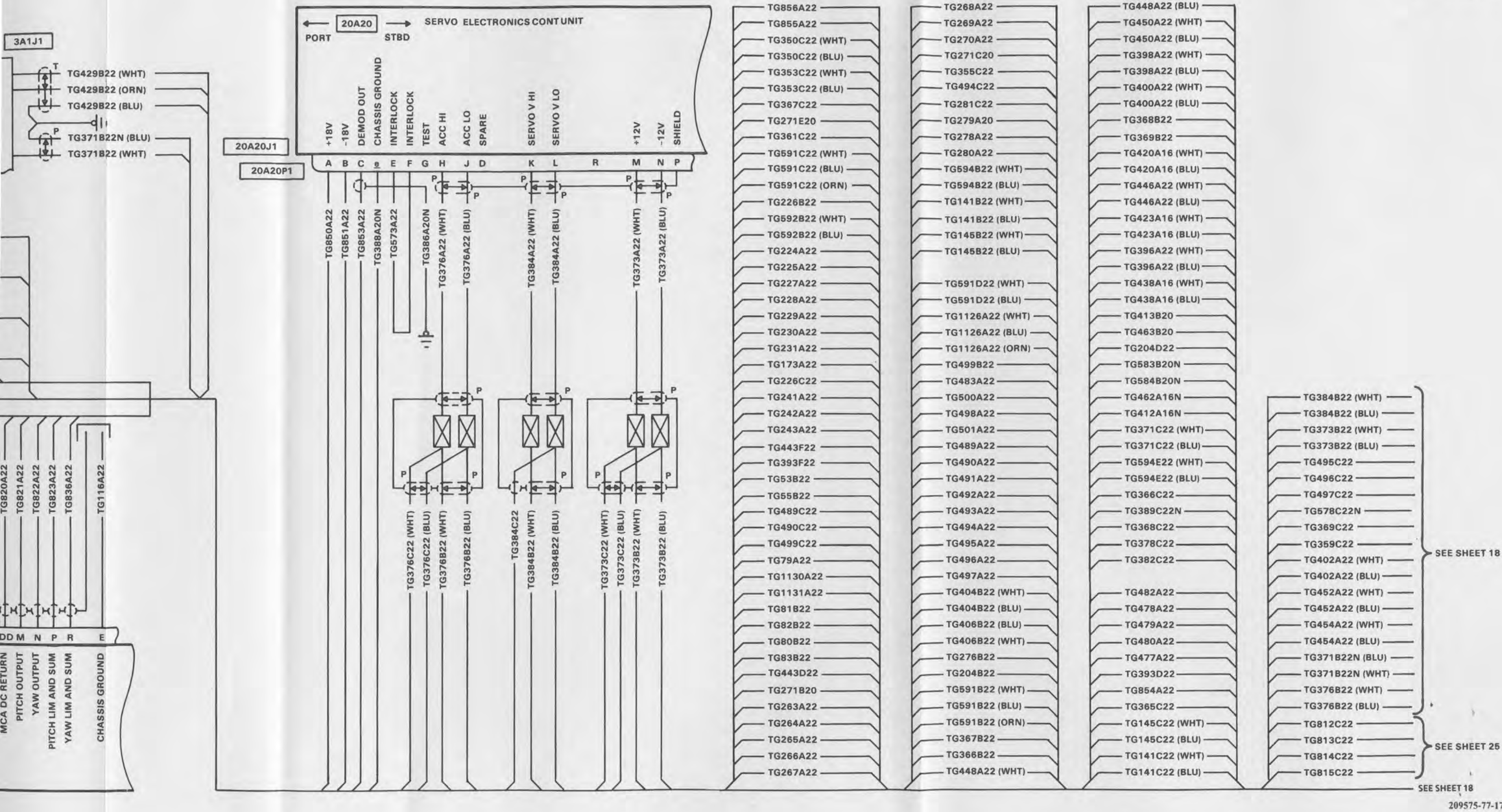
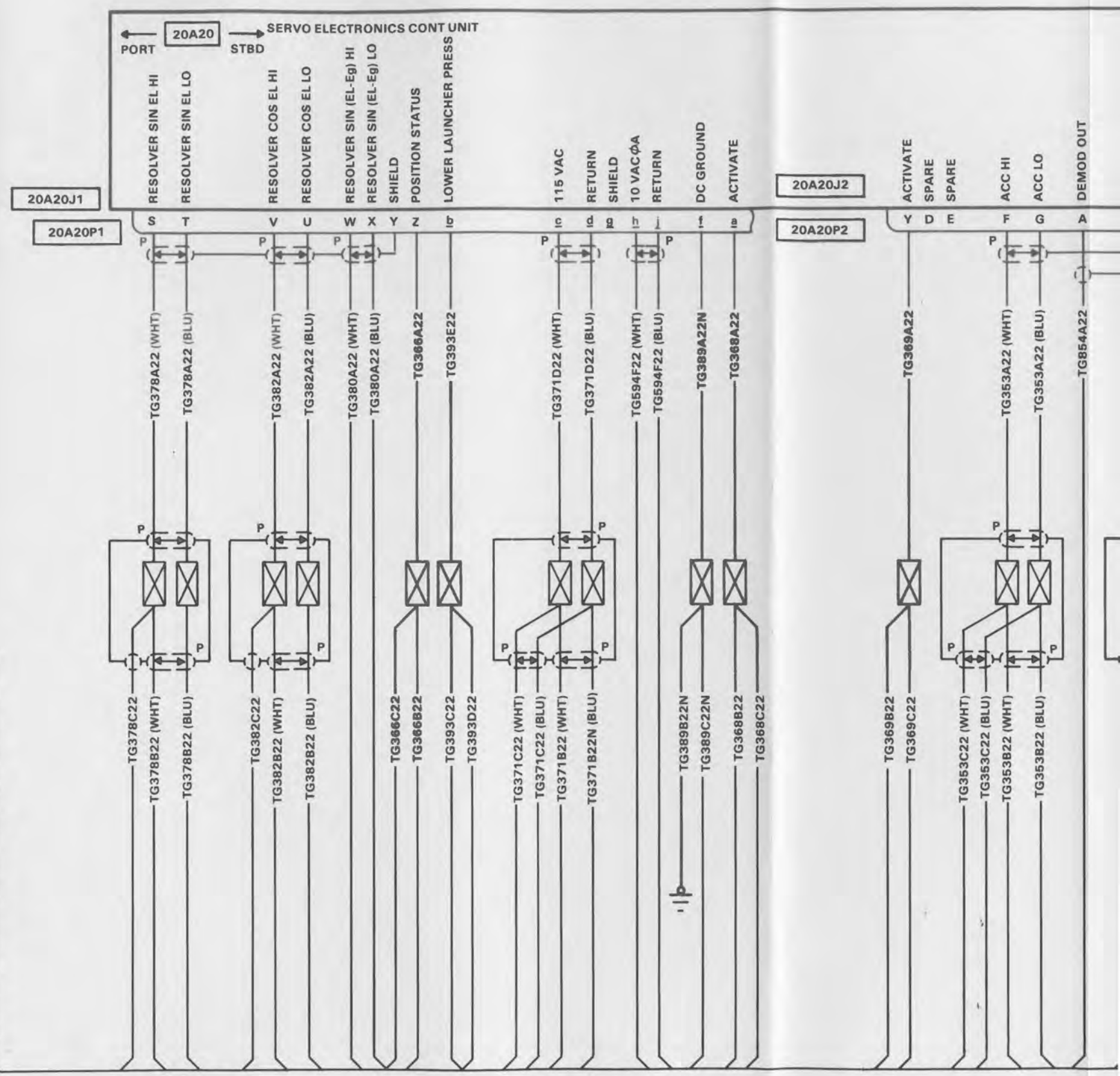
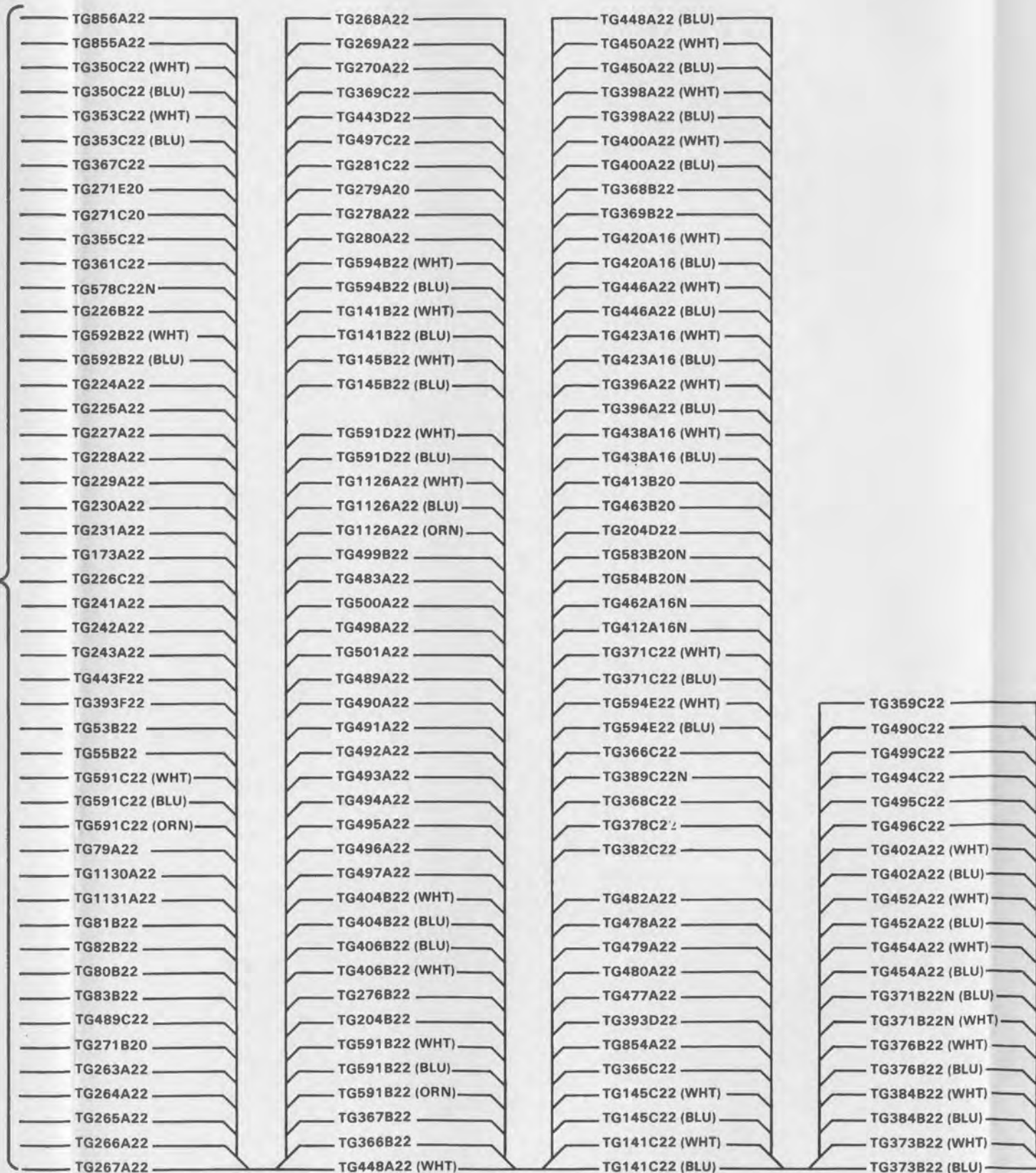
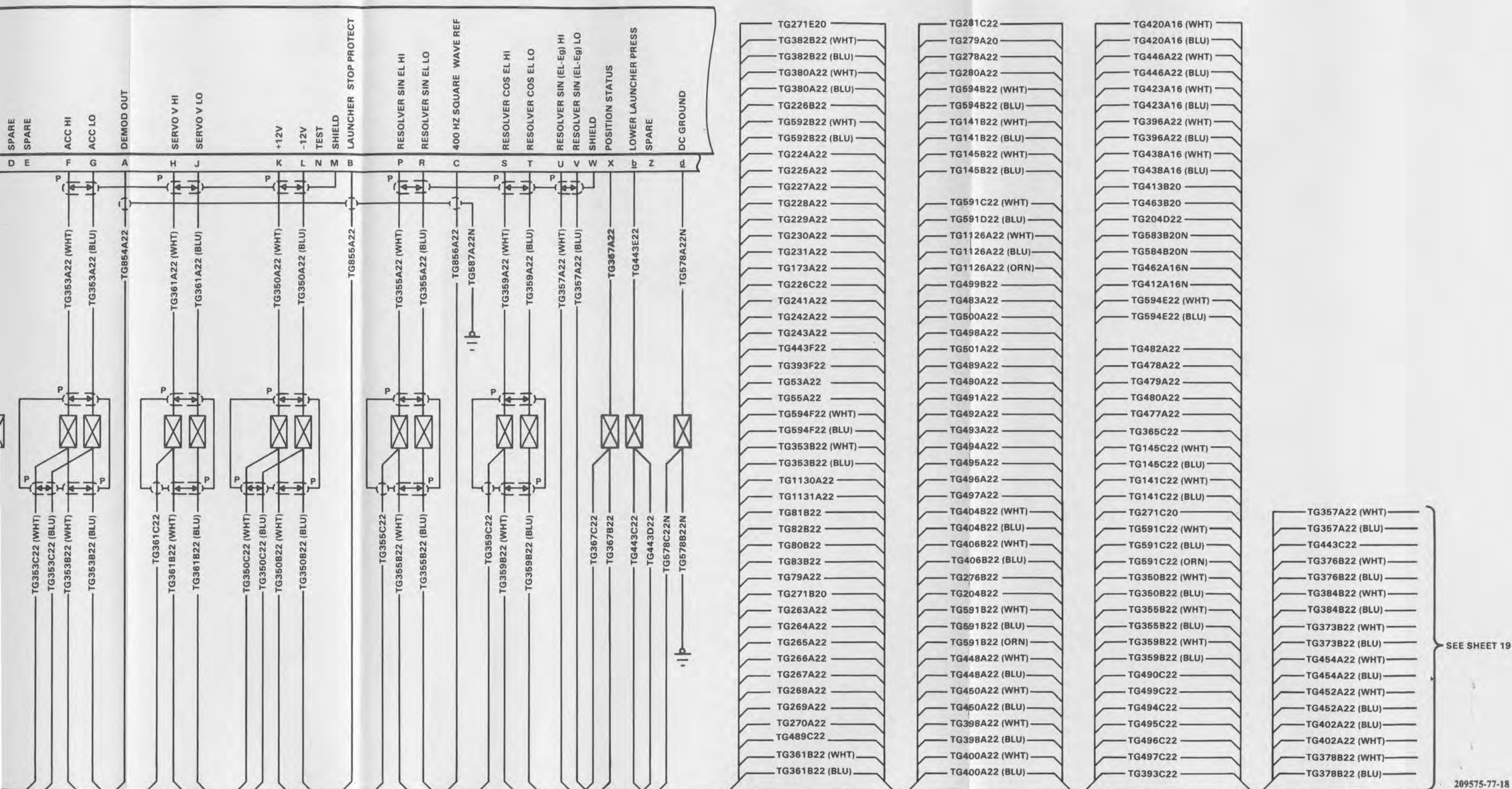
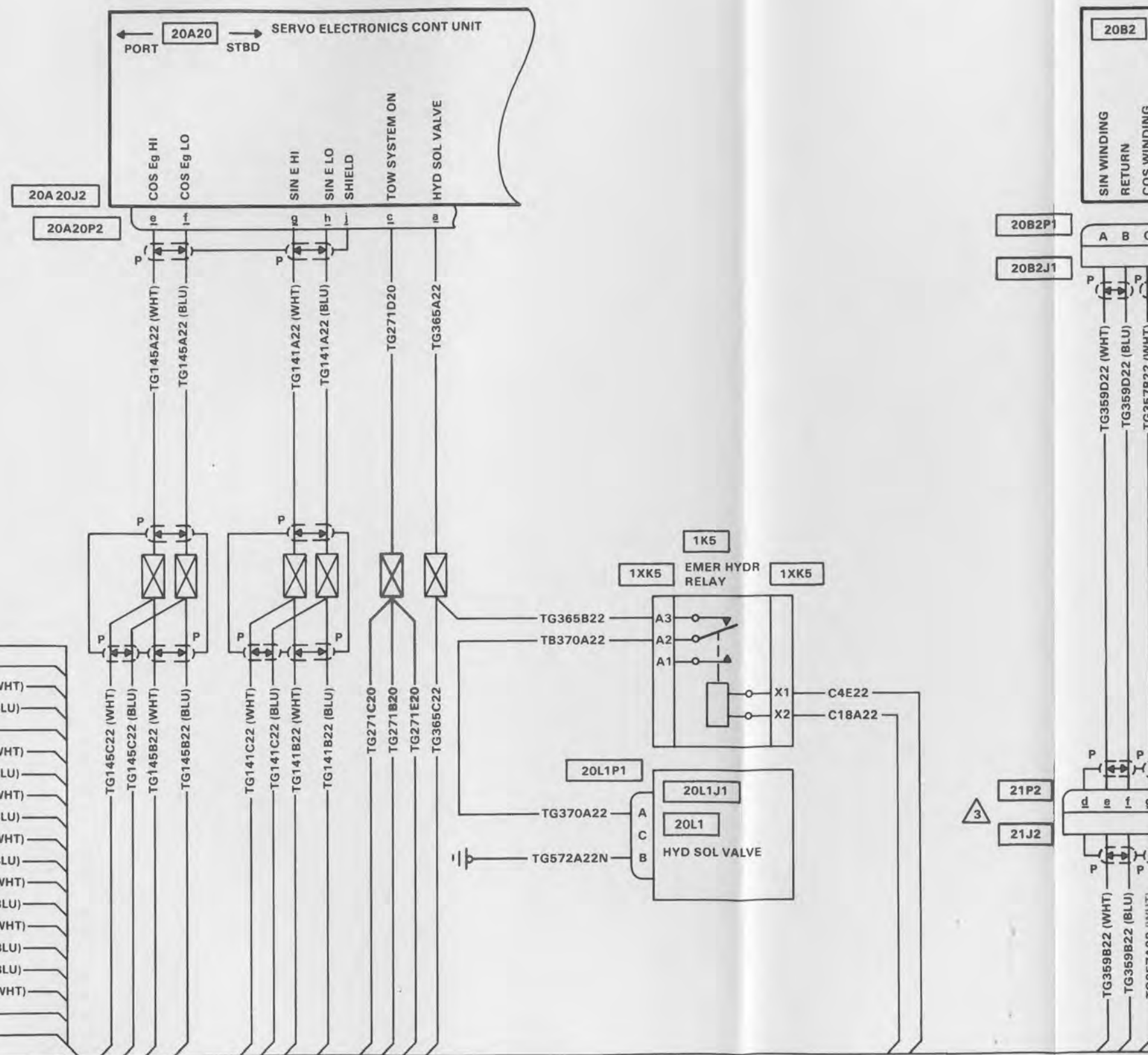
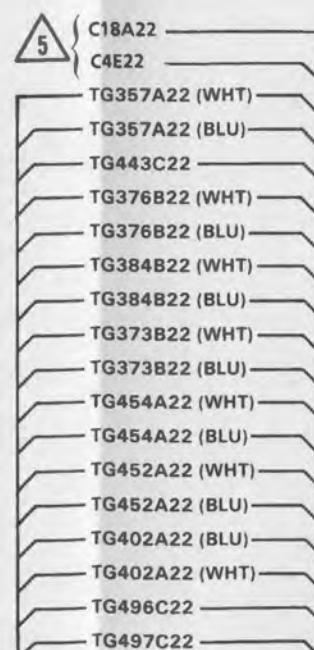
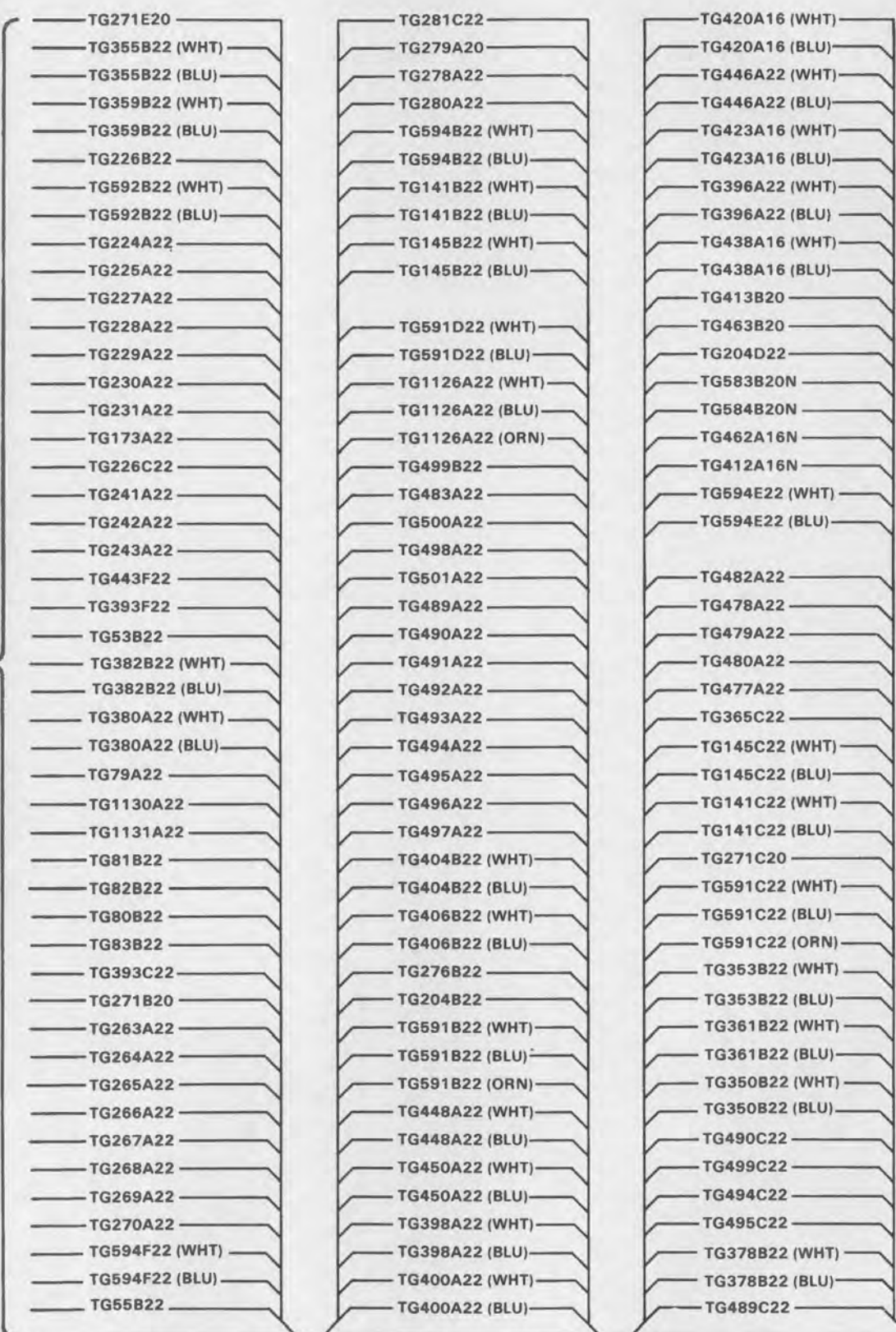


Figure FO-143. MCN TOW Missile Armament Subsystem (Sheet 17 of 28)





SEE
SHEET
18



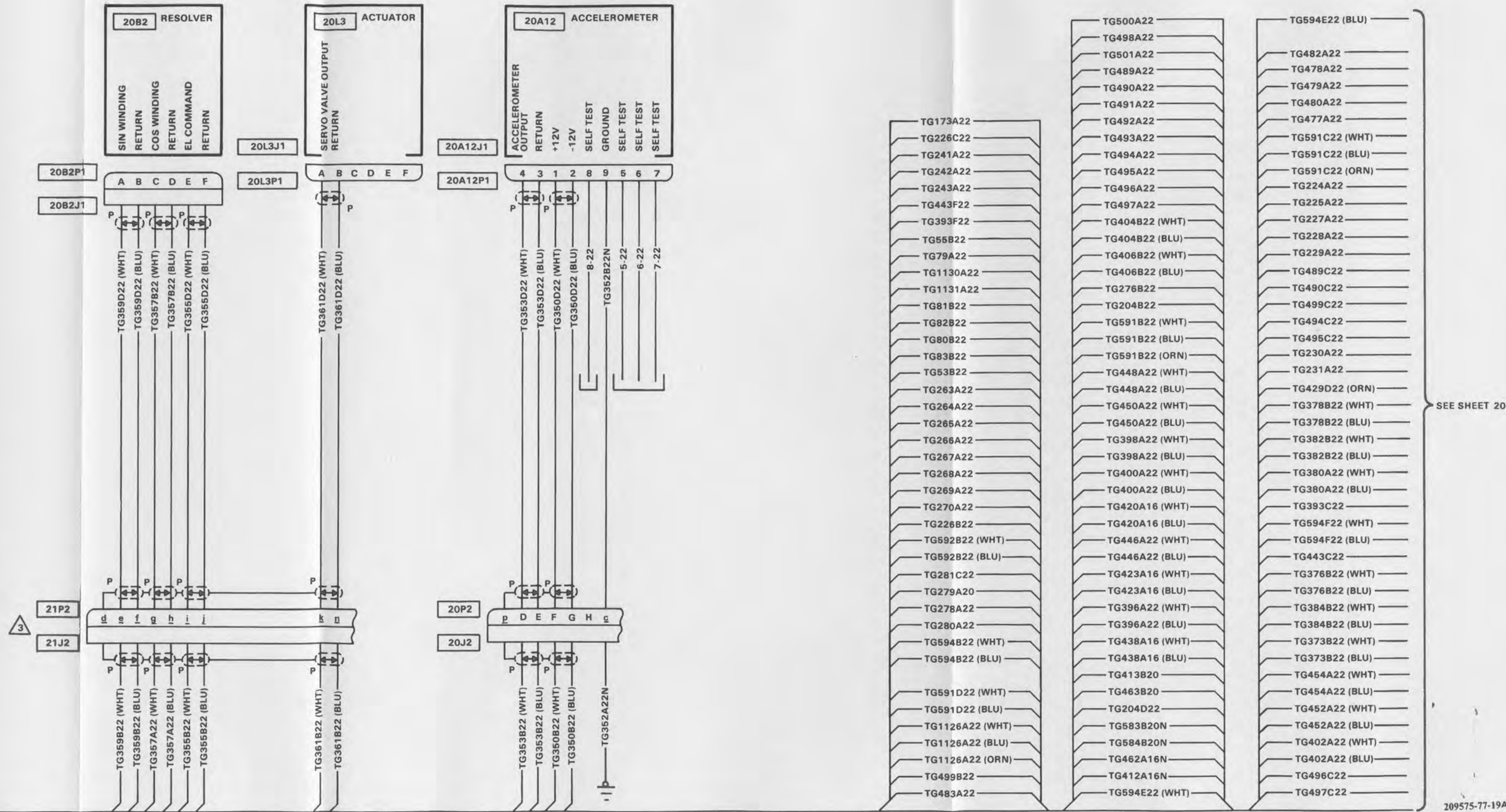
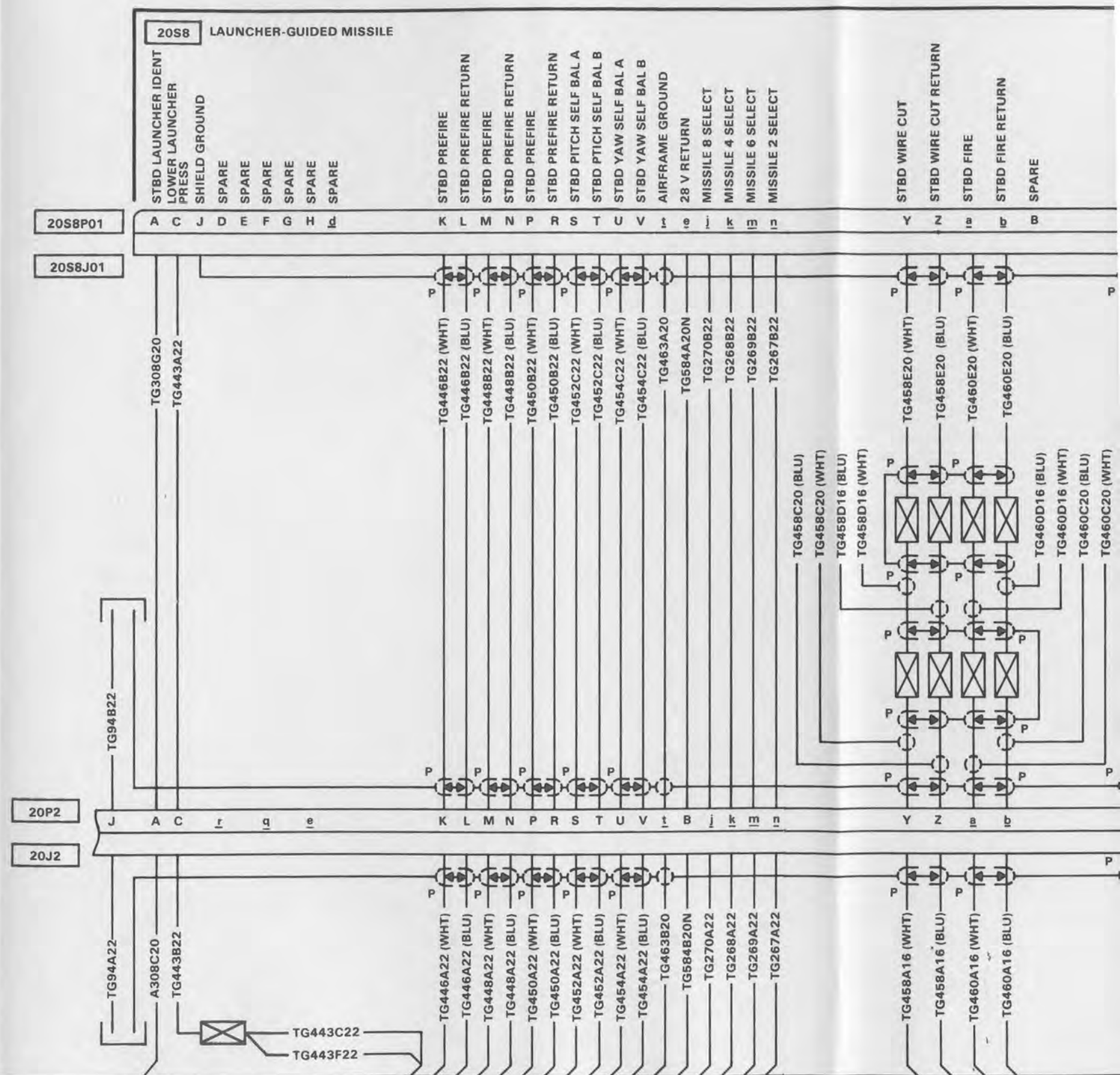
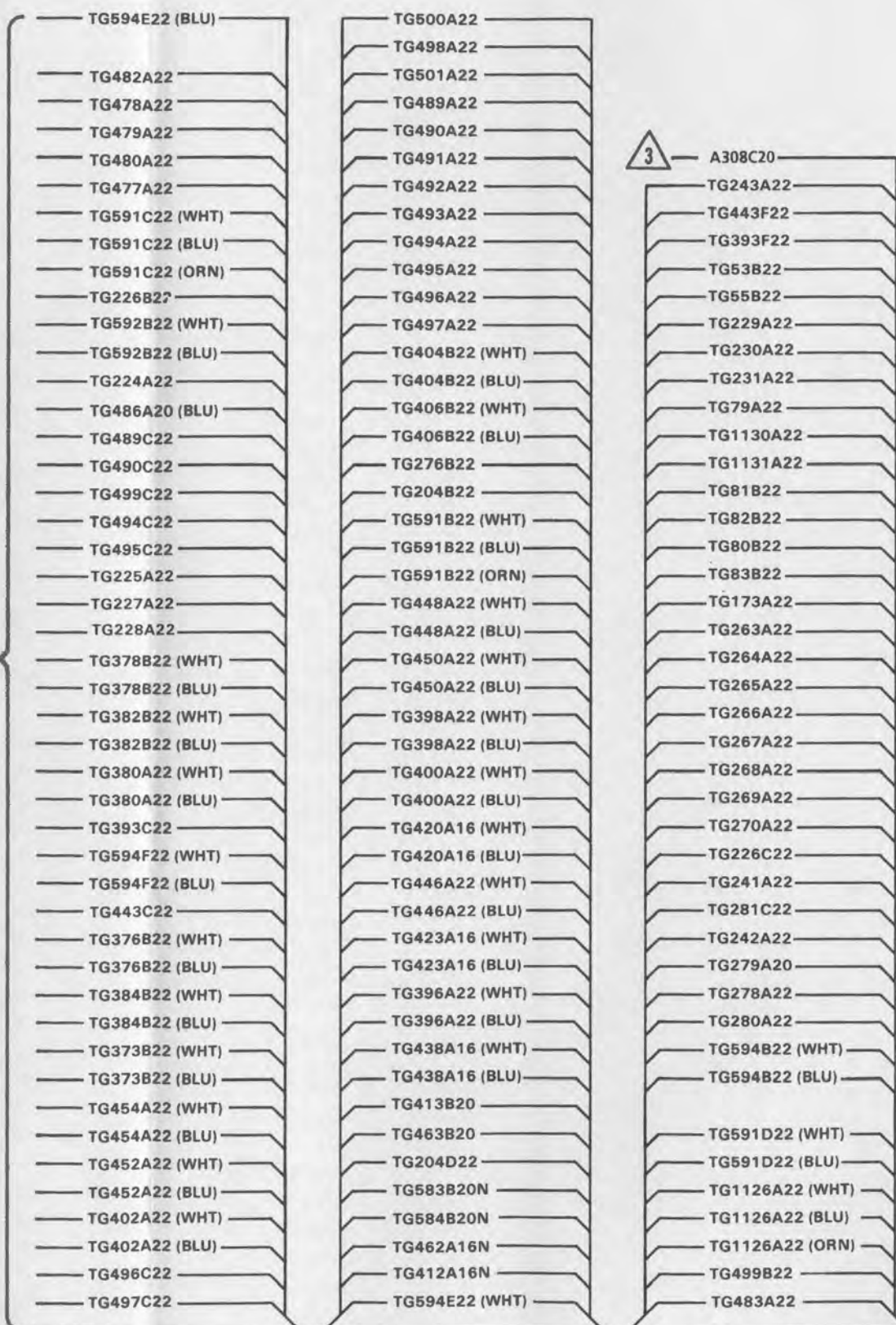


Figure FO-143. MCN TOW Missile Armament Subsystem (Sheet 19 of 28)



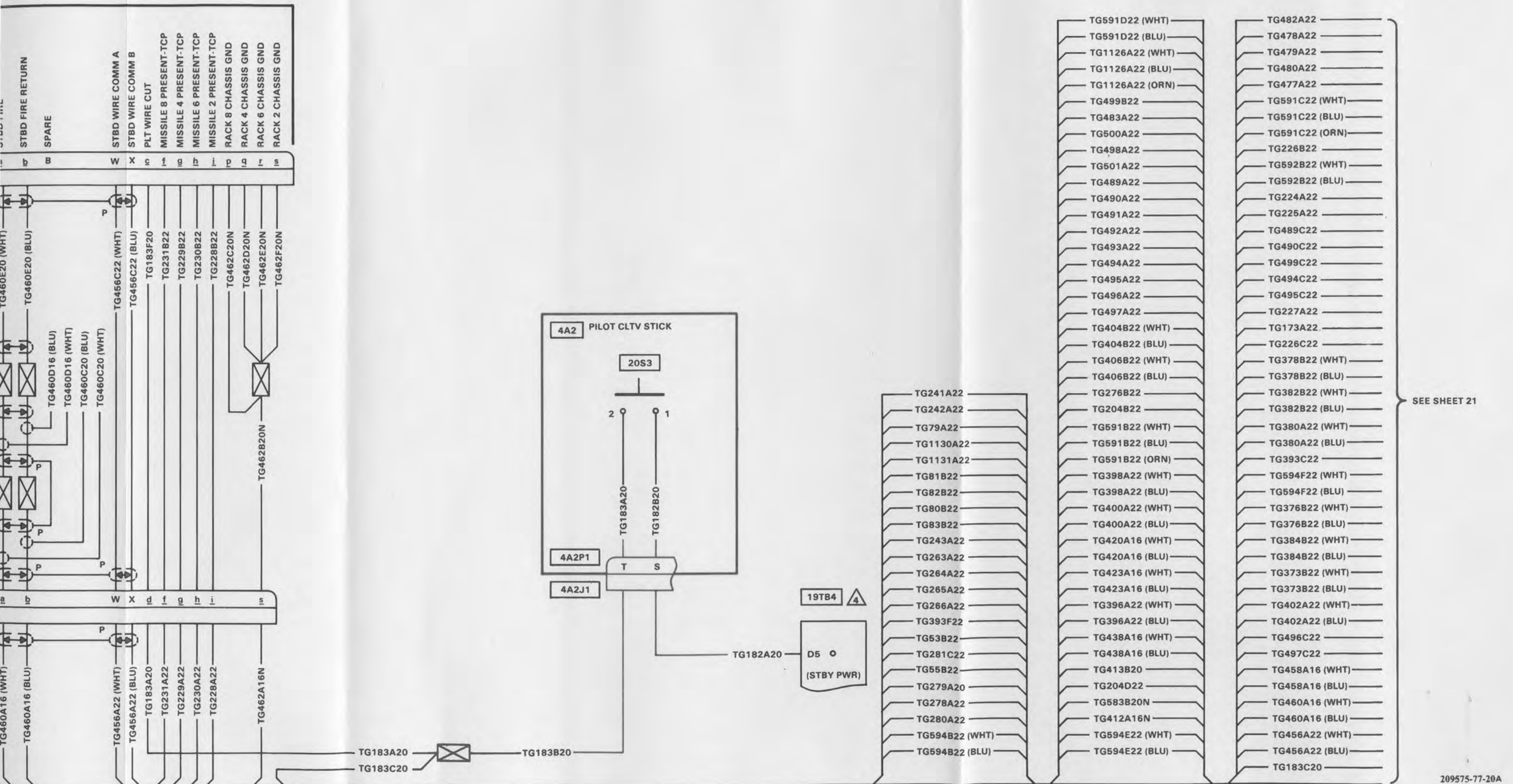


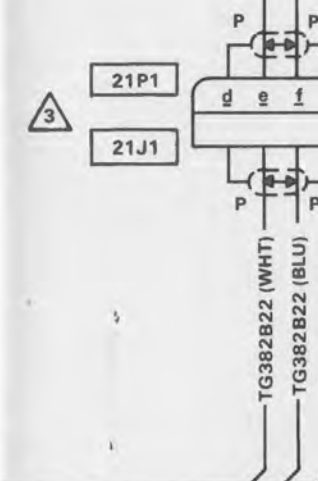
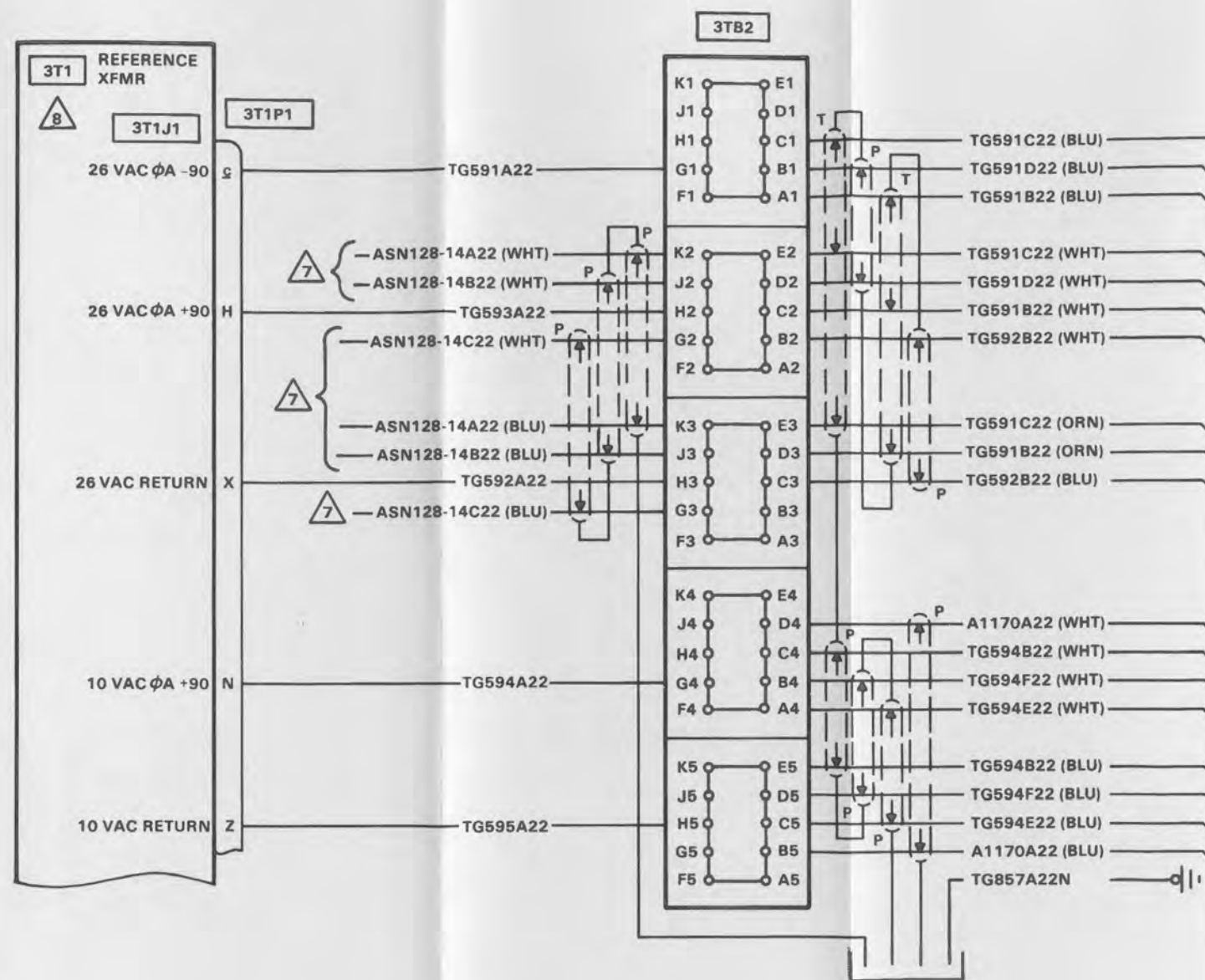
Figure FO-143. MCN TOW Missile Armament Subsystem (Sheet 20 of 28)

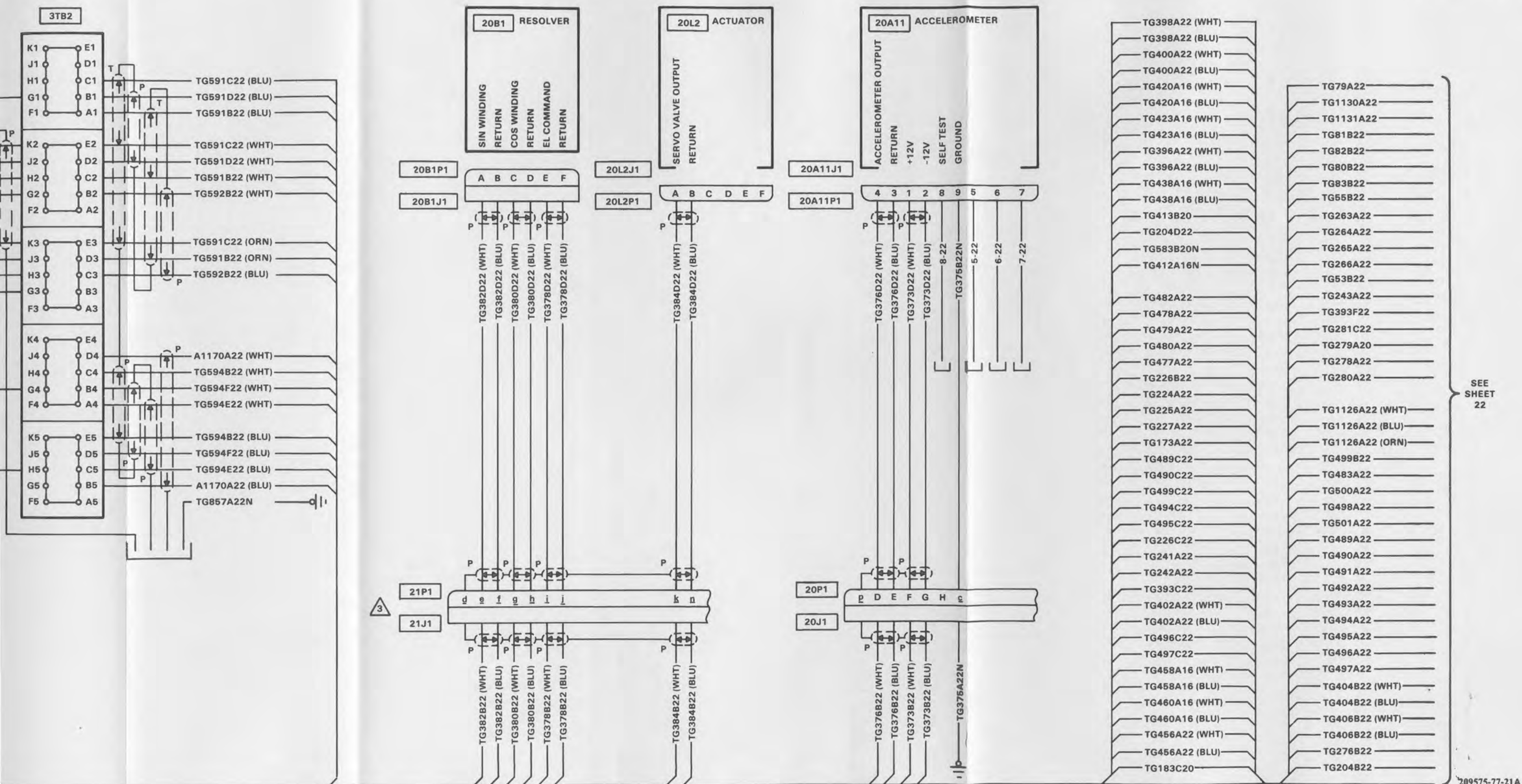
SEE
SHEET
20

TG482A22
TG478A22
TG479A22
TG480A22
TG477A22
TG591C22 (WHT)
TG591C22 (BLU)
TG591C22 (ORN)
TG241A22
TG242A22
TG243A22
TG393F22
TG53B22
TG489C22
TG490C22
TG499C22
TG494C22
TG495C22
TG227A22
TG55B22
TG225A22
TG378B22 (WHT)
TG378B22 (BLU)
TG382B22 (WHT)
TG382B22 (BLU)
TG380A22 (WHT)
TG380A22 (BLU)
TG393C22
TG594F22 (WHT)
TG594F22 (BLU)
TG376B22 (WHT)
TG376B22 (BLU)
TG384B22 (WHT)
TG384B22 (BLU)
TG373B22 (WHT)
TG373B22 (BLU)
TG402A22 (WHT)
TG402A22 (BLU)
TG496C22
TG497C22
TG458A16 (WHT)
TG458A16 (BLU)
TG460A16 (WHT)
TG460A16 (BLU)
TG456A22 (WHT)
TG456A22 (BLU)
TG183C20

TG591D22 (WHT)
TG591D22 (BLU)
TG1126A22 (WHT)
TG1126A22 (BLU)
TG1126A22 (ORN)
TG499B22
TG483A22
TG500A22
TG498A22
TG501A22
TG489A22
TG490A22
TG491A22
TG492A22
TG493A22
TG494A22
TG495A22
TG496A22
TG497A22
TG404B22 (WHT)
TG404B22 (BLU)
TG406B22 (WHT)
TG406B22 (BLU)
TG276B22
TG204B22
TG591B22 (WHT)
TG591B22 (BLU)
TG591B22 (ORN)
TG398A22 (WHT)
TG398A22 (BLU)
TG400A22 (WHT)
TG400A22 (BLU)
TG420A16 (WHT)
TG420A16 (BLU)
TG423A16 (WHT)
TG423A16 (BLU)
TG396A22 (WHT)
TG396A22 (BLU)
TG438A16 (WHT)
TG438A16 (BLU)
TG413B20
TG204D22
TG583B20N
TG412A16N
TG594E22 (WHT)
TG594E22 (BLU)

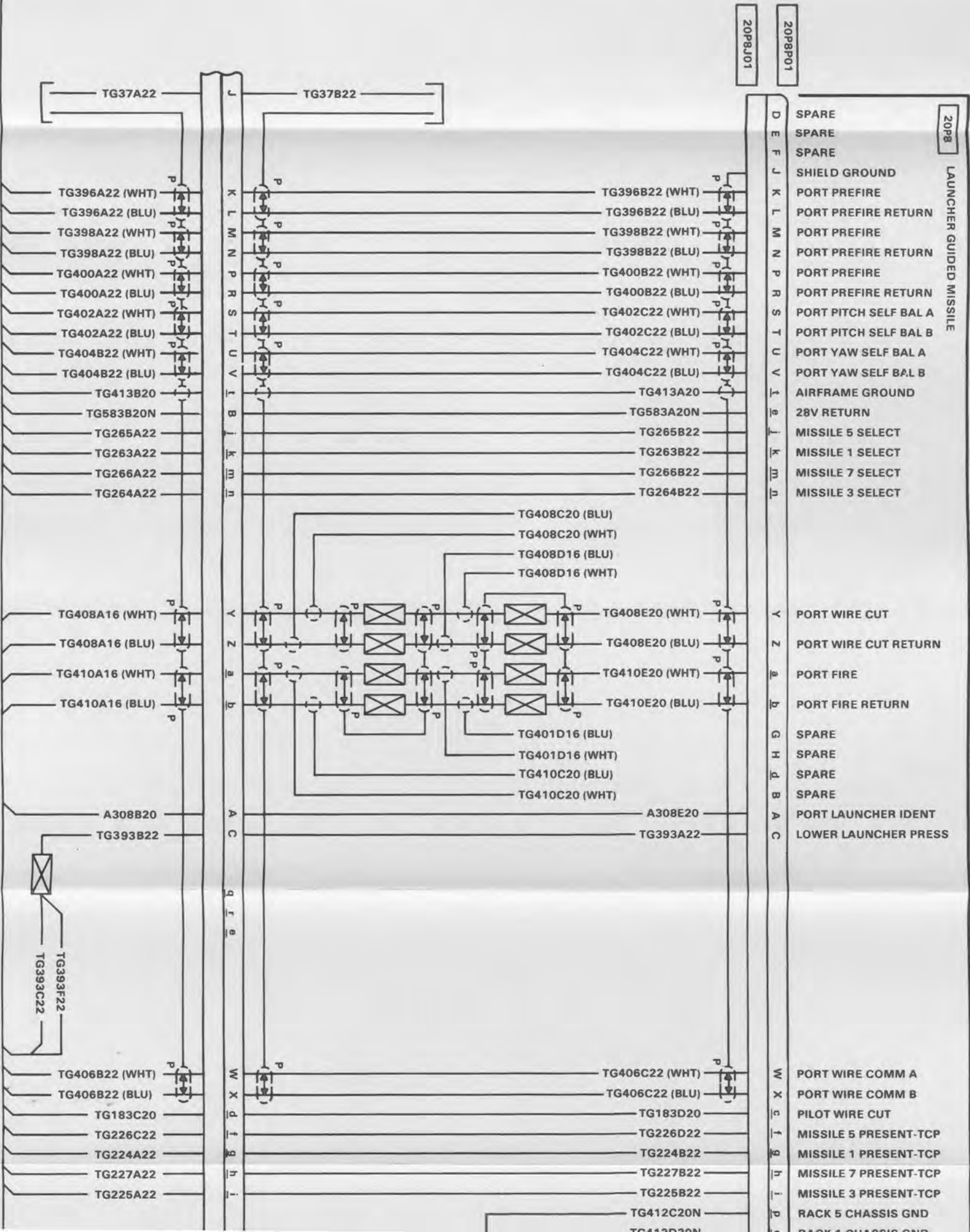
2 { A1170A22 (WHT)
A1170A22 (BLU)
TG173A22
TG226C22
TG79A22
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TG1131A22
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TG82B22
TG80B22
TG83B22
TG224A22
TG263A22
TG264A22
TG265A22
TG266A22
TG592B22 (WHT)
TG592B22 (BLU)
TG281C22
TG226B22
TG279A20
TG278A22
TG280A22
TG594B22 (WHT)
TG594B22 (BLU)





SEE SHEET 3
SEE SHEET 12
SEE SHEET 15

A308B20	TG240A22	TG491A22
TG503A22	TG502A22	TG492A22
TG56B22	TG226B22	TG493A22
TG224A22	TG225A22	TG494A22
TG227A22	TG173A22	TG495A22
TG226C22	TG241A22	TG496A22
TG242A22	TG243A22	TG497A22
TG393F22	TG53B22	TG404B22 (WHT)
TG402A22 (WHT)	TG402A22 (BLU)	TG404B22 (BLU)
TG496C22	TG458A16 (WHT)	TG406B22 (WHT)
TG458A16 (BLU)	TG130A22	TG406B22 (BLU)
TG131A22	TG81B22	TG406B22 (BLU)
TG82B22	TG80B22	TG406B22 (BLU)
TG83B322	TG79A22	TG276B22
TG263A22	TG264A22	TG204B22
TG265A22	TG266A22	TG398A22 (WHT)
TG460A16 (WHT)	TG460A16 (BLU)	TG398A22 (BLU)
TG456A22 (WHT)	TG456A22 (BLU)	TG400A22 (WHT)
TG279A20	TG278A22	TG400A22 (BLU)
TG280A22	TG126A22 (WHT)	TG420A16 (WHT)
TG126A22 (BLU)	TG126A22 (ORN)	TG420A16 (BLU)
TG499B22	TG483A22	TG423A16 (WHT)
TG500A22	TG498A22	TG423A16 (BLU)
TG501A22	TG489A22	TG438A16 (WHT)
		TG438A16 (BLU)
		TG413B20
		TG204D22
		TG538B20N
		TG412A16N
		TG482A22
		TG478A22
		TG479A22
		TG480A22
		TG477A22
		TG490A22
		TG281C22
		TG183C20
		TG393C22
		TG497C22
		TG489C22
		TG490C22
		TG499C22
		TG494C22
		TG496C22
		TG489A22



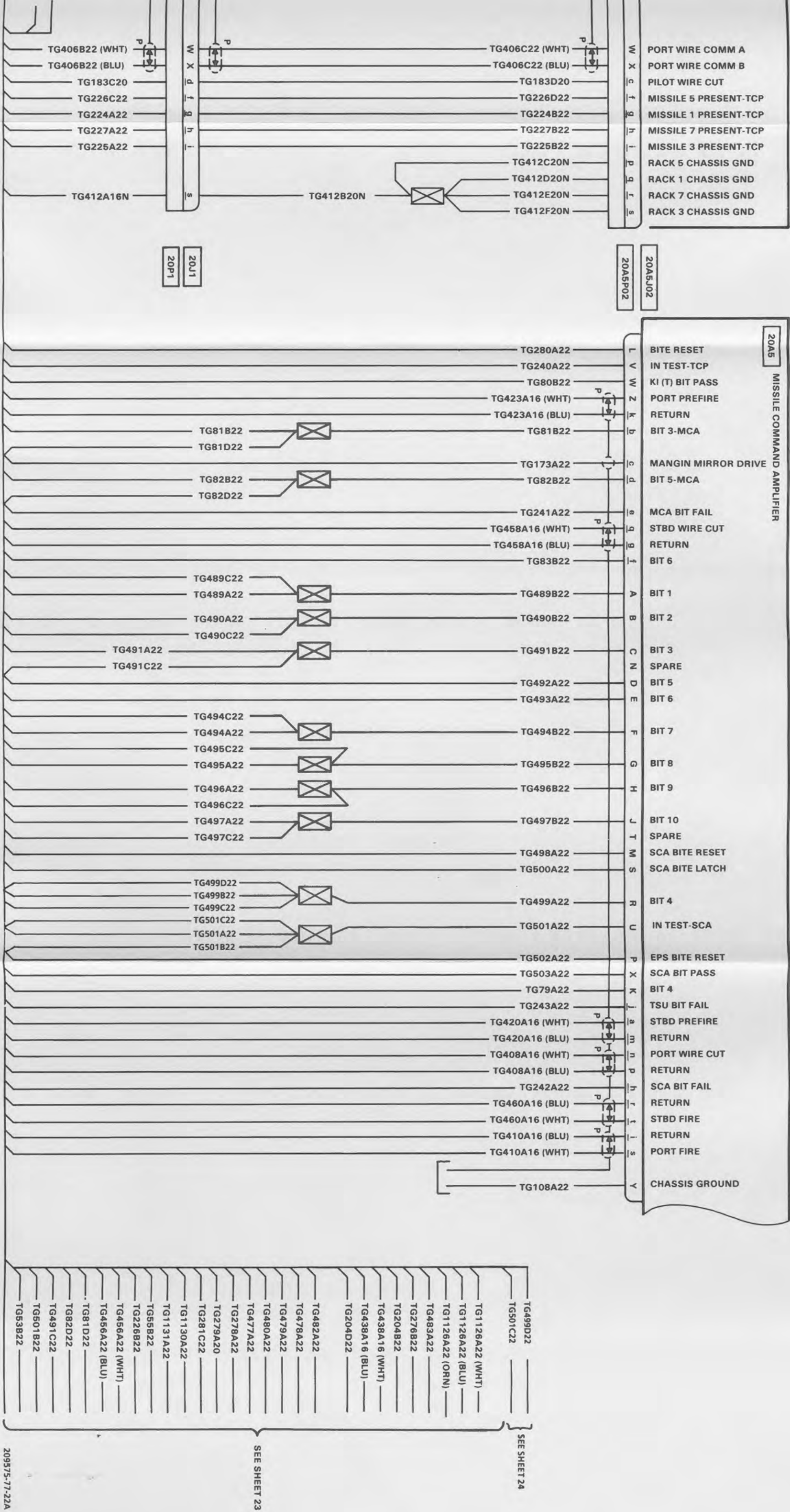
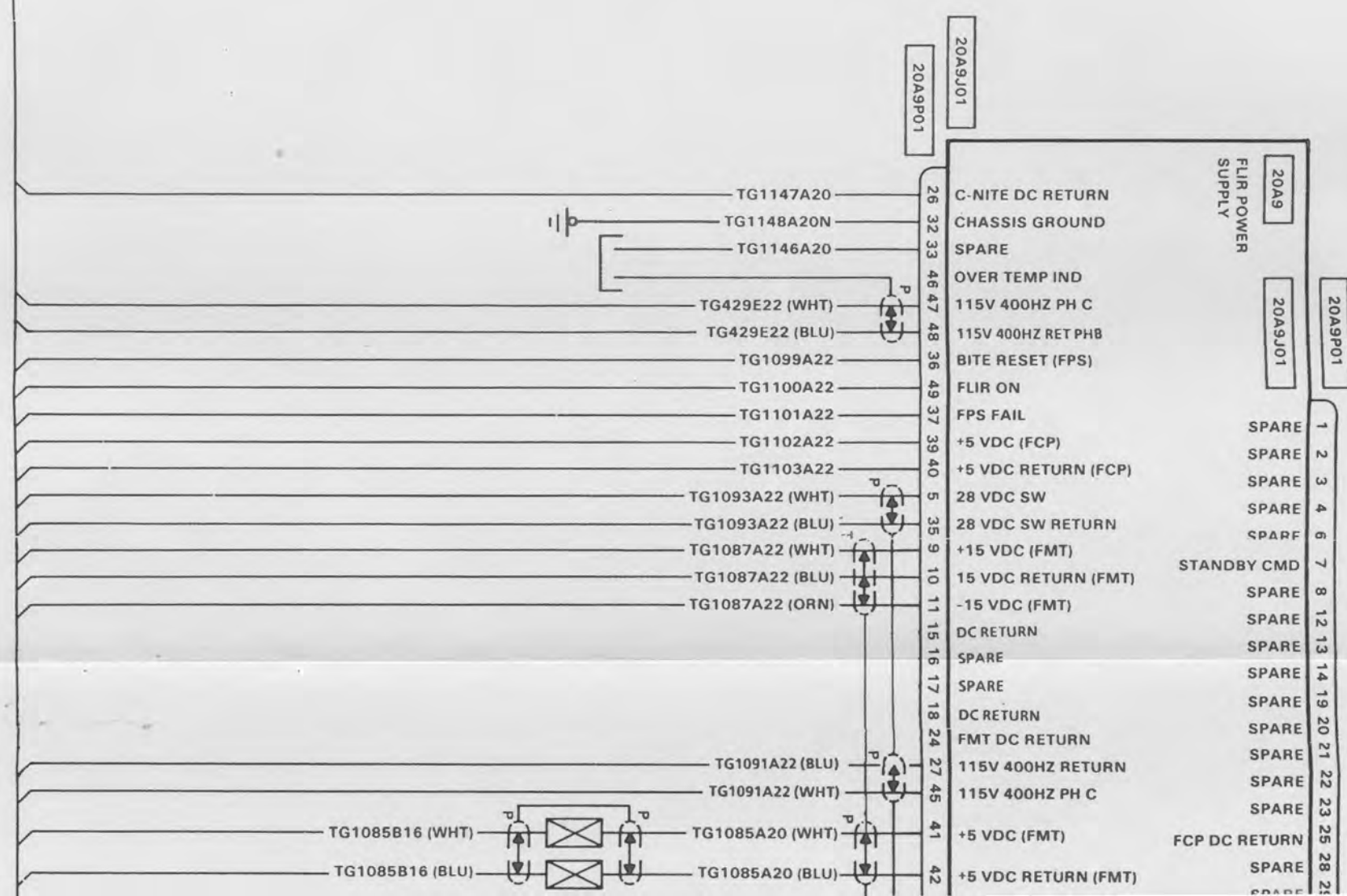
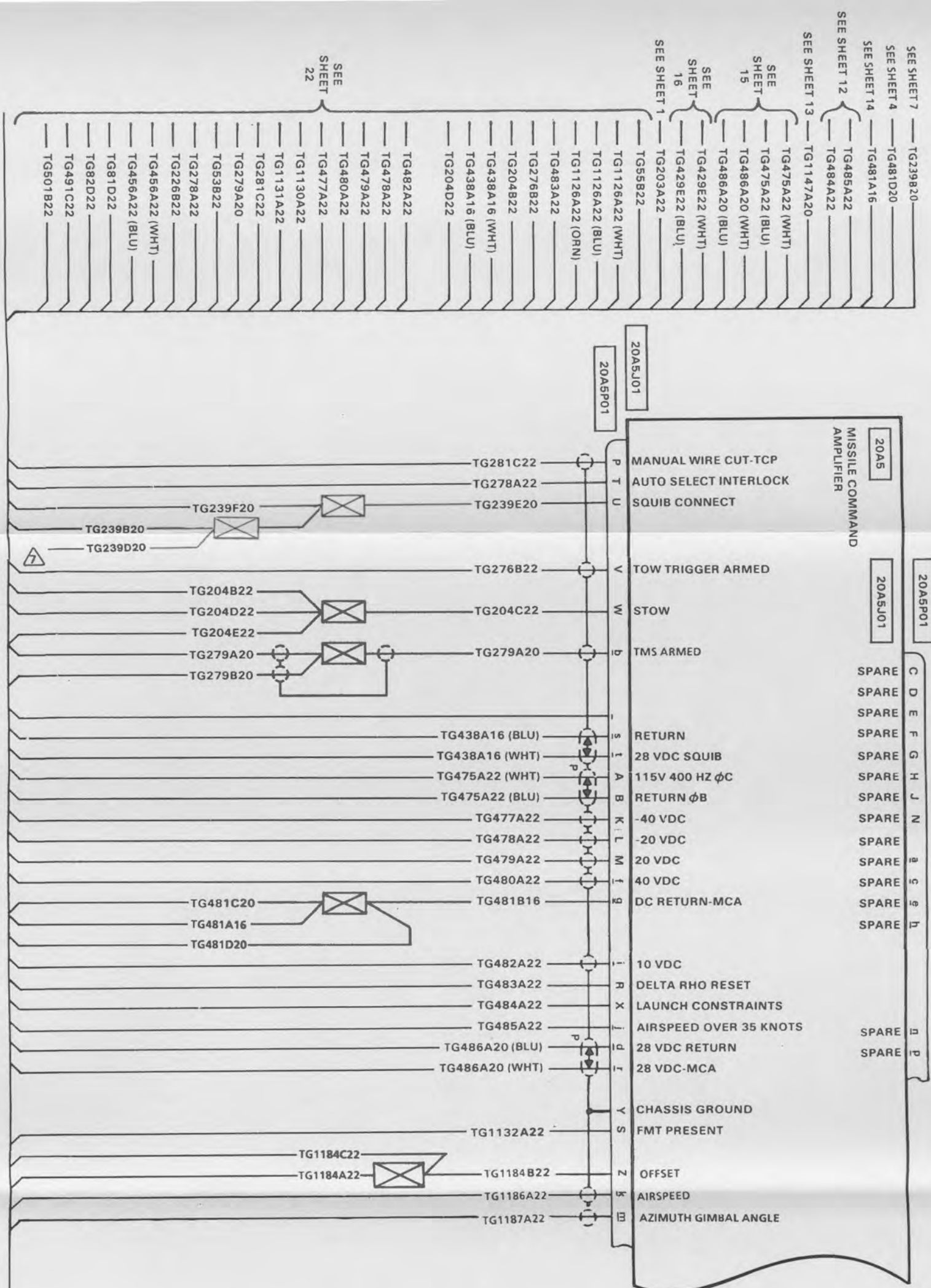
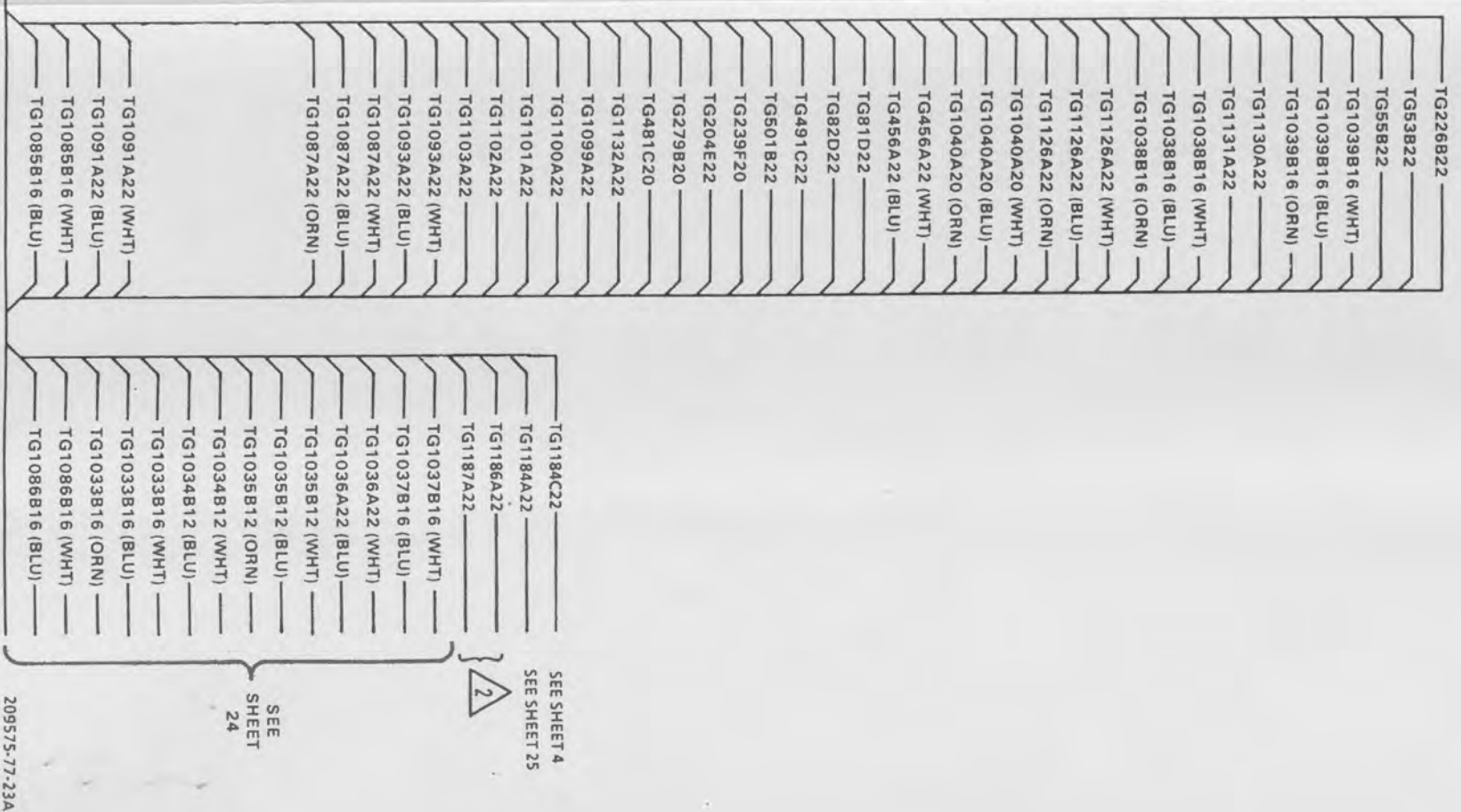
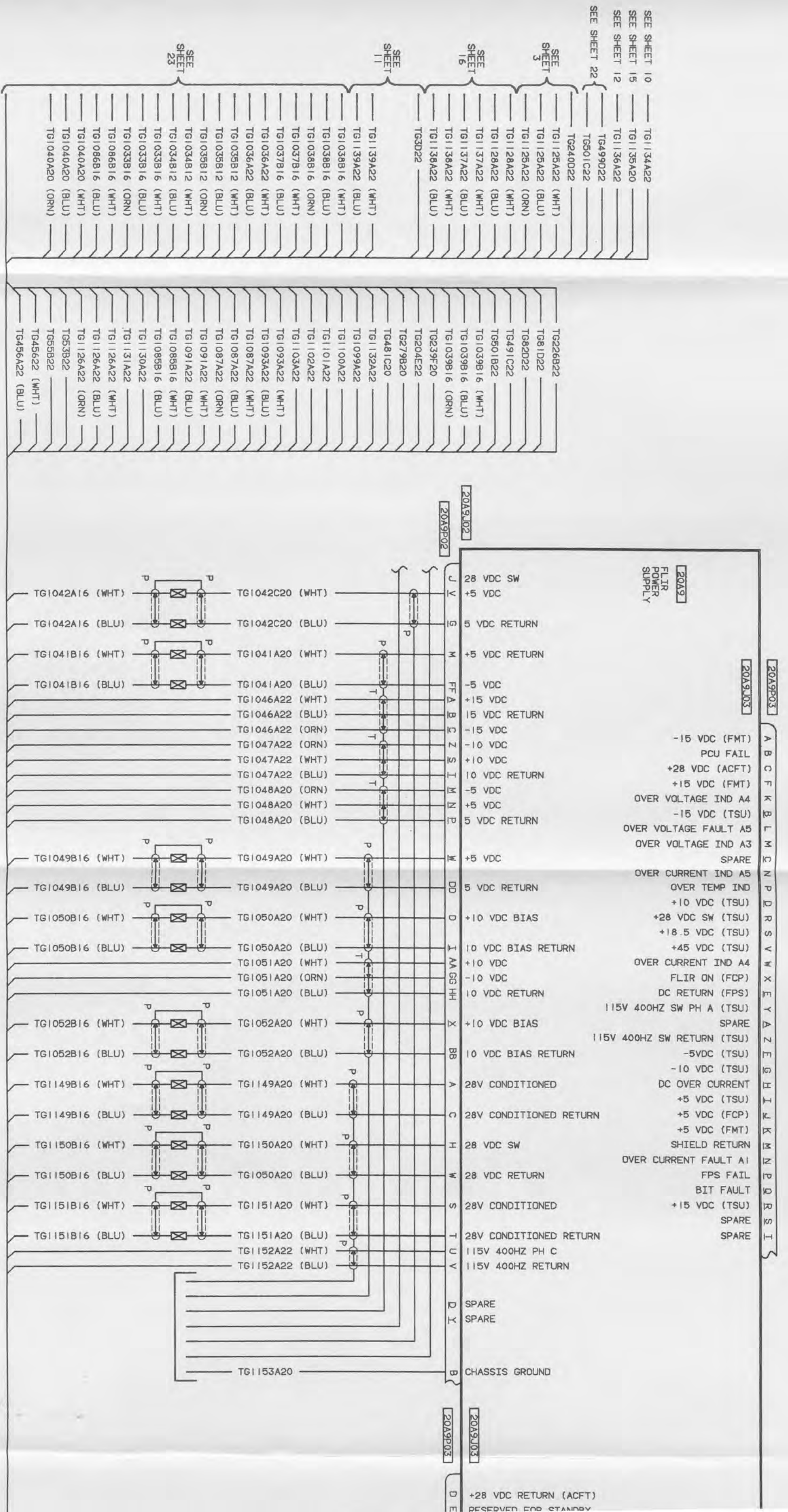


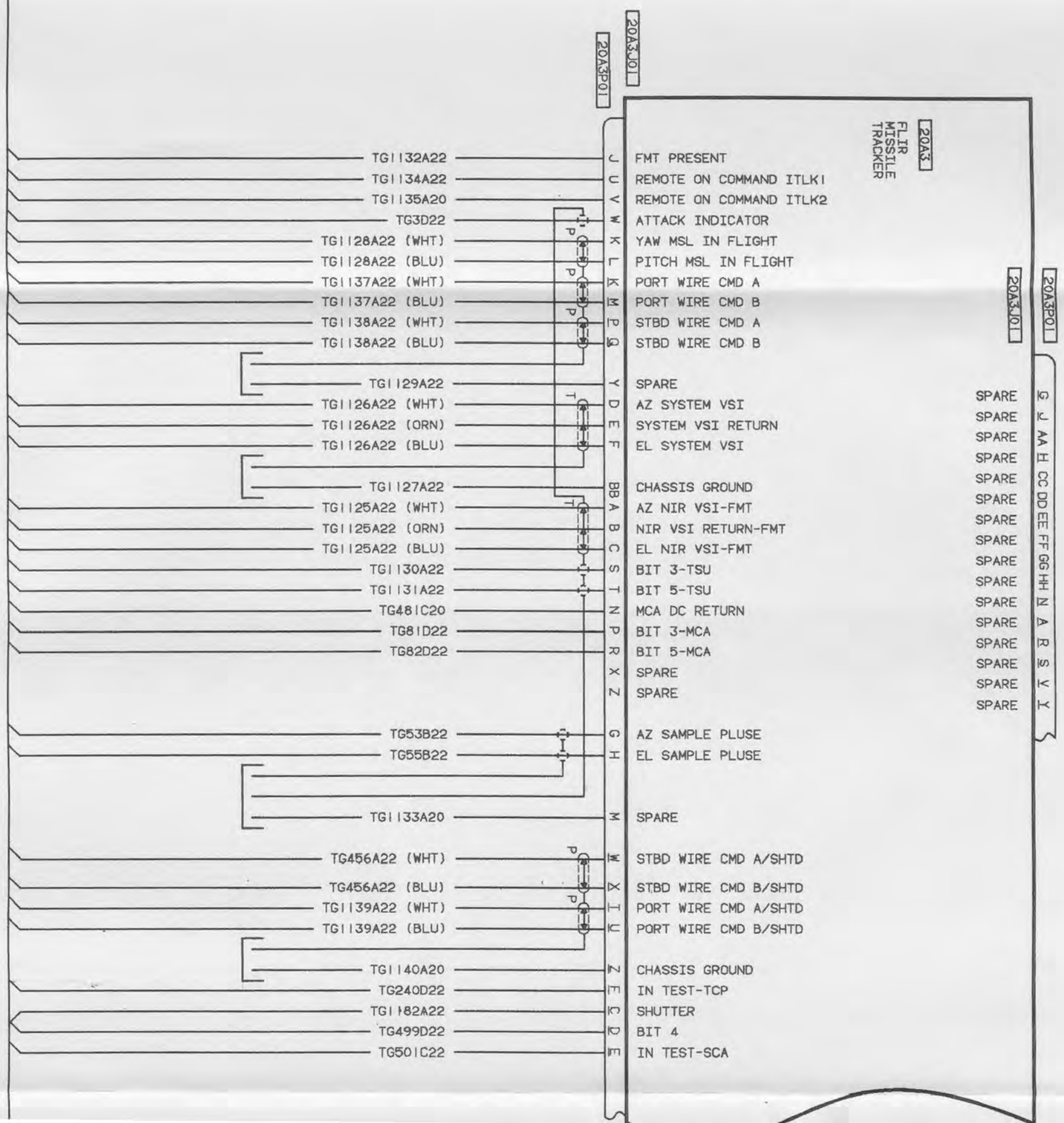
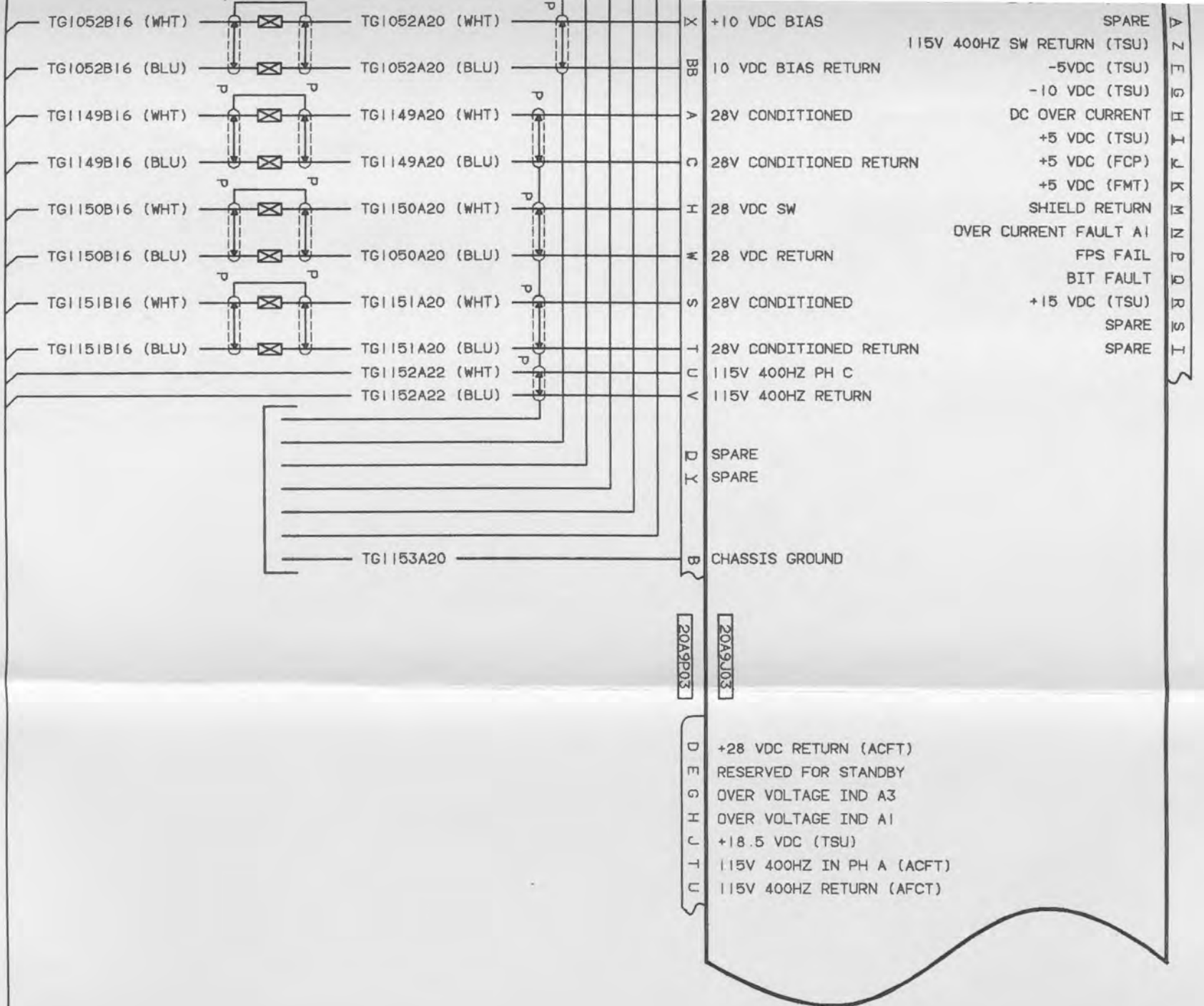
Figure FO-143. MCN TOW Missile Armament Subsystem (Sheet 22 of 28)





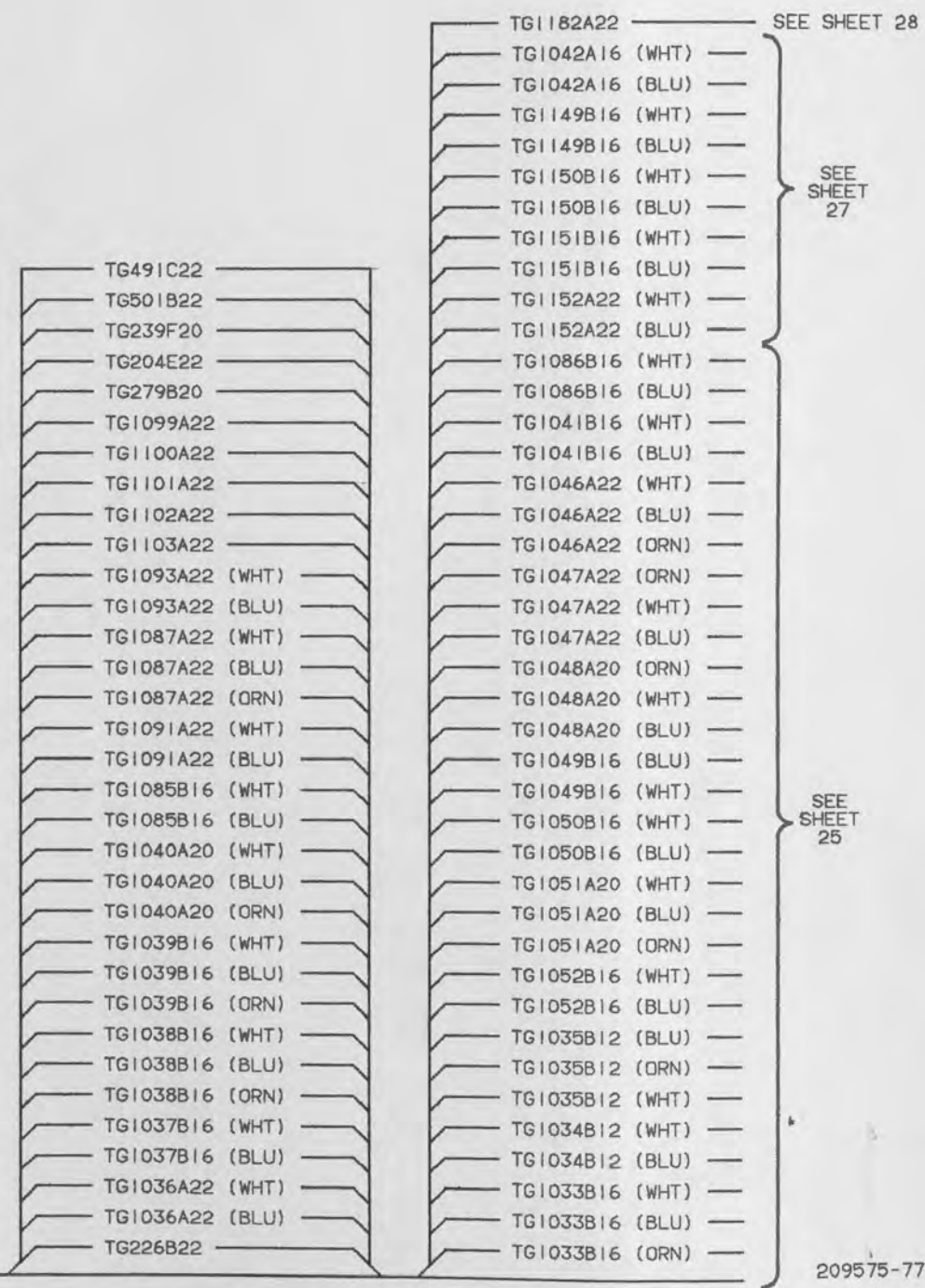
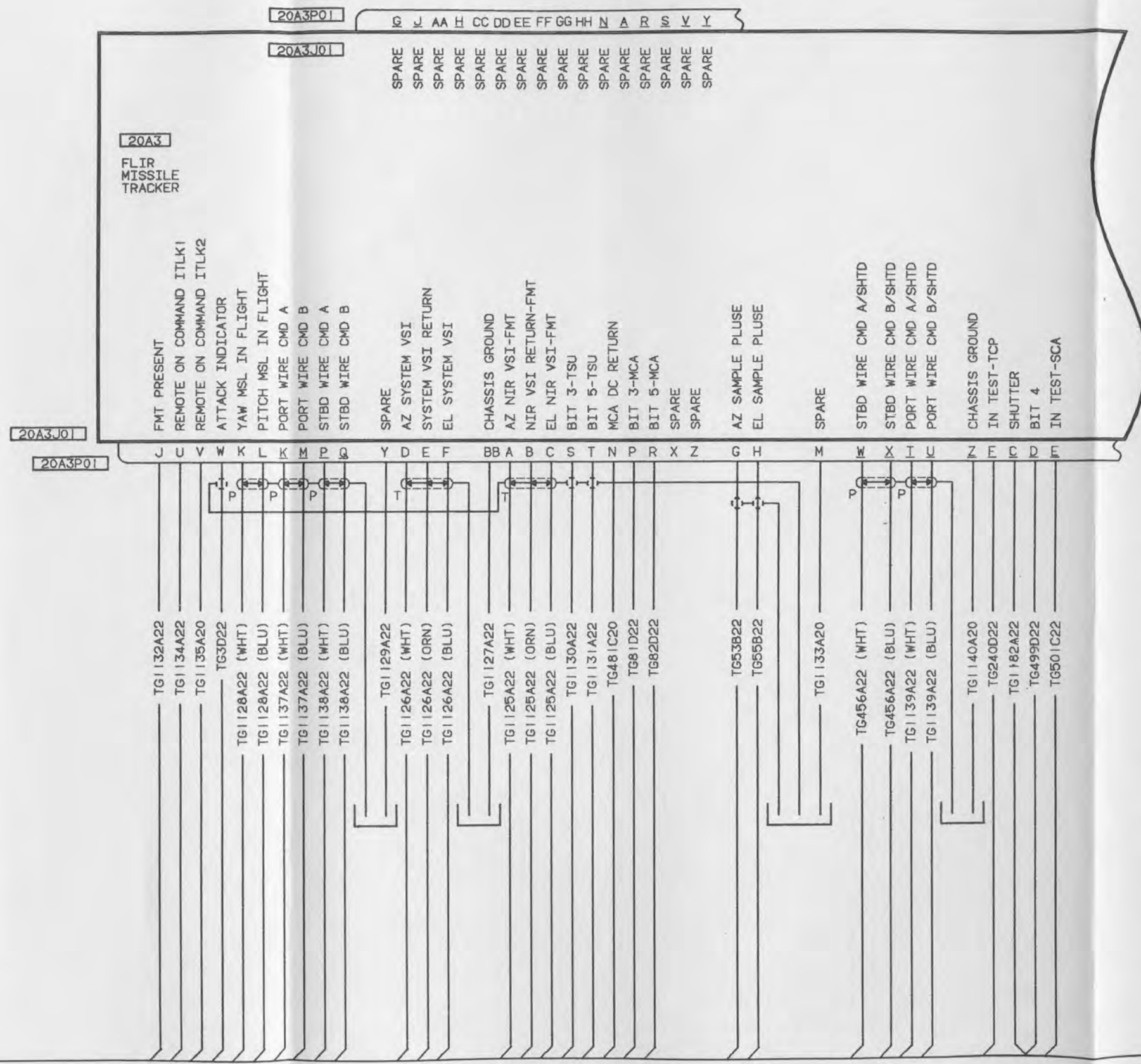
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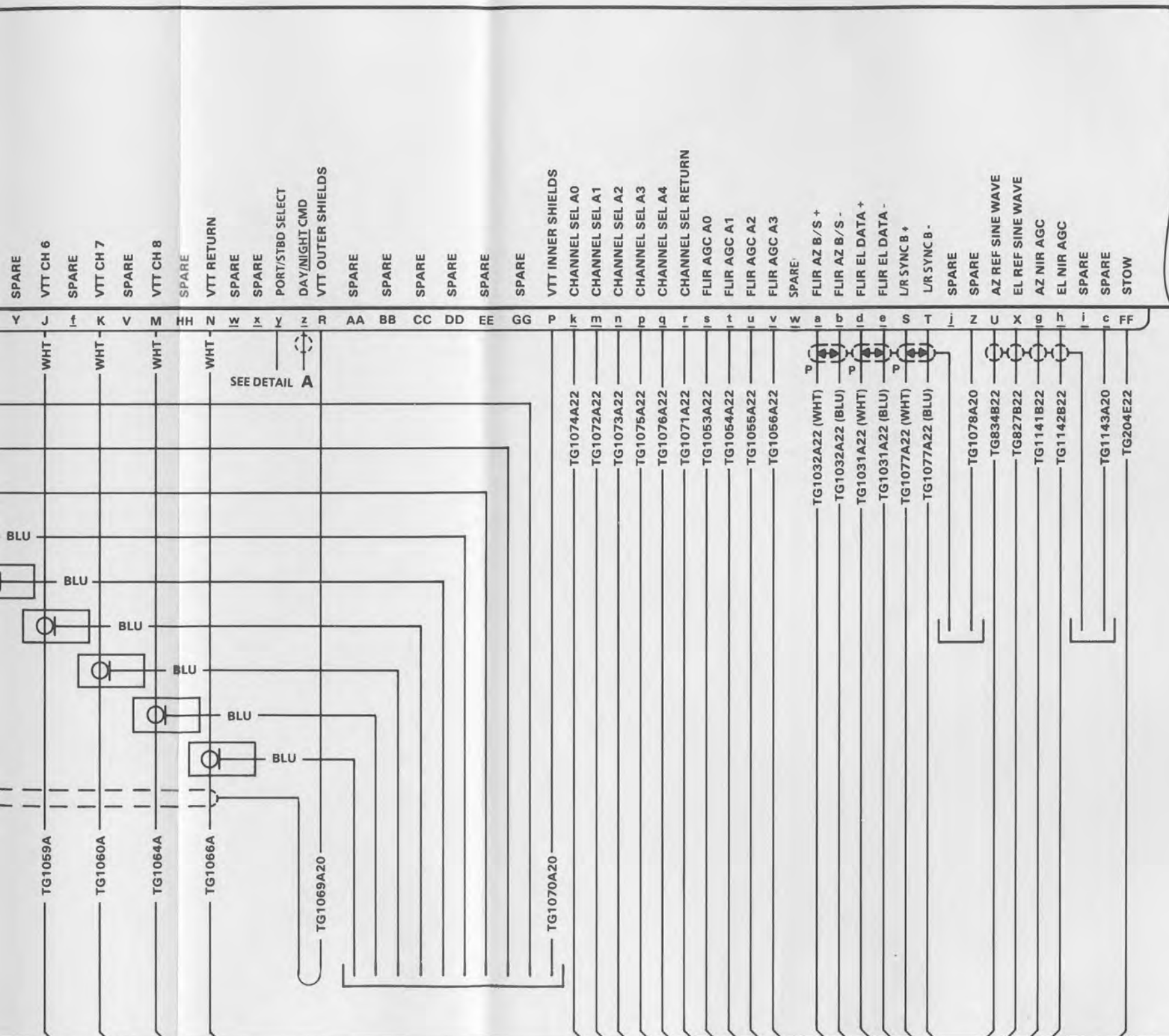
115V 400HZ IN PH A (ACFT)
115V 400HZ RETURN (AFCT)

T U



209575-77-24A

Figure FO-143. MCN TOW Missile Armament Subsystem (Sheet 24 of 28)



- TG501B22
- TG1099A22
- TG1100A22
- TG1101A22
- TG1102A22
- TG1103A22

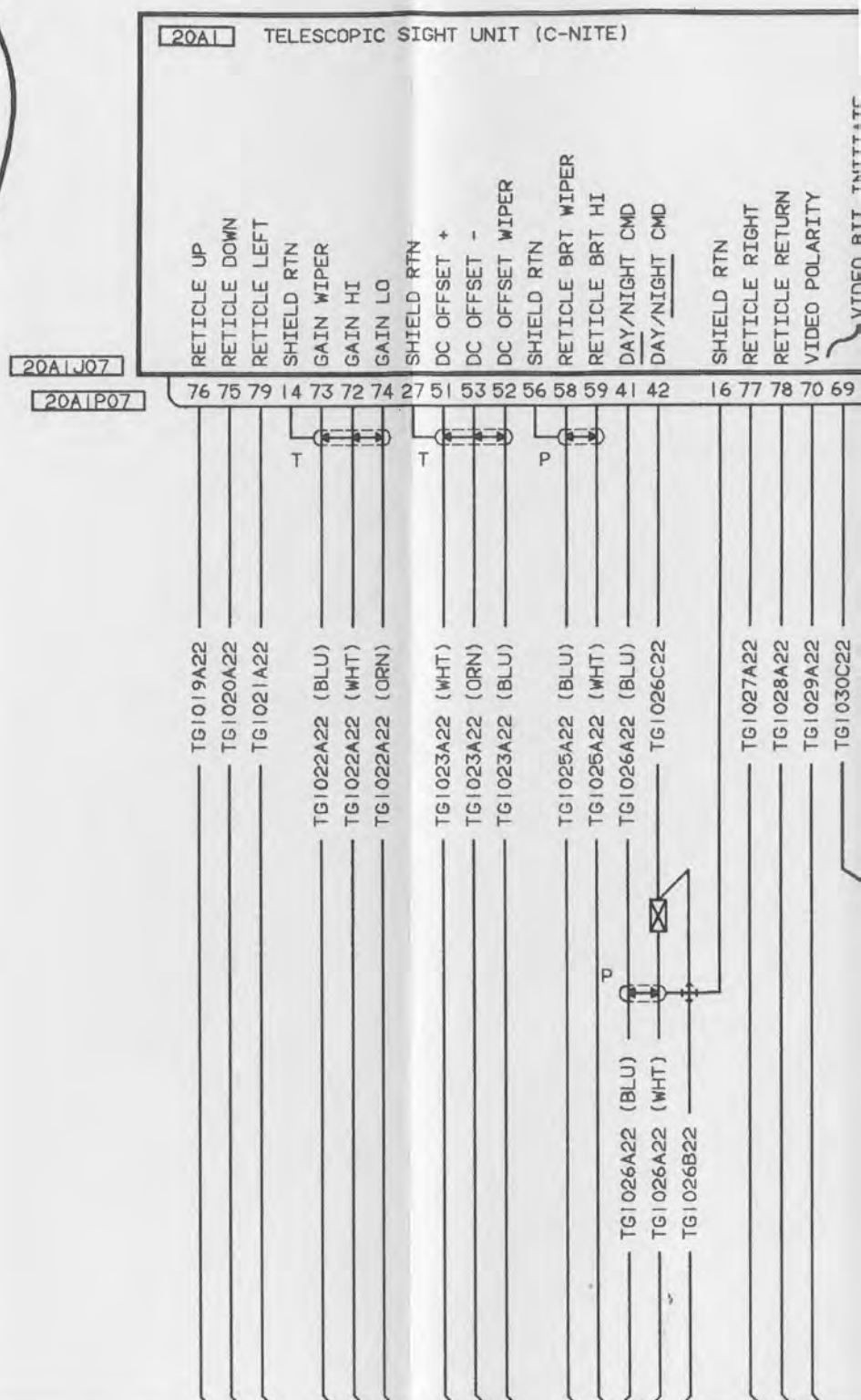
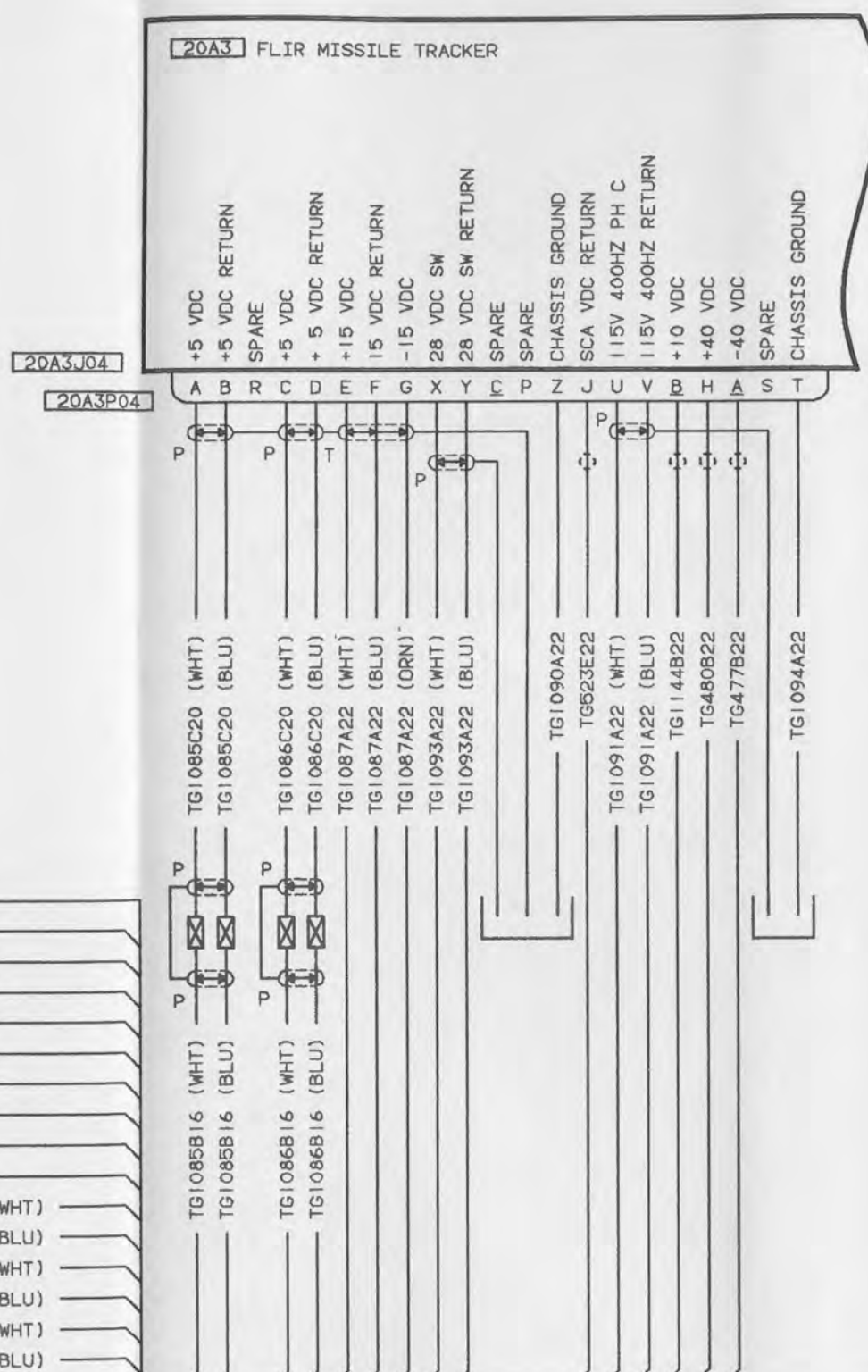
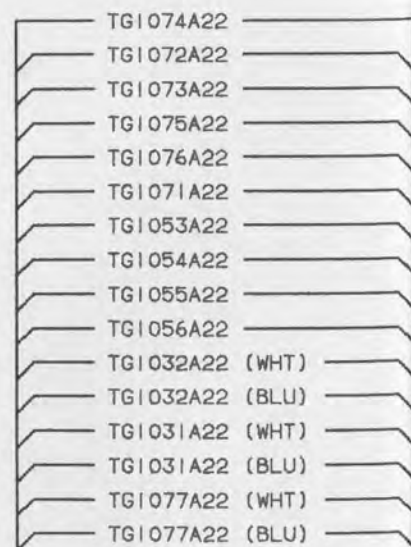
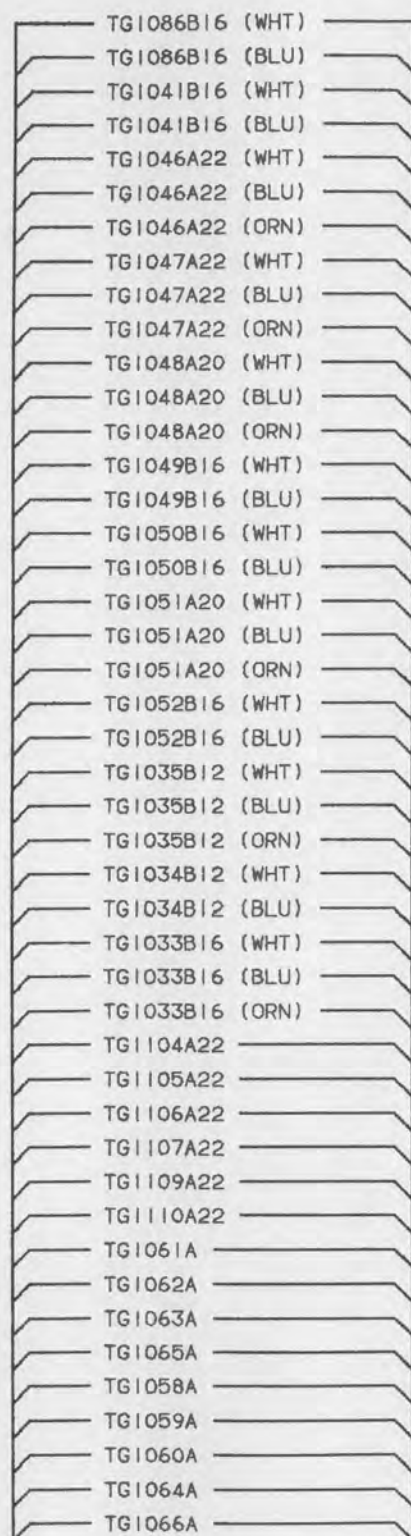
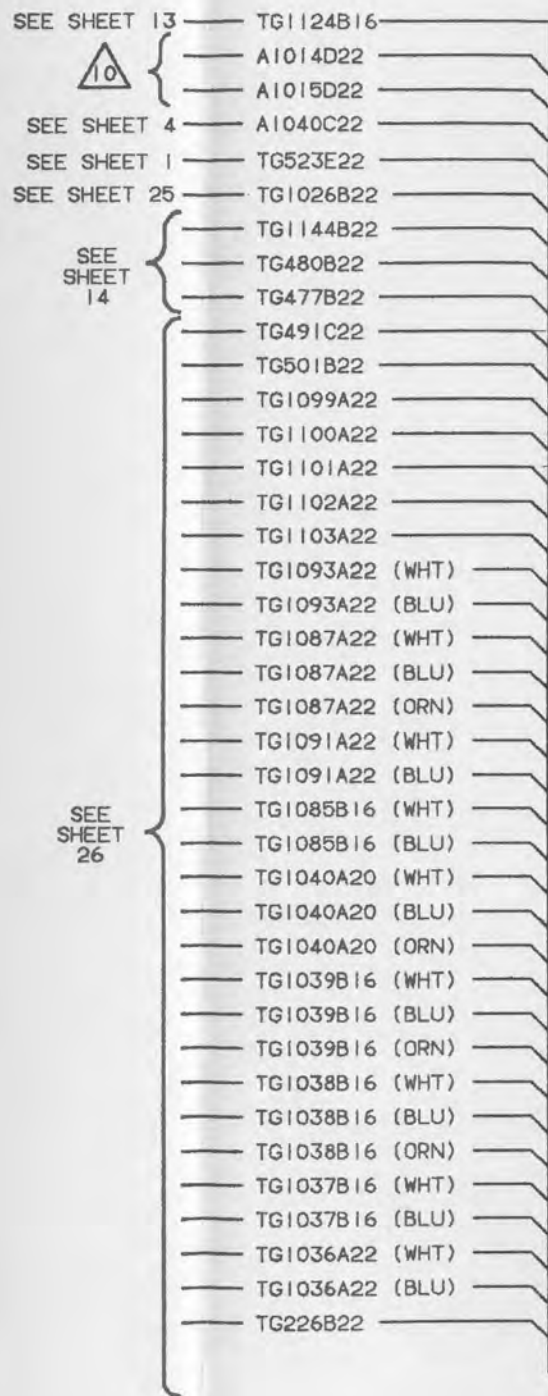
- TG1093A22 (WHT)
- TG1093A22 (BLU)
- TG1087A22 (WHT)
- TG1087A22 (BLU)
- TG1087A22 (ORN)
- TG1091A22 (WHT)
- TG1091A22 (BLU)
- TG1085B16 (WHT)
- TG1085B16 (BLU)
- TG1040A20 (WHT)
- TG1040A20 (BLU)
- TG1040A20 (ORN)
- TG1039B16 (WHT)
- TG1039B16 (BLU)
- TG1039B16 (ORN)
- TG1038B16 (WHT)
- TG1038B16 (BLU)
- TG1038B16 (ORN)
- TG1037B16 (WHT)
- TG1037B16 (BLU)
- TG1036A22 (WHT)
- TG1036A22 (BLU)
- TG226B22
- TG1086B16 (WHT)
- TG1086B16 (BLU)
- TG1041B16 (WHT)
- TG1041B16 (BLU)
- TG1046A22 (WHT)
- TG1046A22 (BLU)
- TG1046A22 (ORN)
- TG1047A22 (WHT)
- TG1047A22 (BLU)
- TG1047A22 (ORN)
- TG1048A20 (WHT)
- TG1048A20 (BLU)
- TG1048A20 (ORN)
- TG1049B16 (WHT)
- TG1049B16 (BLU)
- TG1050B16 (WHT)
- TG1050B16 (BLU)
- TG1051A20 (WHT)

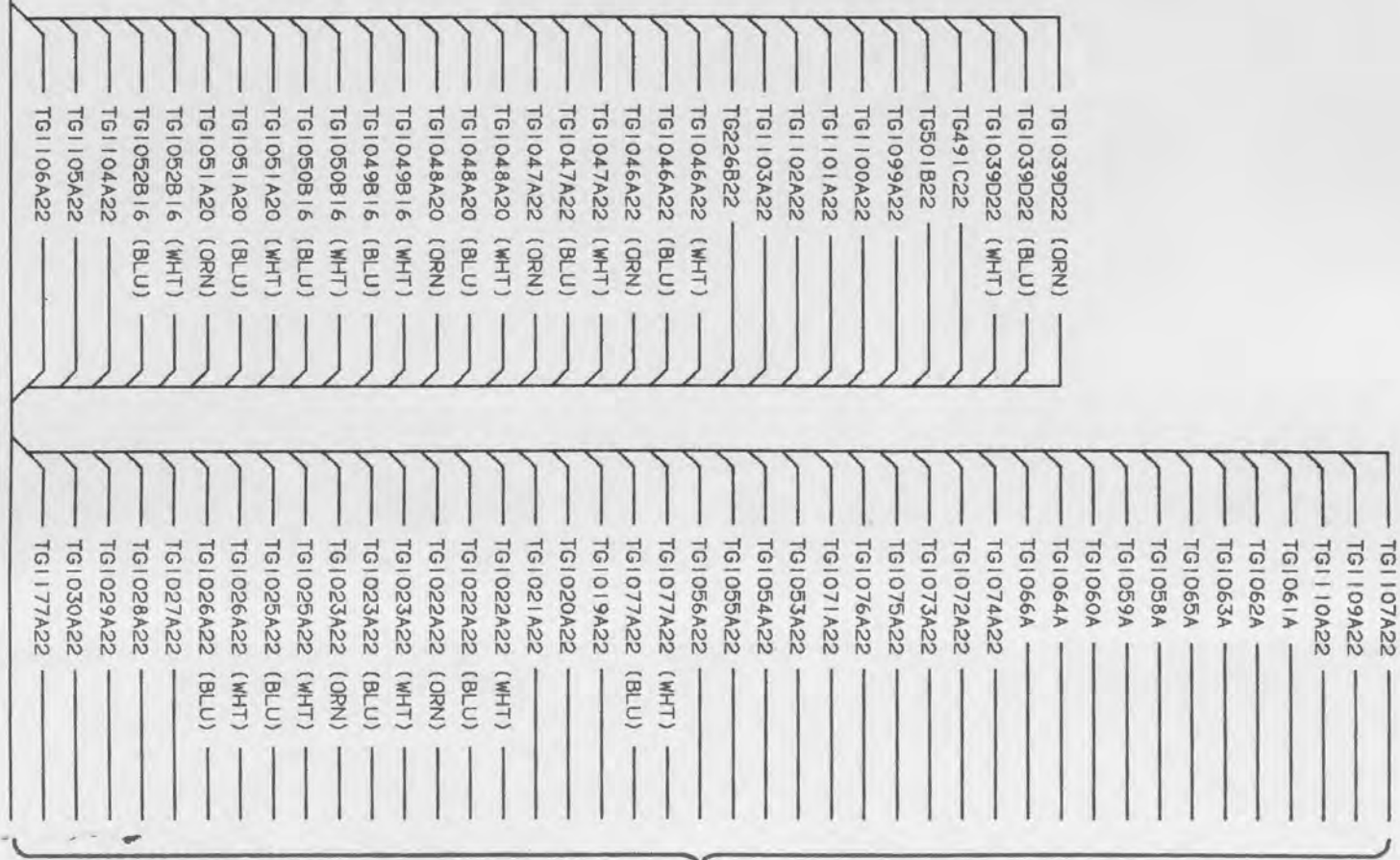
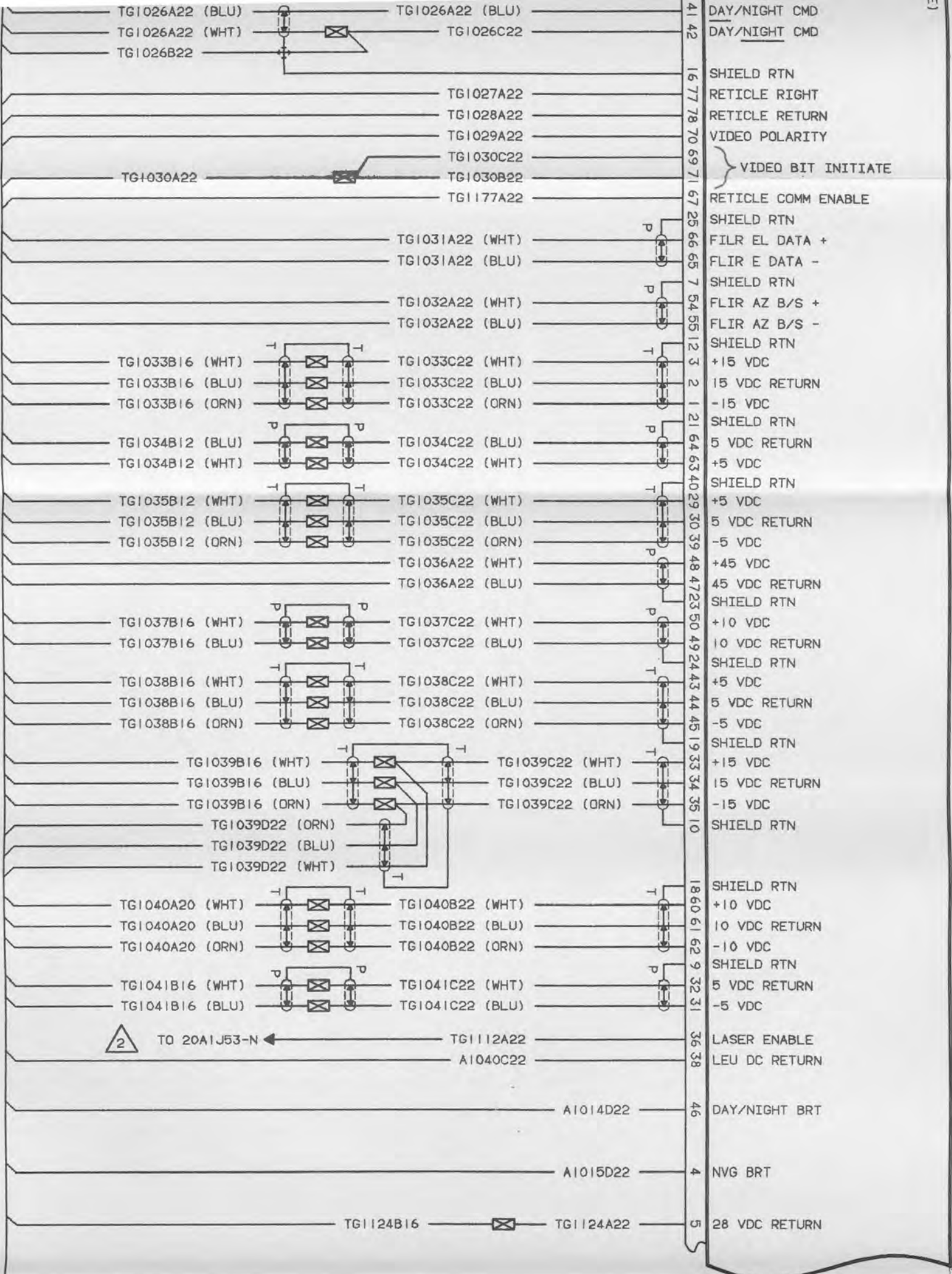
- TG1026B22
- TG1108A22
- TG1051A20 (BLU)
- TG1051A20 (ORN)
- TG1052B16 (WHT)
- TG1052B16 (BLU)
- TG1035B12 (WHT)
- TG1035B12 (BLU)
- TG1035B12 (ORN)
- TG1034B12 (WHT)
- TG1034B12 (BLU)
- TG1033B16 (WHT)
- TG1033B16 (BLU)
- TG1033B16 (ORN)
- TG1104A22
- TG1105A22
- TG1106A22
- TG1107A22
- TG1109A22
- TG1110A22
- TG1061A
- TG1062A
- TG1063A
- TG1065A
- TG1058A
- TG1059A
- TG1060A
- TG1064A
- TG1066A
- TG1074A22
- TG1072A22
- TG1073A22
- TG1075A22
- TG1076A22
- TG1071A22
- TG1053A22
- TG1054A22
- TG1055A22
- TG1056A22
- TG1032A22 (WHT)
- TG1032A22 (BLU)
- TG1031A22 (WHT)
- TG1031A22 (BLU)
- TG1077A22 (WHT)
- TG1077A22 (BLU)
- TG491C22

SEE SHEET 26

209575-77-25A

Figure FO-143. MCN TOW Missile Armament Subsystem (Sheet 25 of 28)

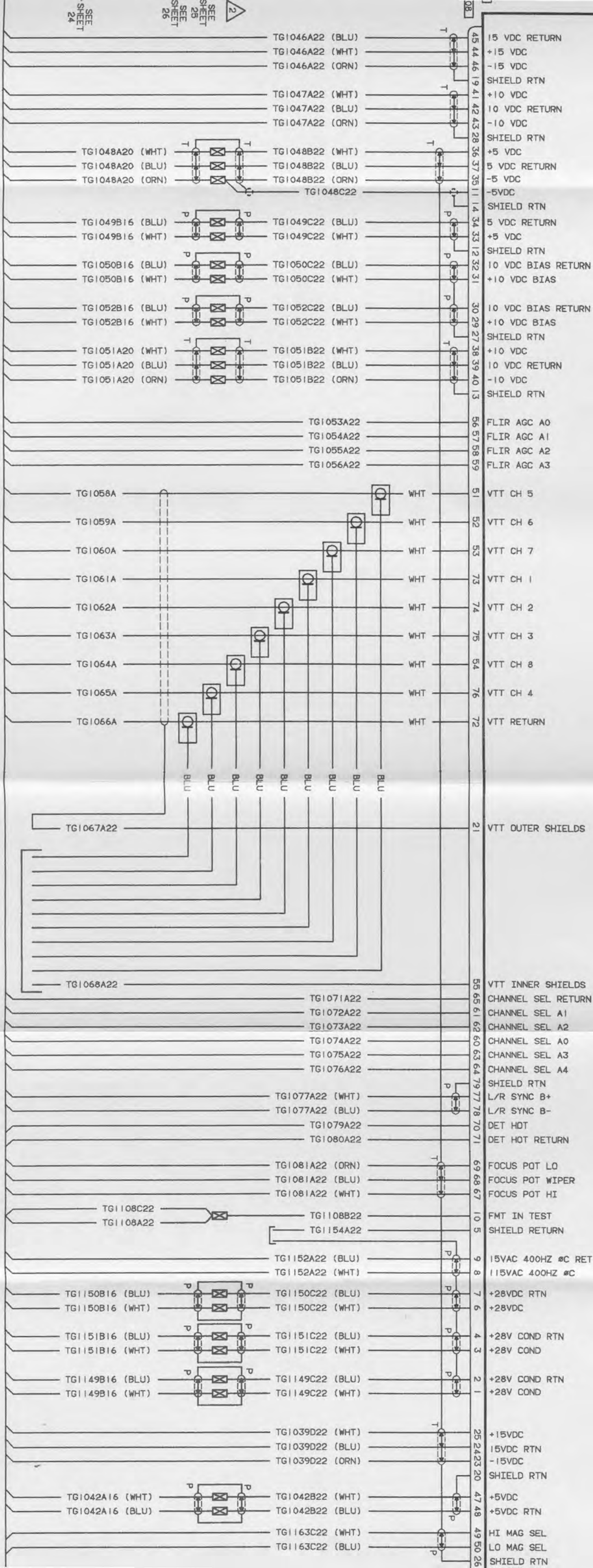




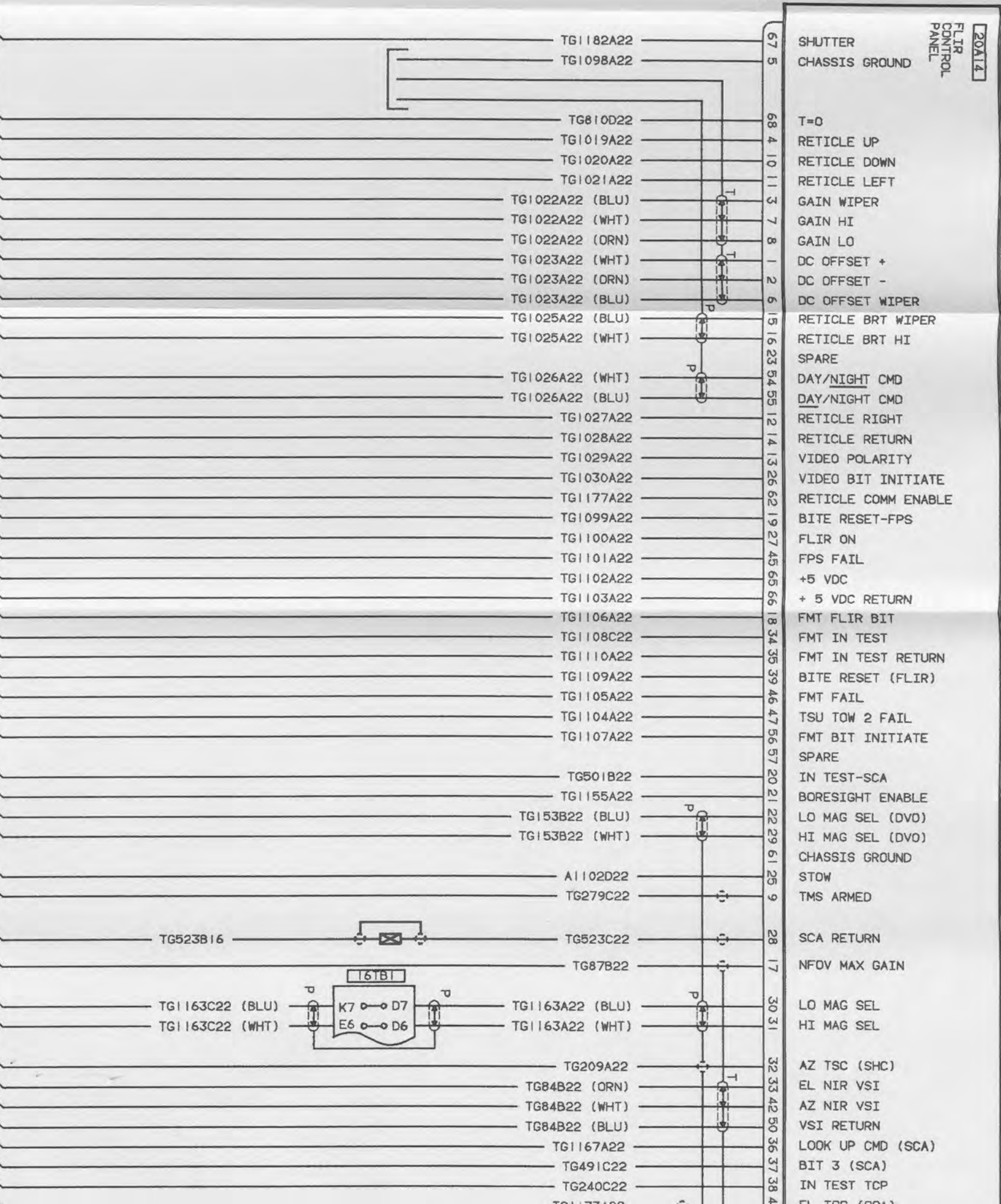
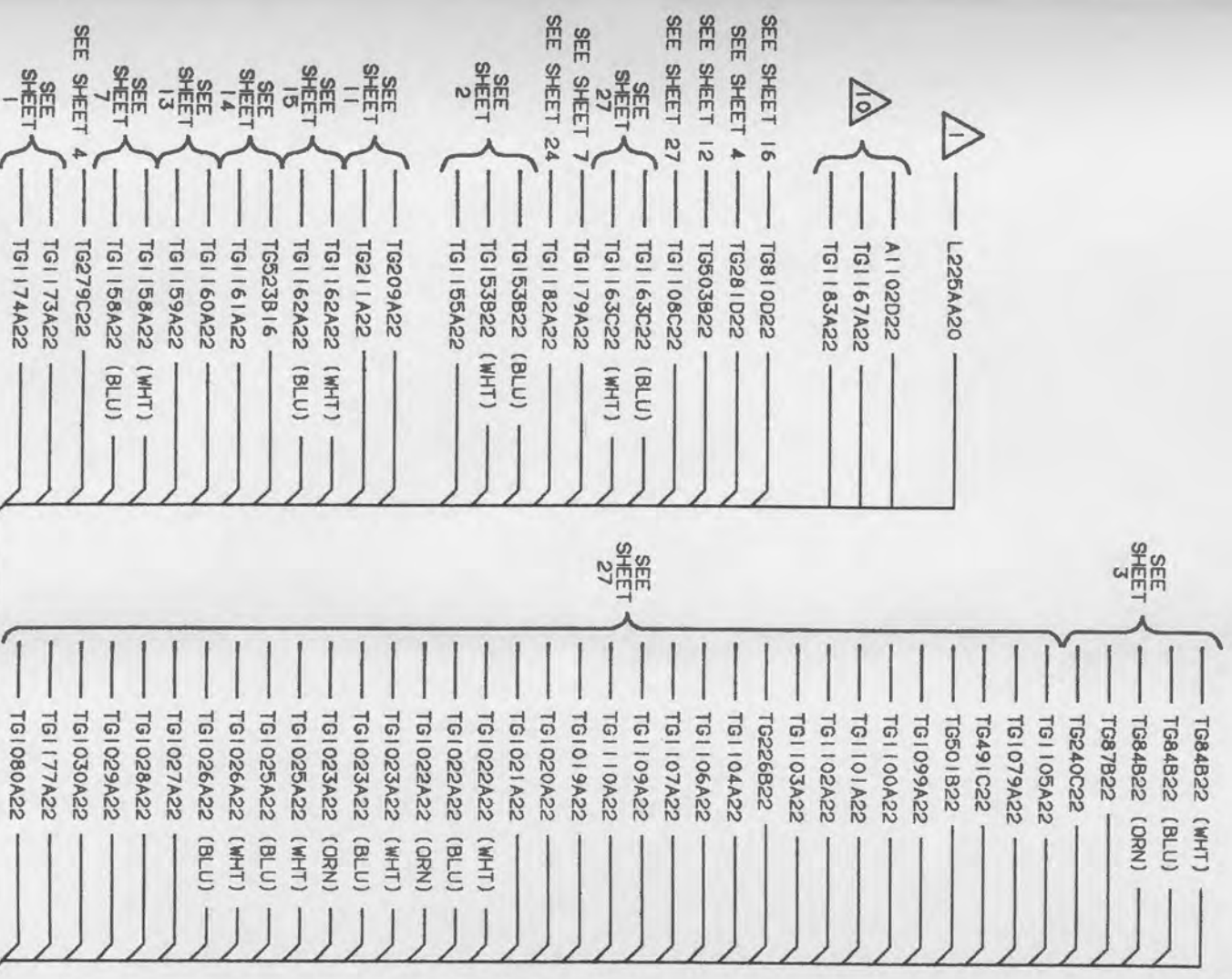
SEE
SHEET
27

Figure FO-143. MCN TOW Missile Armament Subsystem (Sheet 26 of 28)

209575-77-26A







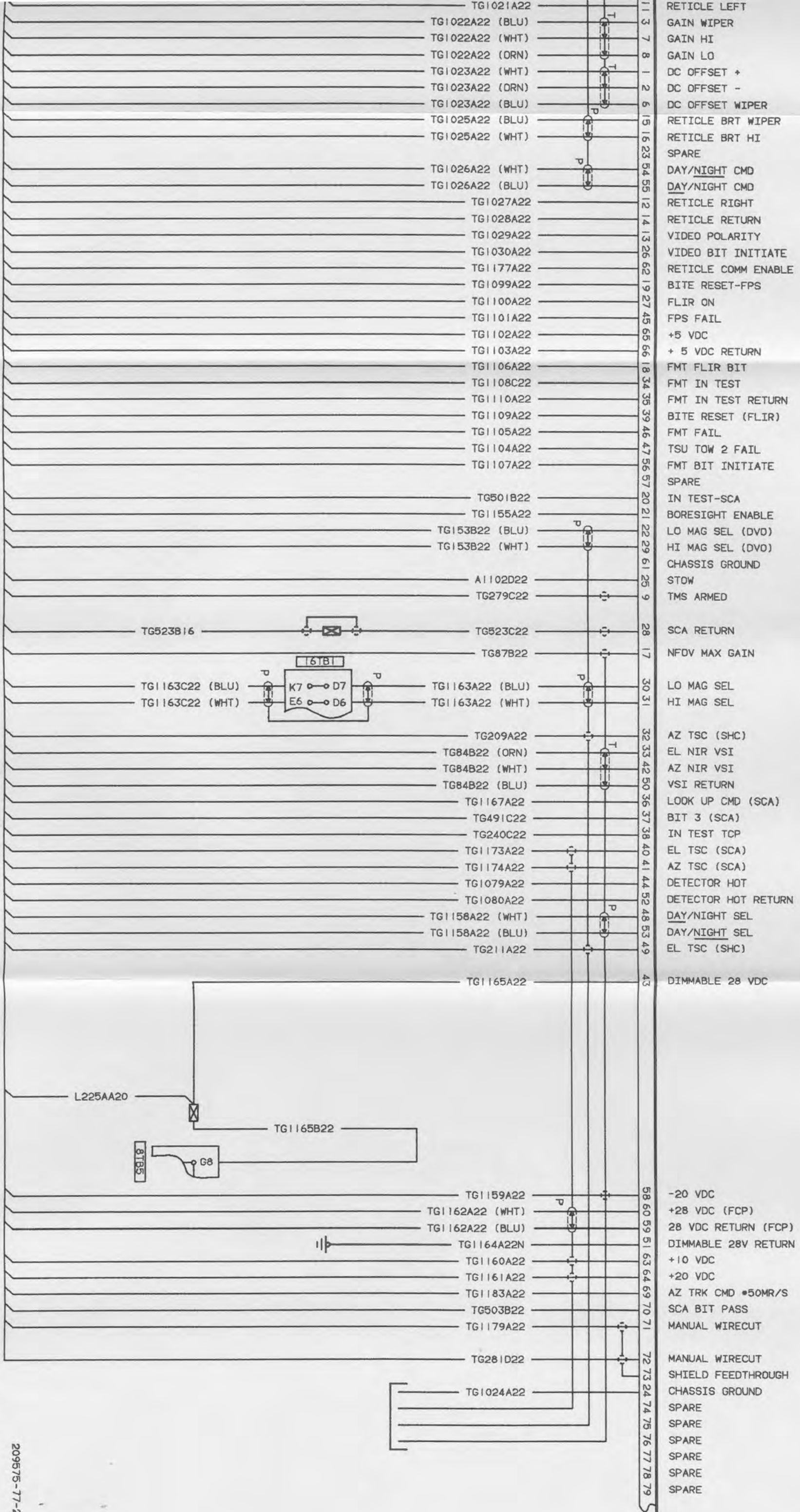
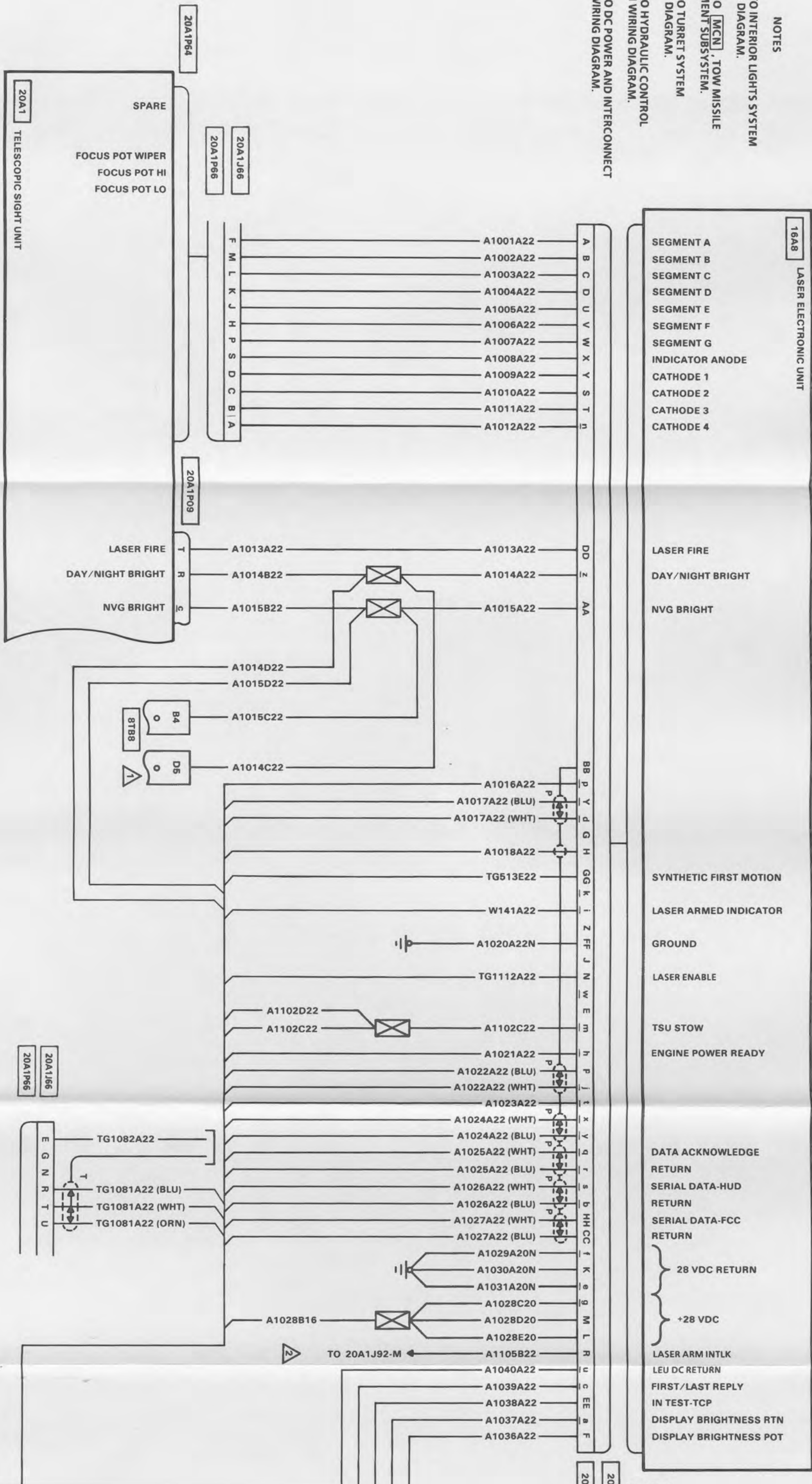


Figure FO-143. MCN TOW Missile Armament Subsystem (Sheet 28 of 28)

209575-77-28A

NOTES

- 1 REFER TO INTERIOR LIGHTS SYSTEM WIRING DIAGRAM.
- 2 REFER TO [MCN], TOW MISSILE ARMAMENT SUBSYSTEM.
- 3 REFER TO TURRET SYSTEM WIRING DIAGRAM.
- 4 REFER TO HYDRAULIC CONTROL SYSTEM WIRING DIAGRAM.
- 5 REFER TO DC POWER AND INTERCONNECT LOGIC WIRING DIAGRAM.



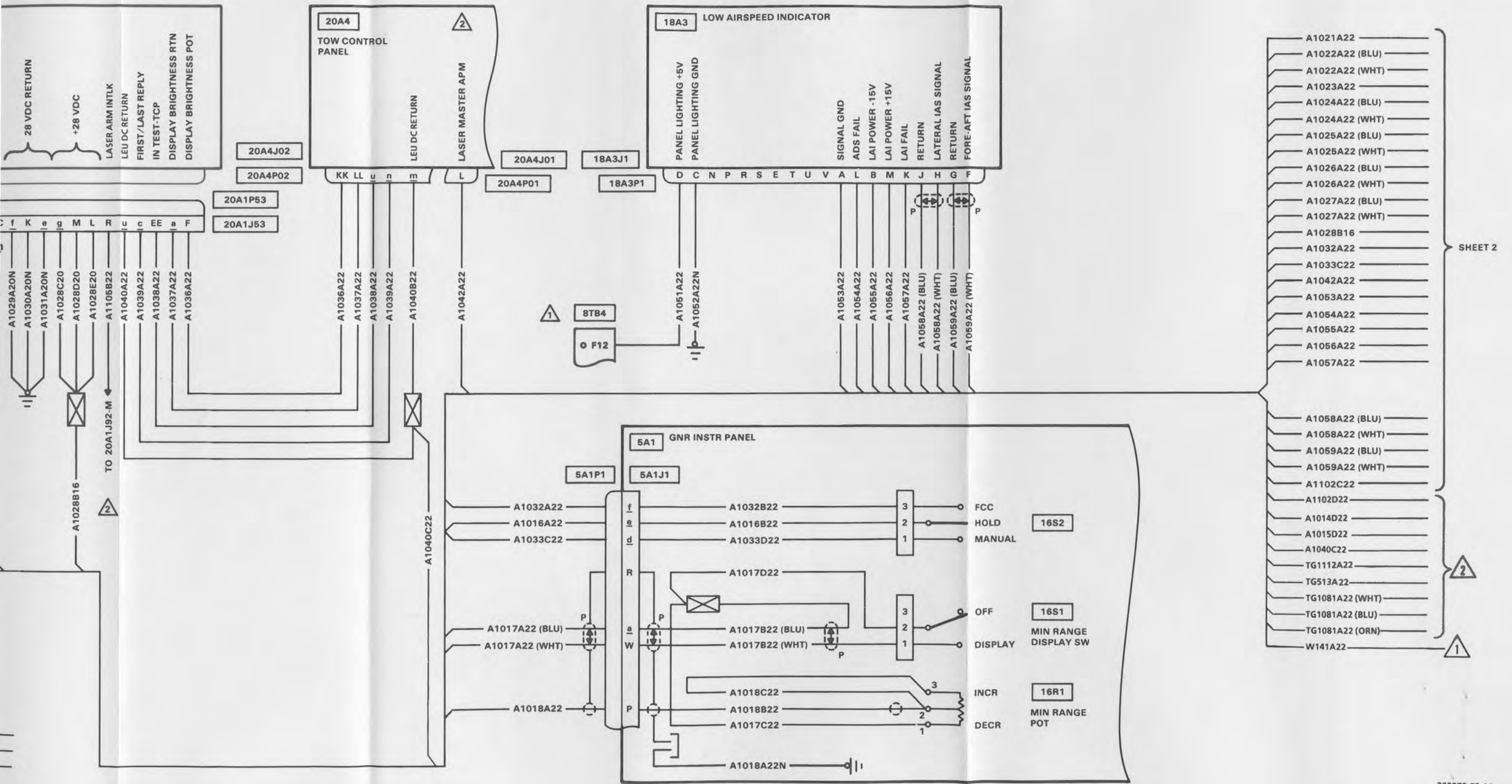
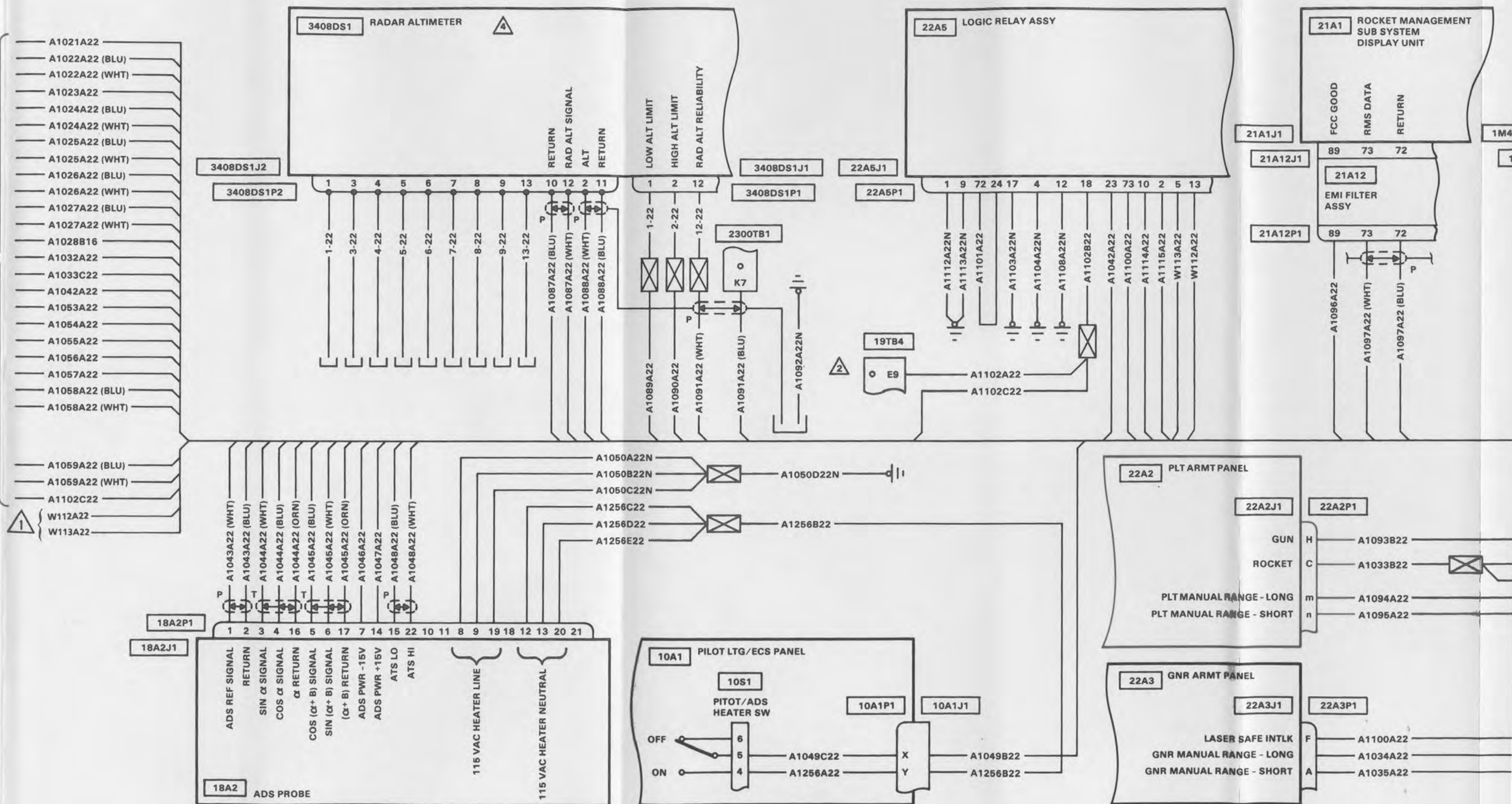
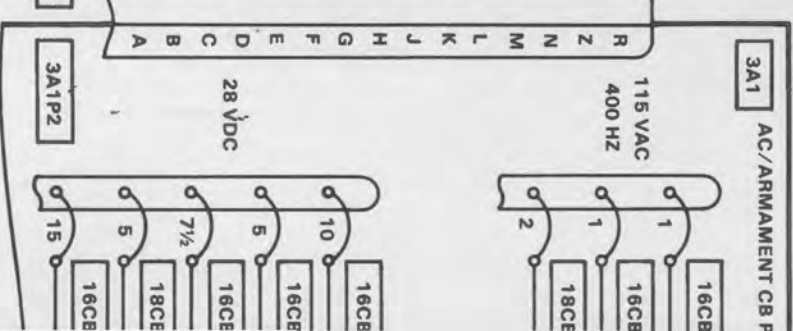


Figure FO-144. MCN Fire Control System (Sheet 1 of 6)

209575-78-1A







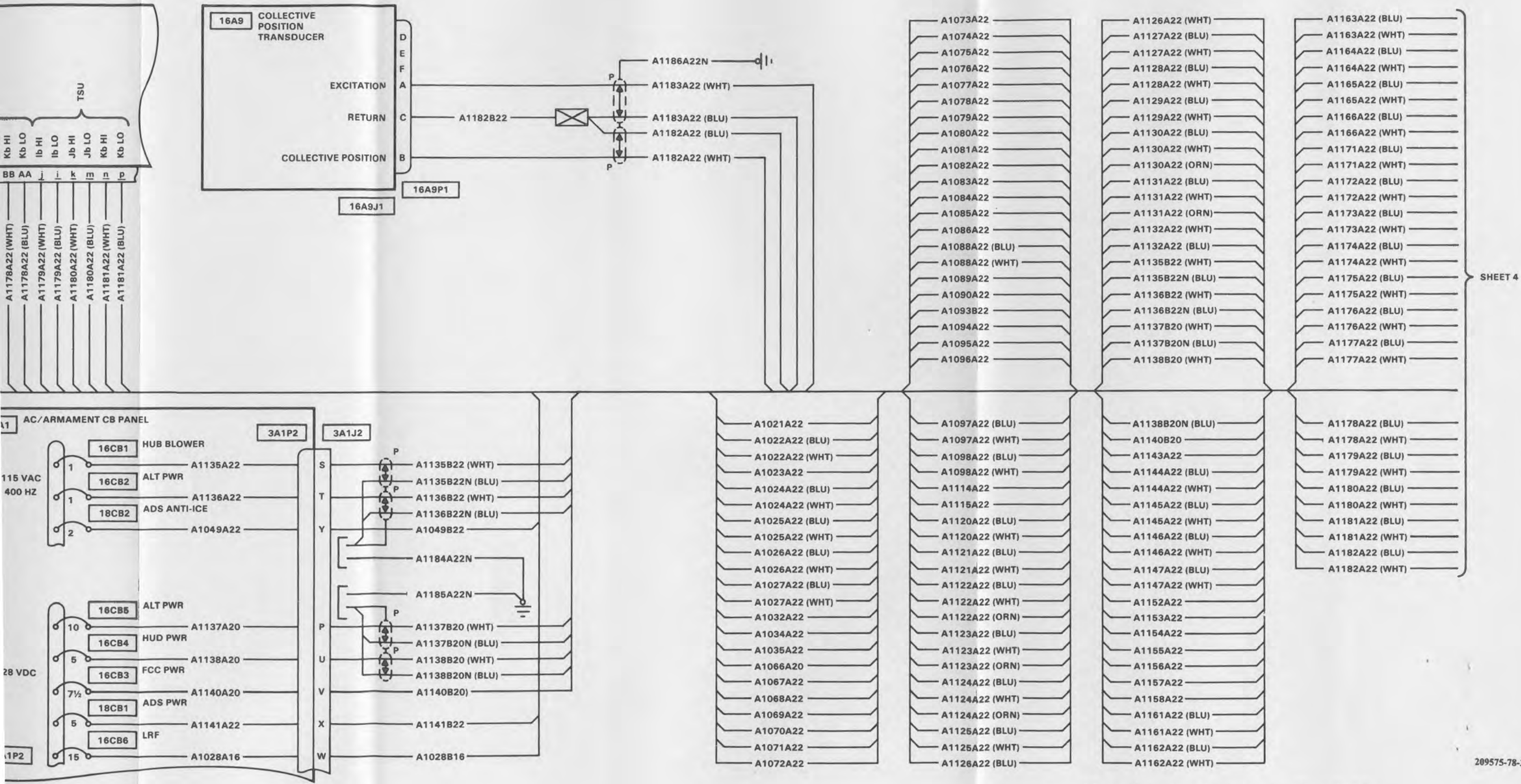


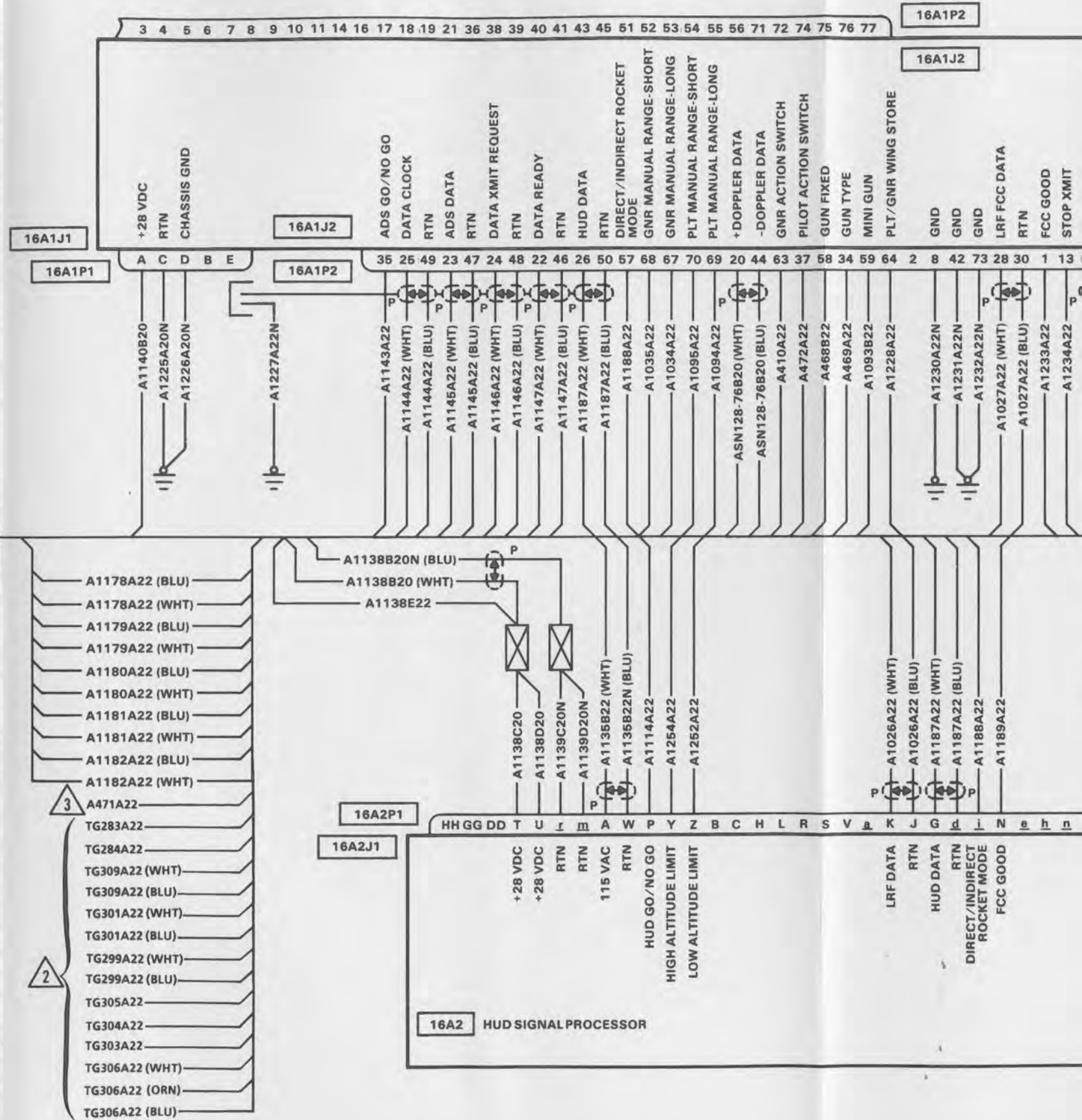
Figure FO-144. MCN Fire Control System (Sheet 3 of 6)

- 3 { A469A22
A468B22
A472B22
A410A22
- 4 { ASN128-76B20 (WHT)
ASN128-76B20 (BLU)

SHEET 3

A1021A22	A1097A22 (BLU)	A1138B20N (BLU)
A1022A22 (BLU)	A1097A22 (WHT)	A1140B20
A1022A22 (WHT)	A1098A22 (BLU)	A1143A22
A1023A22	A1098A22 (WHT)	A1144A22 (BLU)
A1024A22 (BLU)	A1114A22	A1144A22 (WHT)
A1024A22 (WHT)	A1115A22	A1145A22 (BLU)
A1025A22 (BLU)	A1120A22 (BLU)	A1145A22 (WHT)
A1025A22 (WHT)	A1120A22 (WHT)	A1146A22 (BLU)
A1026A22 (BLU)	A1121A22 (BLU)	A1146A22 (WHT)
A1026A22 (WHT)	A1121A22 (WHT)	A1147A22 (BLU)
A1027A22 (BLU)	A1122A22 (BLU)	A1147A22 (WHT)
A1027A22 (WHT)	A1122A22 (WHT)	A1152A22
A1032A22	A1122A22 (ORN)	A1153A22
A1034A22	A1123A22 (BLU)	A1154A22
A1035A22	A1123A22 (WHT)	A1155A22
A1066A20	A1123A22 (ORN)	A1156A22
A1067A22	A1124A22 (BLU)	A1157A22
A1068A22	A1124A22 (WHT)	A1158A22
A1069A22	A1124A22 (ORN)	A1161A22 (BLU)
A1070A22	A1125A22 (BLU)	A1161A22 (WHT)
A1071A22	A1125A22 (WHT)	A1162A22 (BLU)
A1072A22	A1126A22 (BLU)	A1162A22 (WHT)

A1073A22	A1126A22 (WHT)	A1163A22 (BLU)
A1074A22	A1127A22 (BLU)	A1163A22 (WHT)
A1075A22	A1127A22 (WHT)	A1164A22 (BLU)
A1076A22	A1128A22 (BLU)	A1164A22 (WHT)
A1077A22	A1128A22 (WHT)	A1165A22 (BLU)
A1078A22	A1129A22 (BLU)	A1165A22 (WHT)
A1079A22	A1129A22 (WHT)	A1166A22 (BLU)
A1080A22	A1130A22 (BLU)	A1166A22 (WHT)
A1081A22	A1130A22 (WHT)	A1171A22 (BLU)
A1082A22	A1130A22 (ORN)	A1171A22 (WHT)
A1083A22	A1131A22 (BLU)	A1172A22 (BLU)
A1084A22	A1131A22 (WHT)	A1172A22 (WHT)
A1085A22	A1131A22 (ORN)	A1173A22 (BLU)
A1086A22	A1132A22 (WHT)	A1173A22 (WHT)
A1088A22 (BLU)	A1132A22 (BLU)	A1174A22 (BLU)
A1088A22 (WHT)	A1135B22 (WHT)	A1174A22 (WHT)
A1089A22	A1135B22N (BLU)	A1175A22 (BLU)
A1090A22	A1136B22 (WHT)	A1175A22 (WHT)
A1093A22	A1136B22N (BLU)	A1176A22 (BLU)
A1094A22	A1137B20 (WHT)	A1176A22 (WHT)
A1095A22	A1137B20N (BLU)	A1177A22 (BLU)
A1096A22	A1138B20 (WHT)	A1177A22 (WHT)



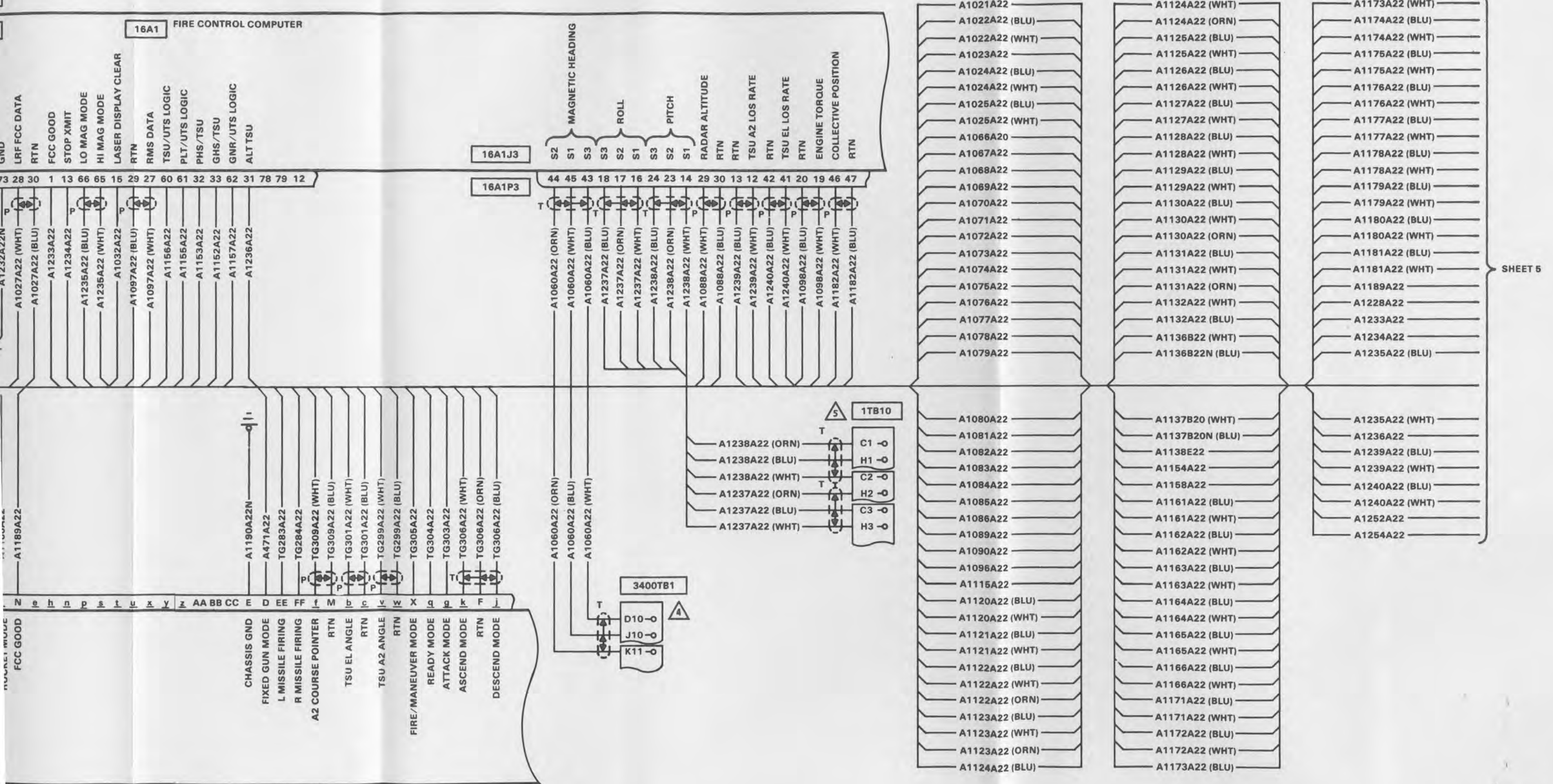
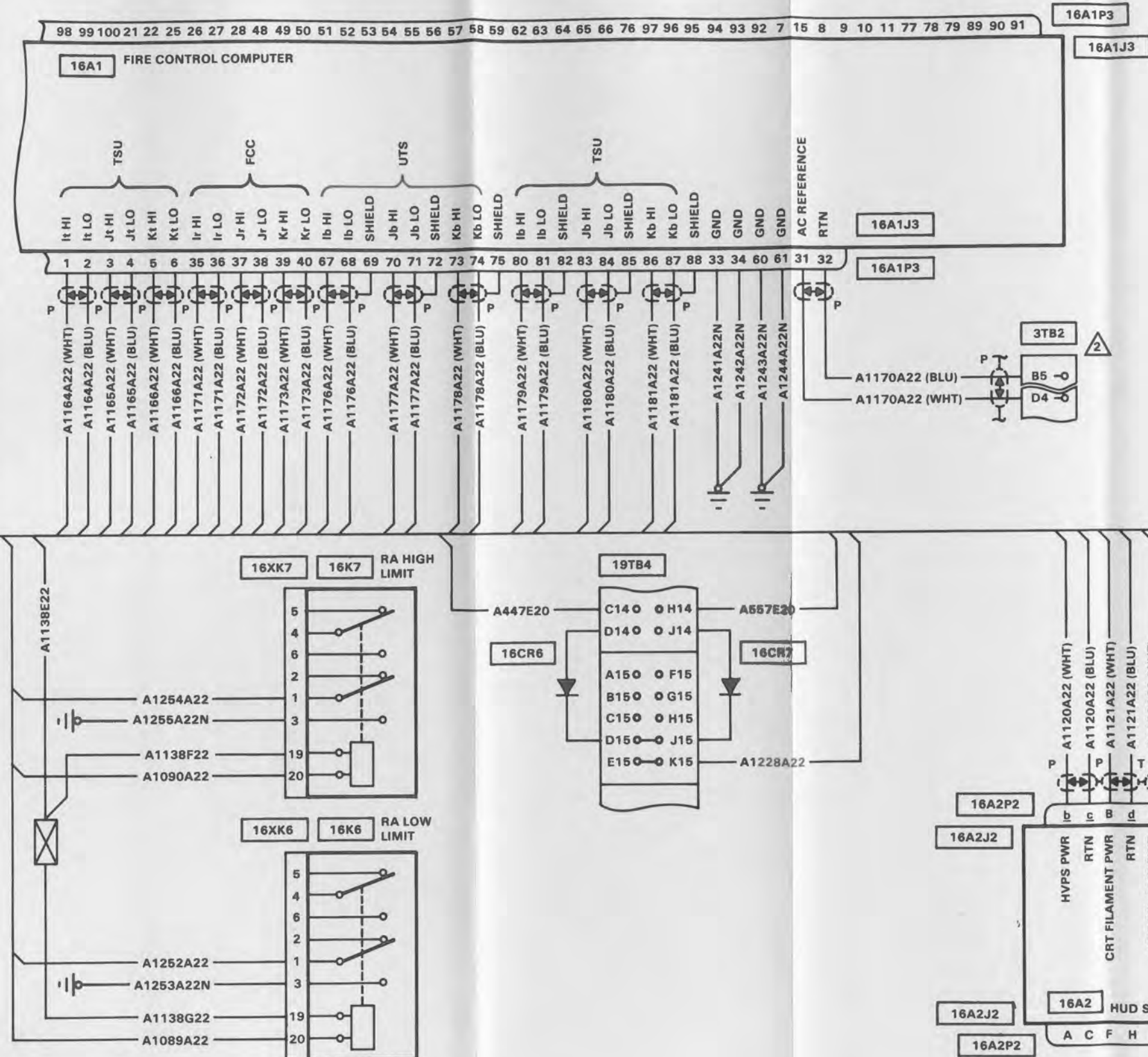
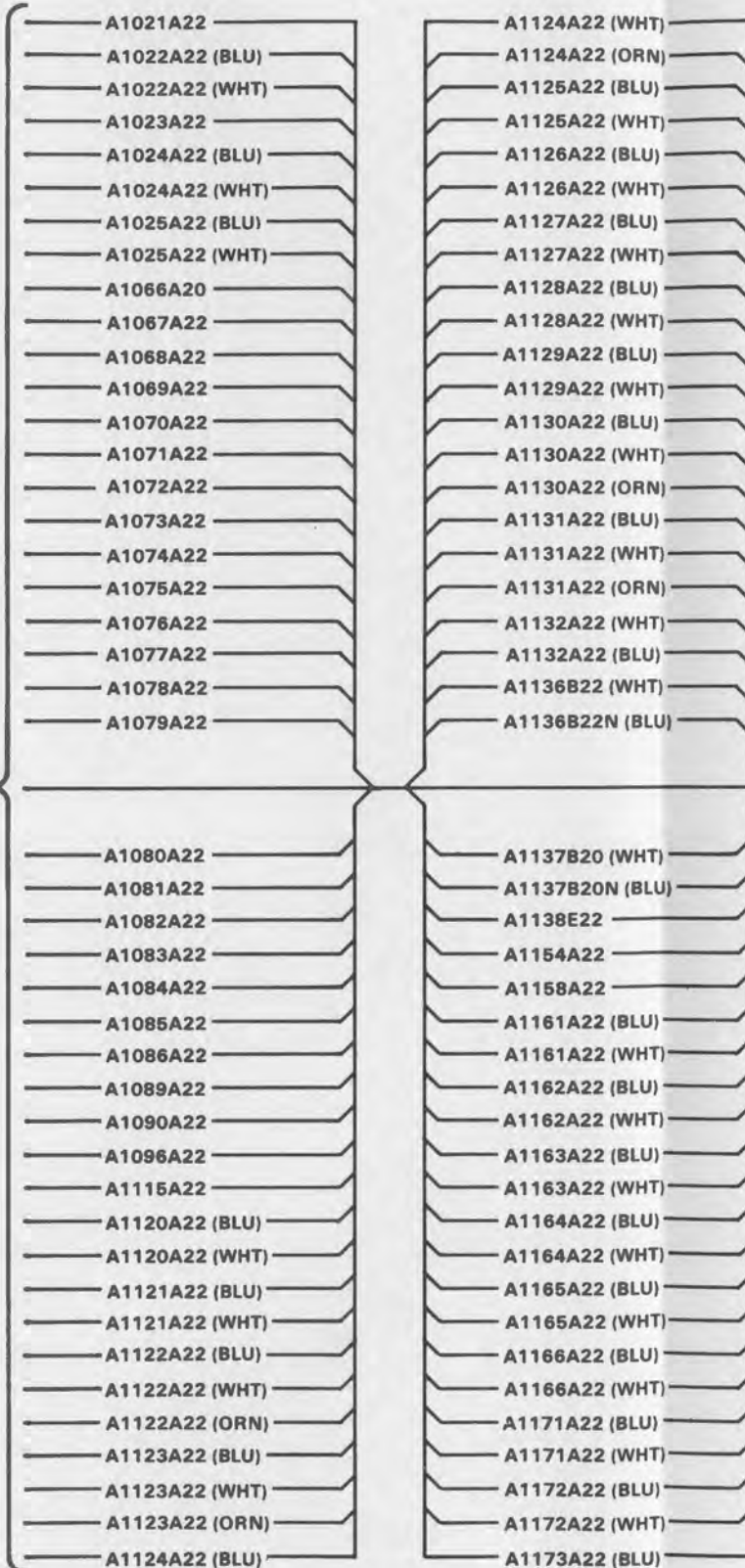


Figure FO-144. MCN Fire Control System (Sheet 4 of 6)



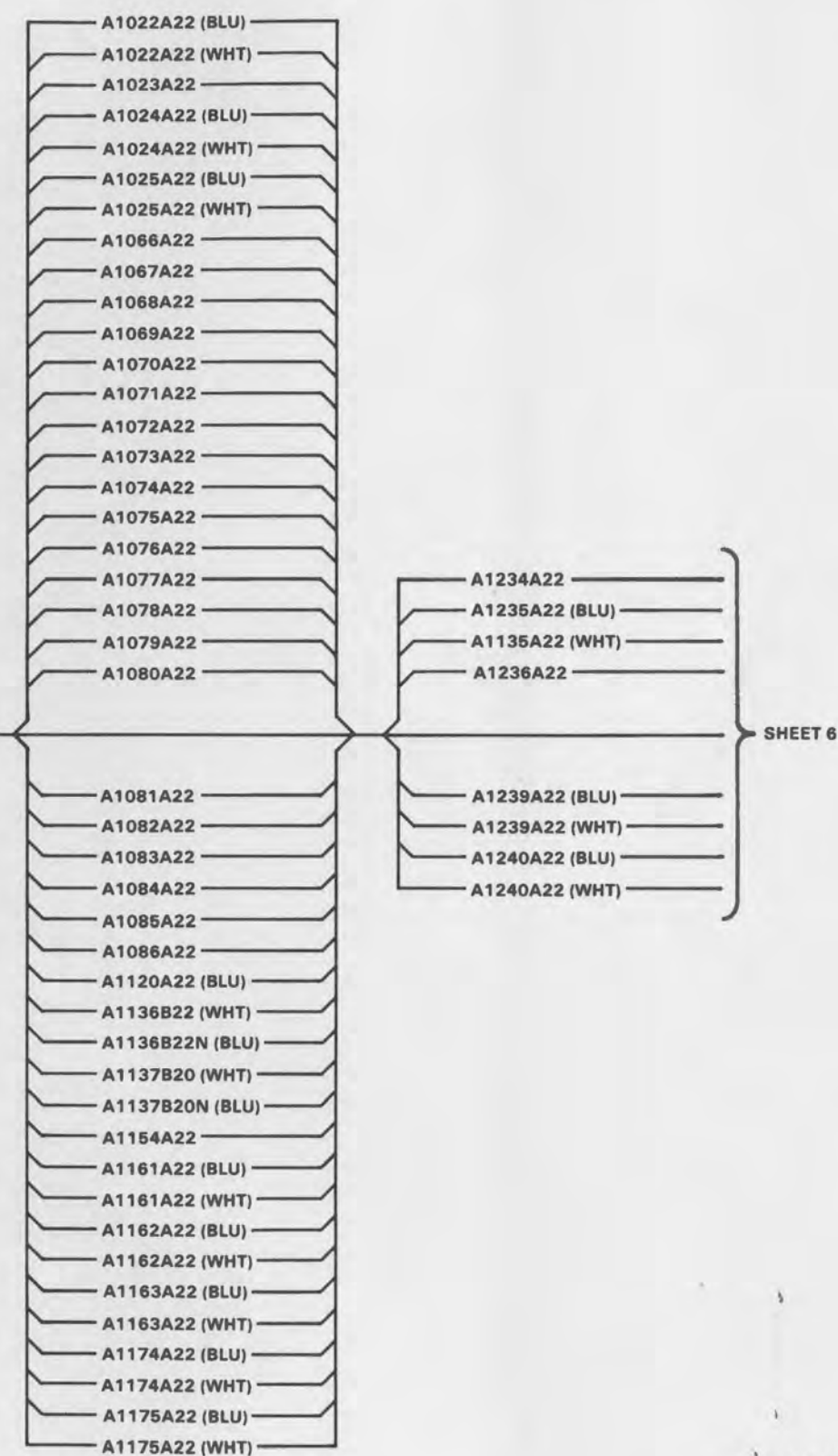
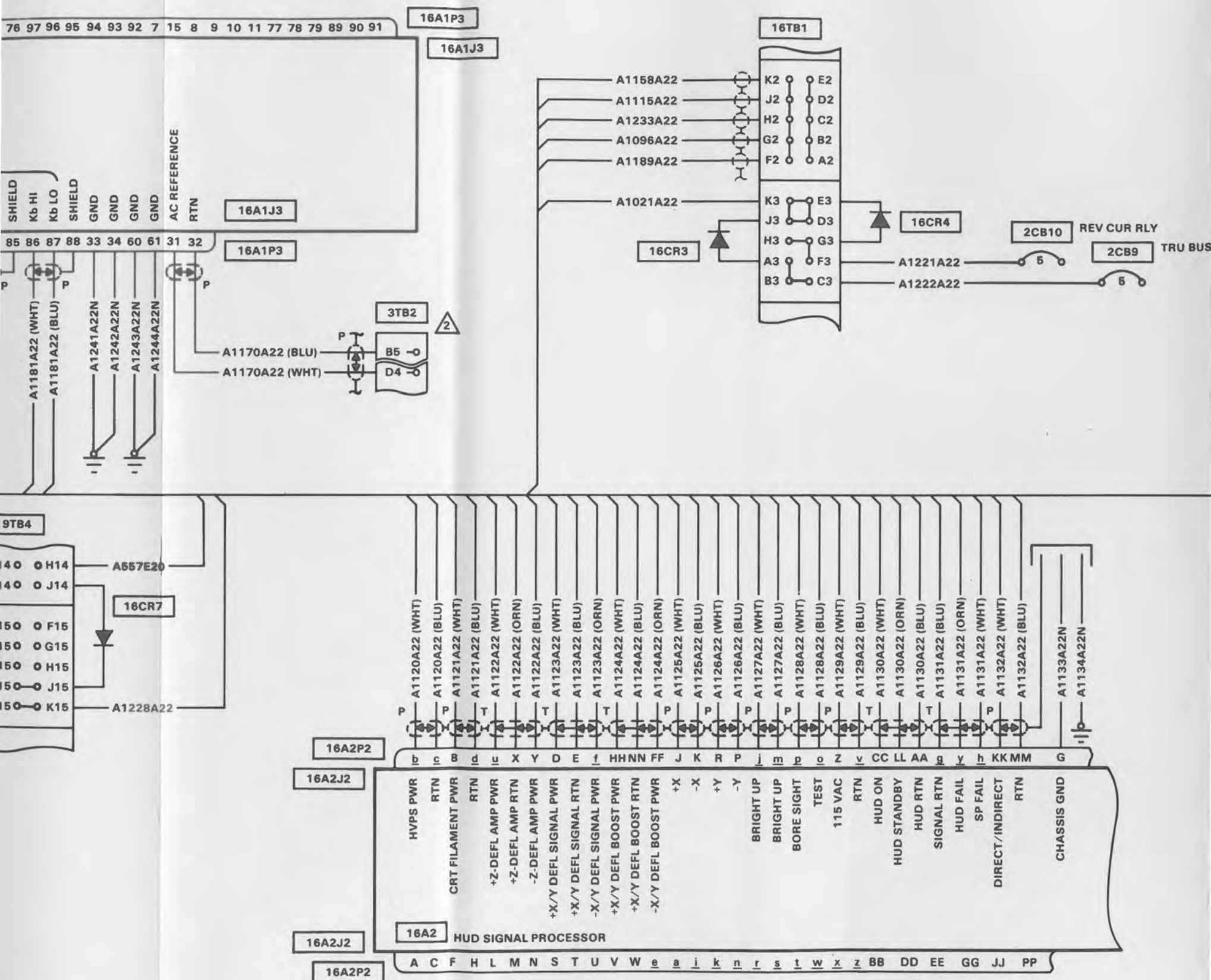
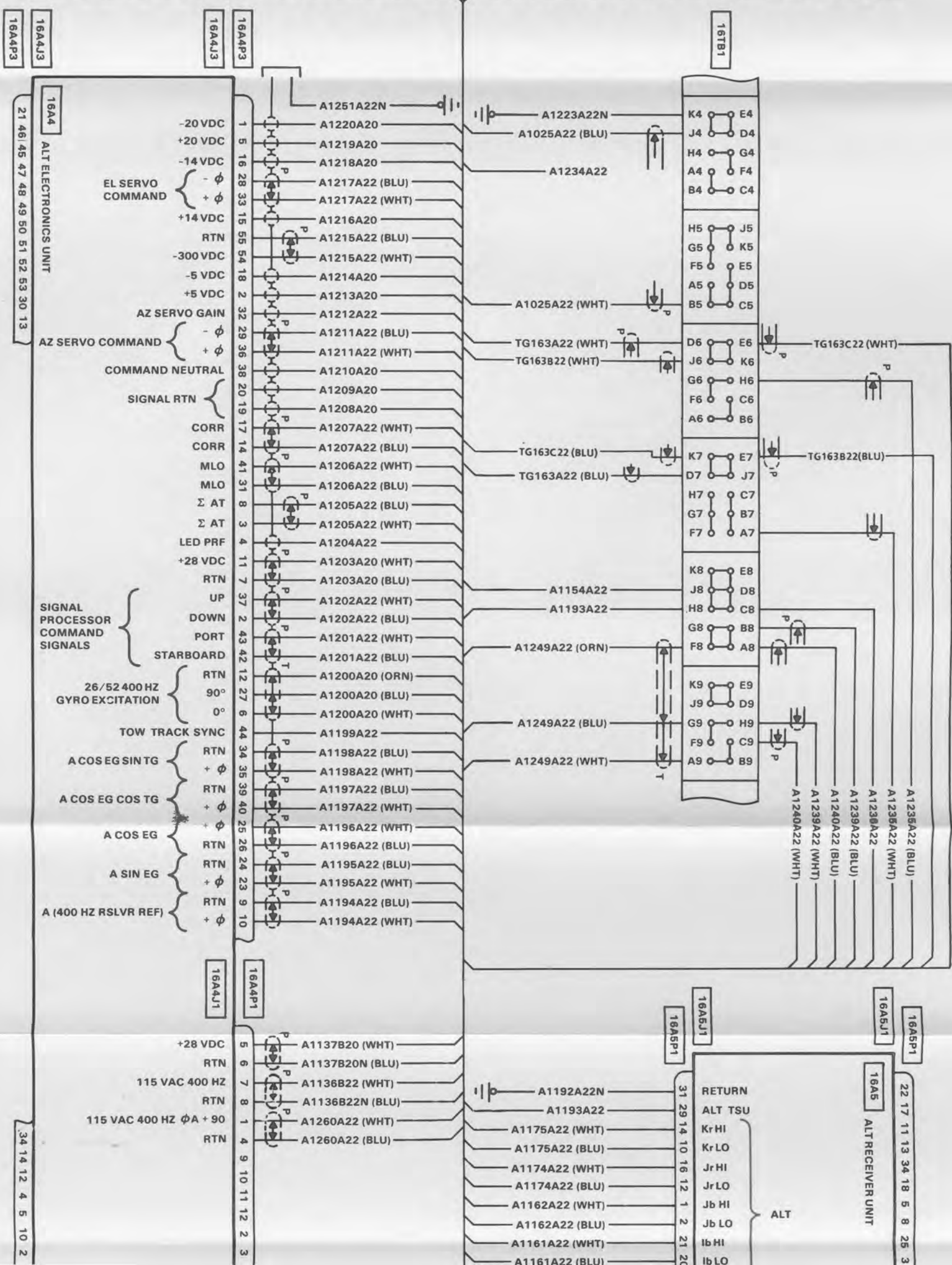


Figure FO-144. MCN Fire Control System (Sheet 5 of 6)



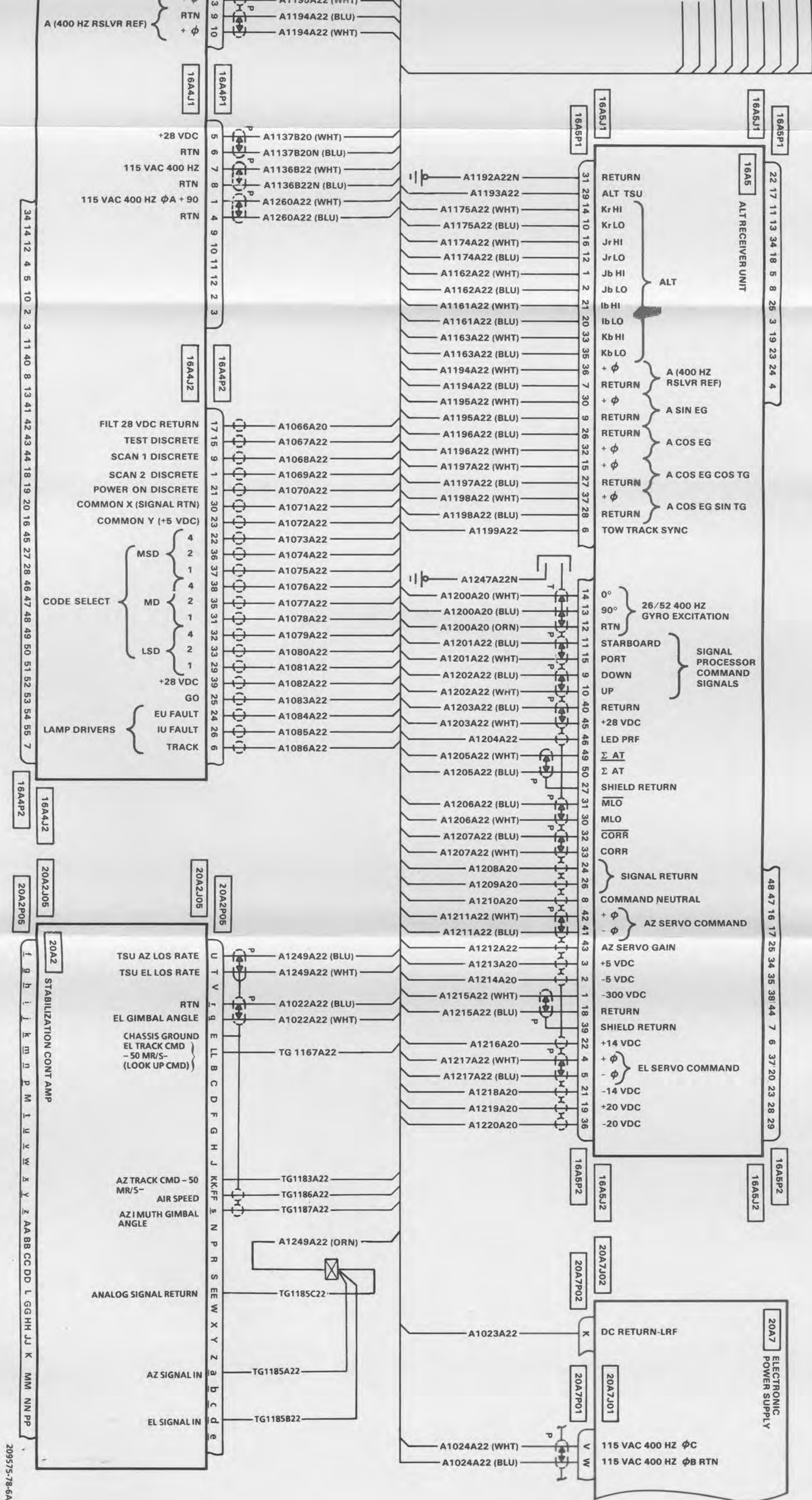
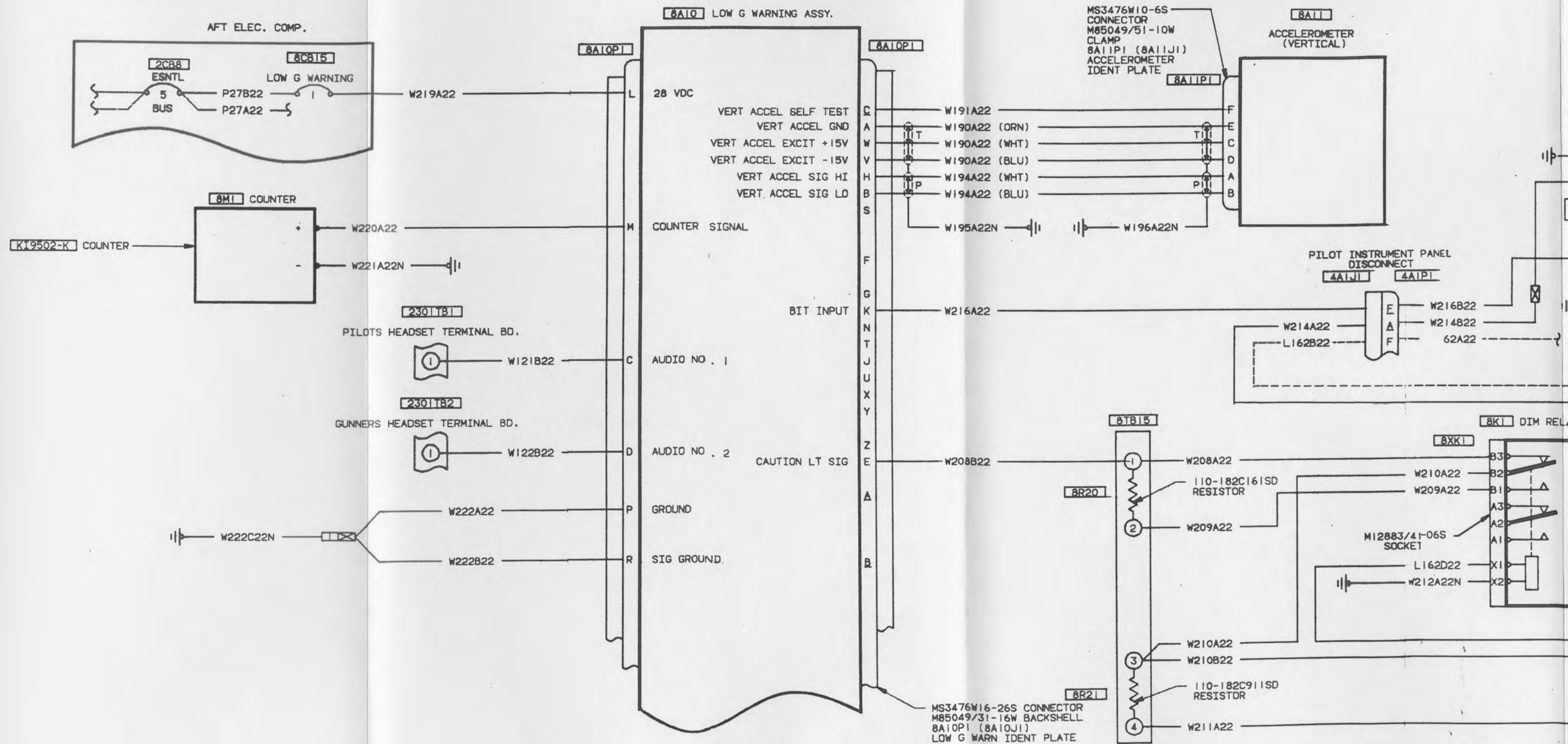


Figure FO-144. MCN Fire Control System (Sheet 6 of 6)



The Metric System and Equivalents

Linear Measure

1 centimeter = 10 millimeters = .39 inch
 1 decimeter = 10 centimeters = 3.94 inches
 1 meter = 10 decimeters = 39.37 inches
 1 dekameter = 10 meters = 32.8 feet
 1 hectometer = 10 dekameters = 328.08 feet
 1 kilometer = 10 hectometers = 3,280.8 feet

Weights

1 centigram = 10 milligrams = .15 grain
 1 decigram = 10 centigrams = 1.54 grains
 1 gram = 10 decigram = .035 ounce
 1 dekagram = 10 grams = .35 ounce
 1 hectogram = 10 dekagrams = 3.52 ounces
 1 kilogram = 10 hectograms = 2.2 pounds
 1 quintal = 100 kilograms = 220.46 pounds
 1 metric ton = 10 quintals = 1.1 short tons

Liquid Measure

1 centiliter = 10 milliliters = .34 fl. ounce
 1 deciliter = 10 centiliters = 3.38 fl. ounces
 1 liter = 10 deciliters = 33.81 fl. ounces
 1 dekaliter = 10 liters = 2.64 gallons
 1 hectoliter = 10 dekaliters = 26.42 gallons
 1 kiloliter = 10 hectoliters = 264.18 gallons

Square Measure

1 sq. centimeter = 100 sq. millimeters = .155 sq. inch
 1 sq. decimeter = 100 sq. centimeters = 15.5 sq. inches
 1 sq. meter (centare) = 100 sq. decimeters = 10.76 sq. feet
 1 sq. dekameter (are) = 100 sq. meters = 1,076.4 sq. feet
 1 sq. hectometer (hectare) = 100 sq. dekameters = 2.47 acres
 1 sq. kilometer = 100 sq. hectometers = .386 sq. mile -

Cubic Measure

1 cu. centimeter = 1000 cu. millimeters = .06 cu. inch
 1 cu. decimeter = 1000 cu. centimeters = 61.02 cu. inches
 1 cu. meter = 1000 cu. decimeters = 35.31 cu. feet

Approximate Conversion Factors

To change	To	Multiply by	To change	To	Multiply by
inches	centimeters	2.540	ounce-inches	newton-meters	.007062
feet	meters	.305	centimeters	inches	.394
yards	meters	.914	meters	feet	3.280
miles	kilometers	1.609	meters	yards	1.094
square inches	square centimeters	6.451	kilometers	miles	.621
square feet	square meters	.093	square centimeters	square inches	.155
square yards	square meters	.836	square meters	square feet	10.764
square miles	square kilometers	2.590	square meters	square yards	1.196
acres	square hectometers	.405	square kilometers	square miles	.386
cubic feet	cubic meters	.028	square hectometers	acres	2.471
cubic yards	cubic meters	.765	cubic meters	cubic feet	35.315
fluid ounces	milliliters	29.573	cubic meters	cubic yards	1.308
pints	liters	.473	milliliters	fluid ounces	.034
quarts	liters	.946	liters	pints	2.113
gallons	liters	3.785	liters	quarts	1.057
ounces	grams	28.349	liters	gallons	.264
pounds	kilograms	.454	grams	ounces	.035
short tons	metric tons	.907	kilograms	pounds	2.205
pound-feet	newton-meters	1.356	metric tons	short tons	1.102
pound-inches	newton-meters	.11296			

Temperature (Exact)

°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C
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PIN: 068043-000