

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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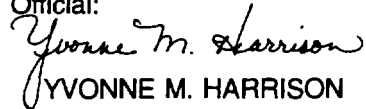
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Aviation Unit and Intermediate
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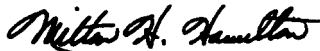
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Aviation Unit and Intermediate
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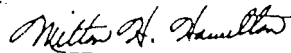
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RADIATION HAZARD
Thorium Fluoride

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.

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NO. 55-1520-236-23-5

DEPARTMENT OF THE ARMY
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

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 31 July 1990

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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 these procedures, please let us know. Mail your letter or DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in the back of this manual directly to: Commander, US Army Aviation and Troop Command, ATTN: AMSAT-I-MP, 4300 Goodfellow Blvd., St. Louis, MO 63120-1798. A reply will be furnished directly to you.

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By Order of the Secretary of the Army:

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- 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.

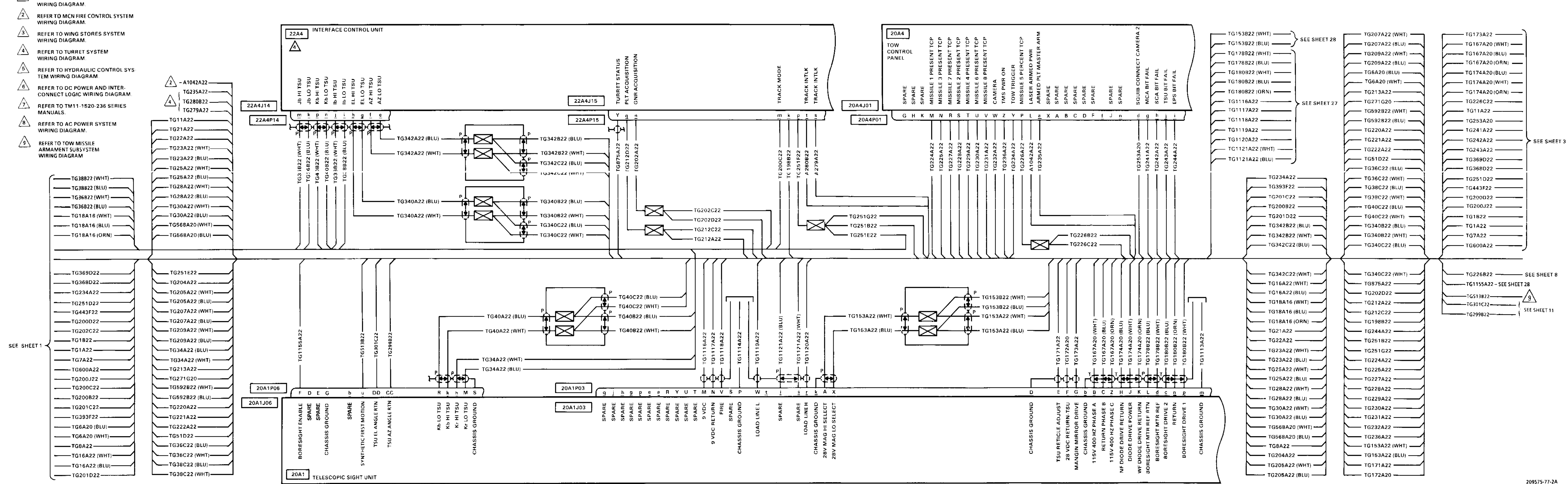


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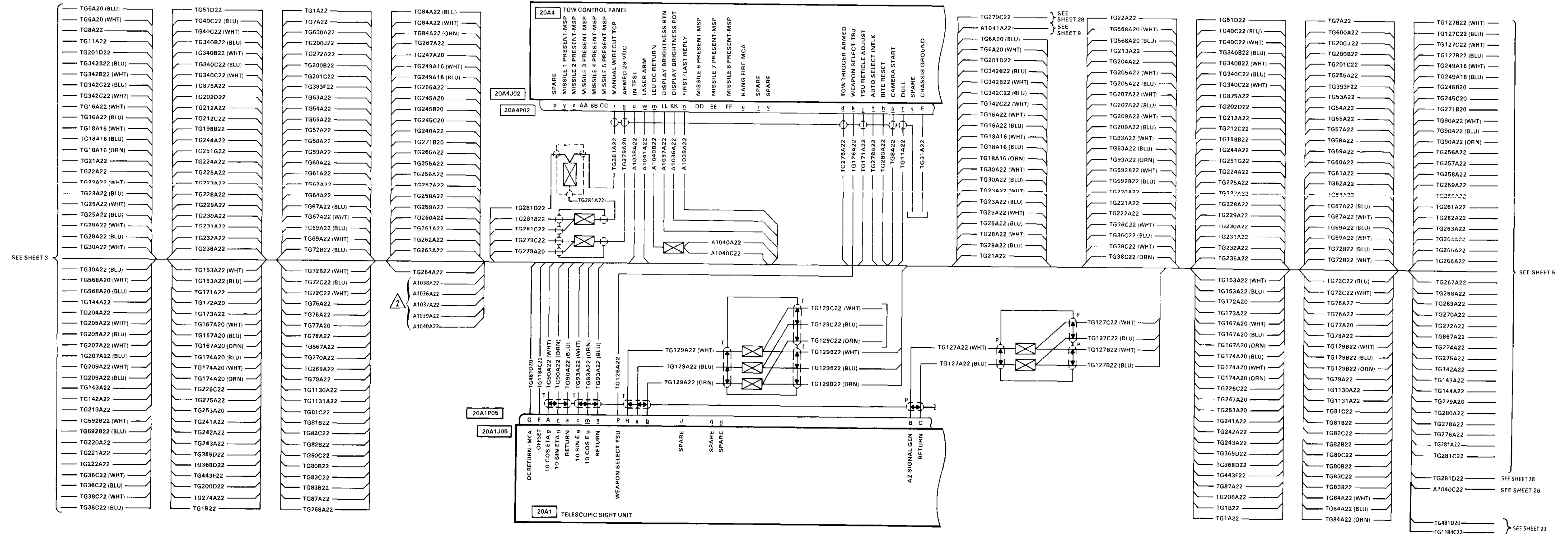


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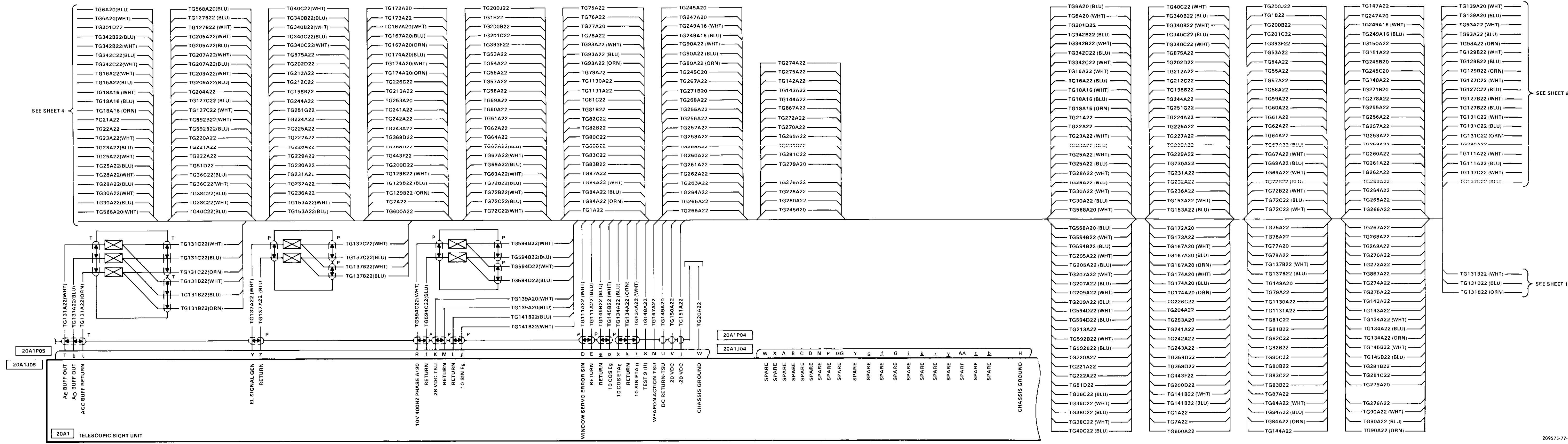


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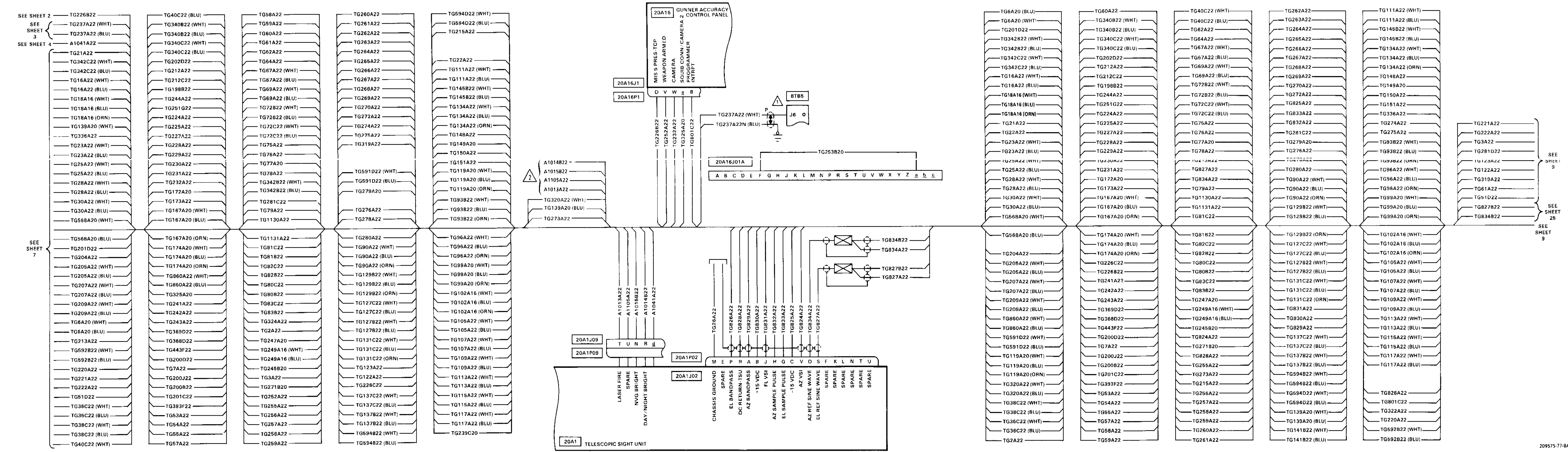


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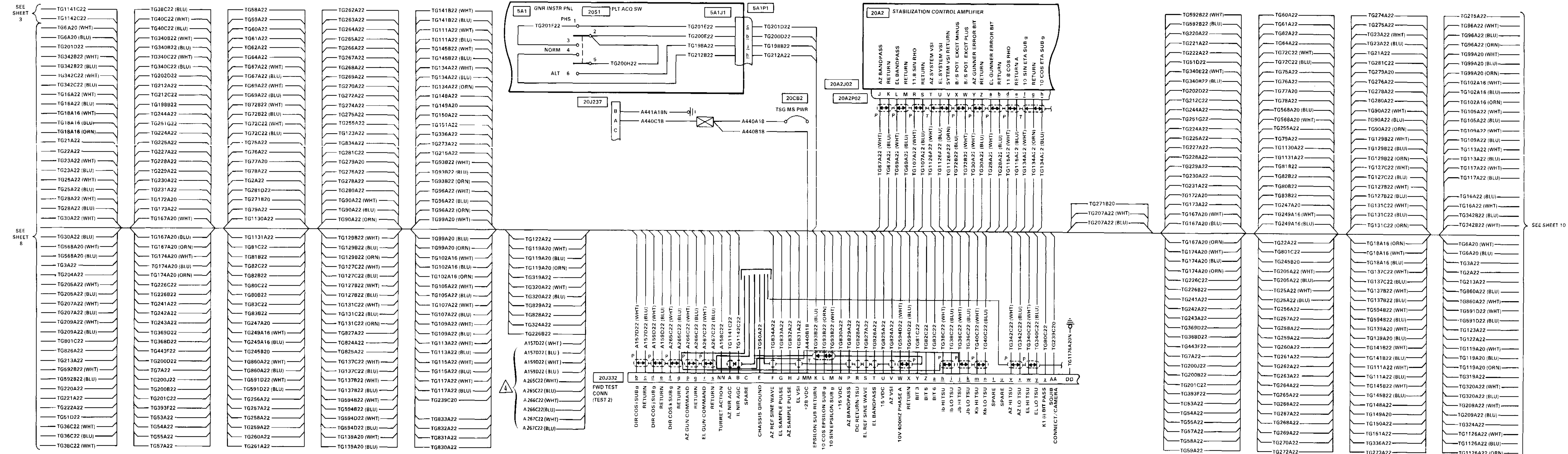


Figure FO-143. MCN TOW Missile Armament Subsystem (Sheet 9 of 28)

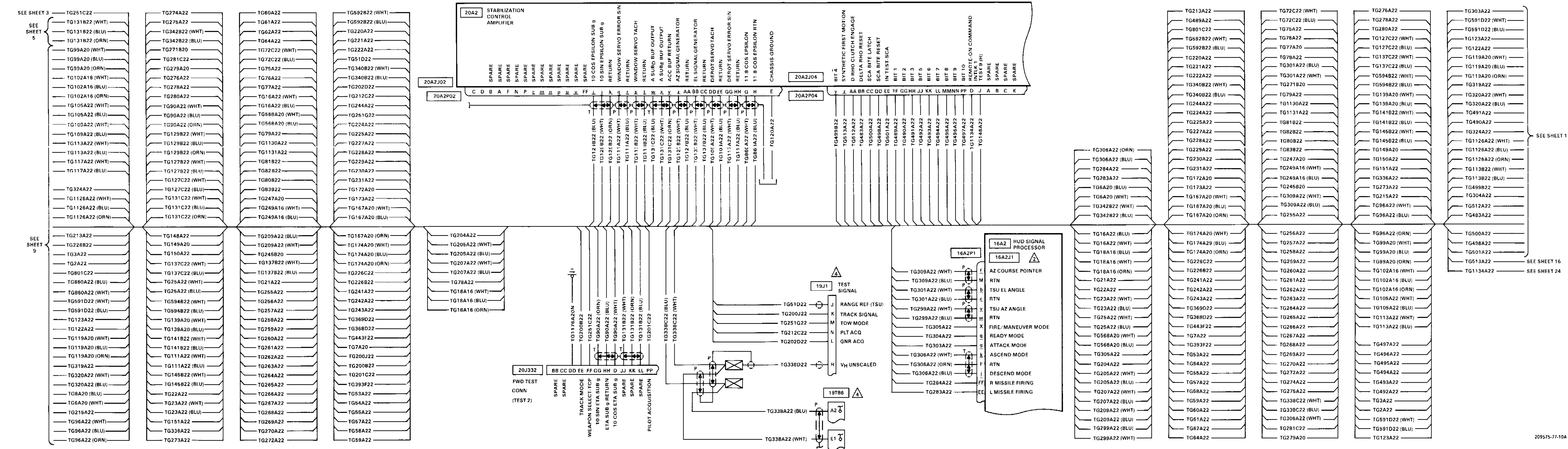
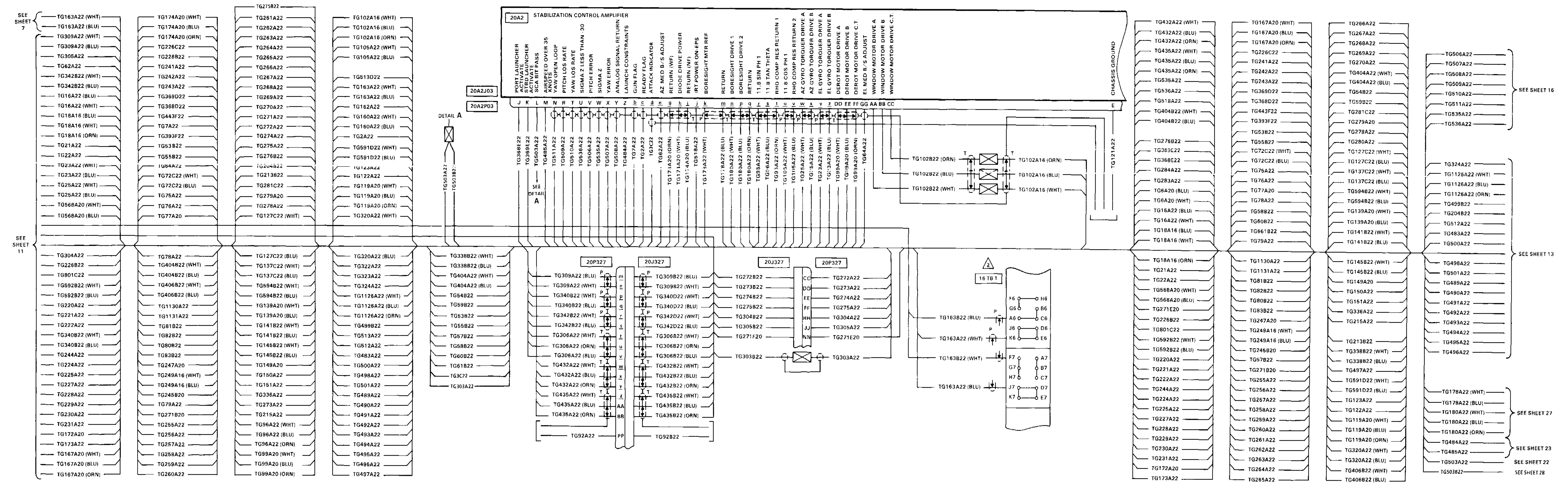


Figure FO-143. MCN TOW Missile Armament Subsystem (Sheet 10 of 28)



SEE SHEET 7

SEE SHEET 11

SEE SHEET 16

SEE SHEET 13

SEE SHEET 27

SEE SHEET 23

SEE SHEET 22

SEE SHEET 28

Figure FO-143. MCN TOW Missile Armament Subsystem (Sheet 12 of 28)

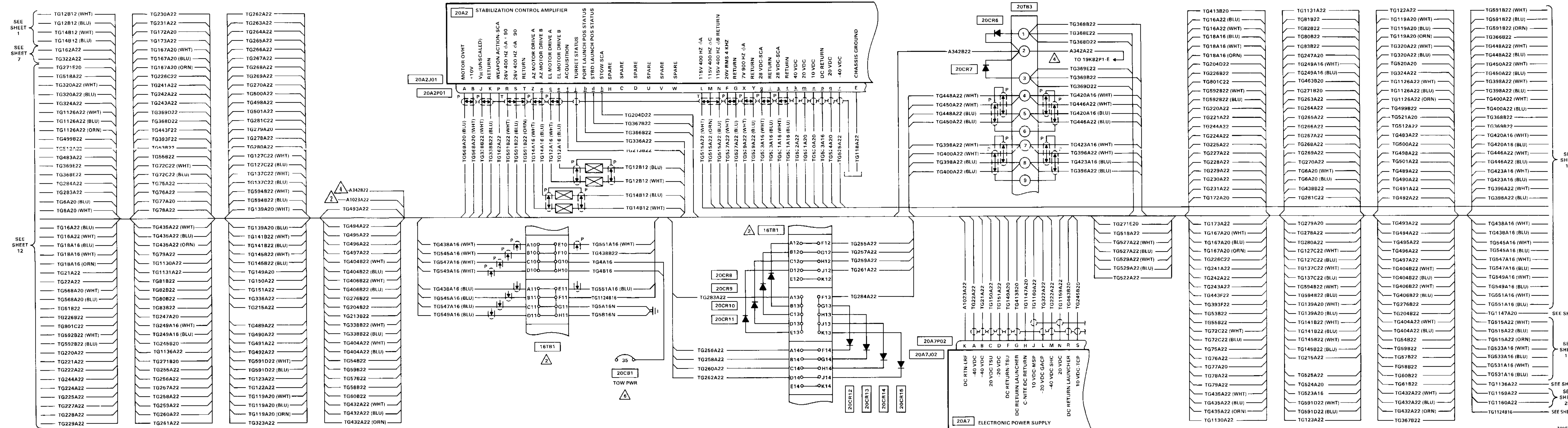
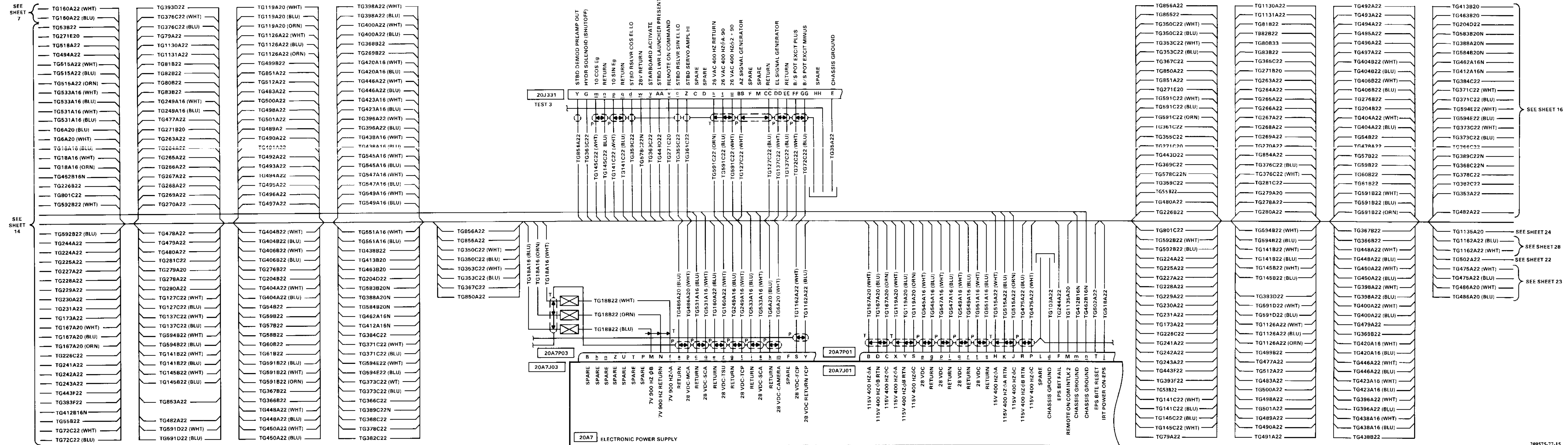


Figure FO-143. MCV TOW Missile Armament Subsystem (Sheet 13 of 28)



SEE SHEET 7

SEE SHEET 14

SEE SHEET 16

SEE SHEET 24

SEE SHEET 28

SEE SHEET 22

SEE SHEET 23

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

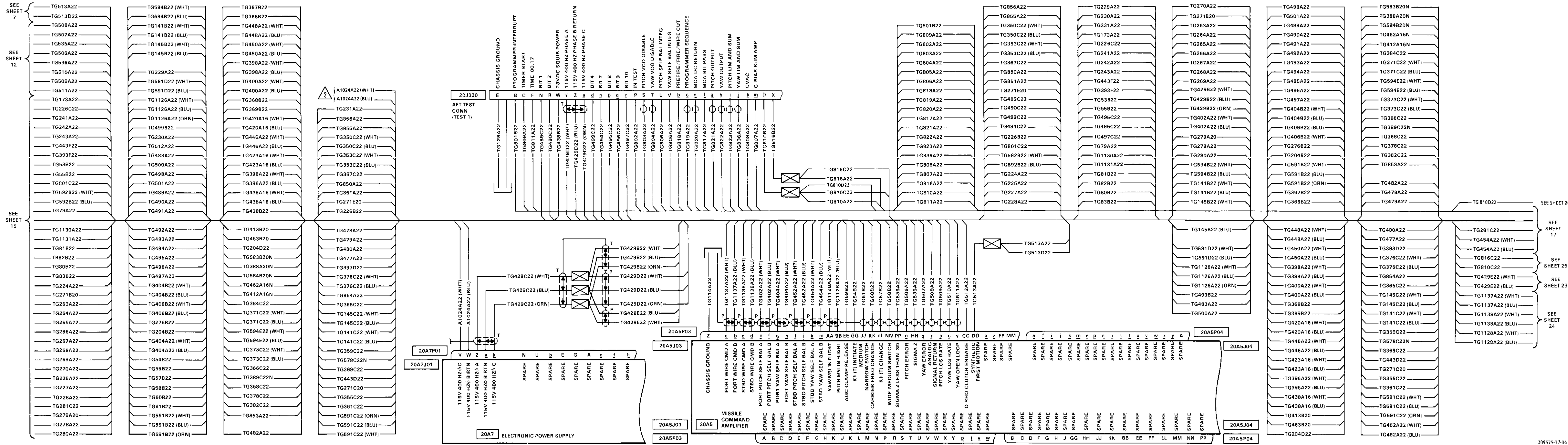
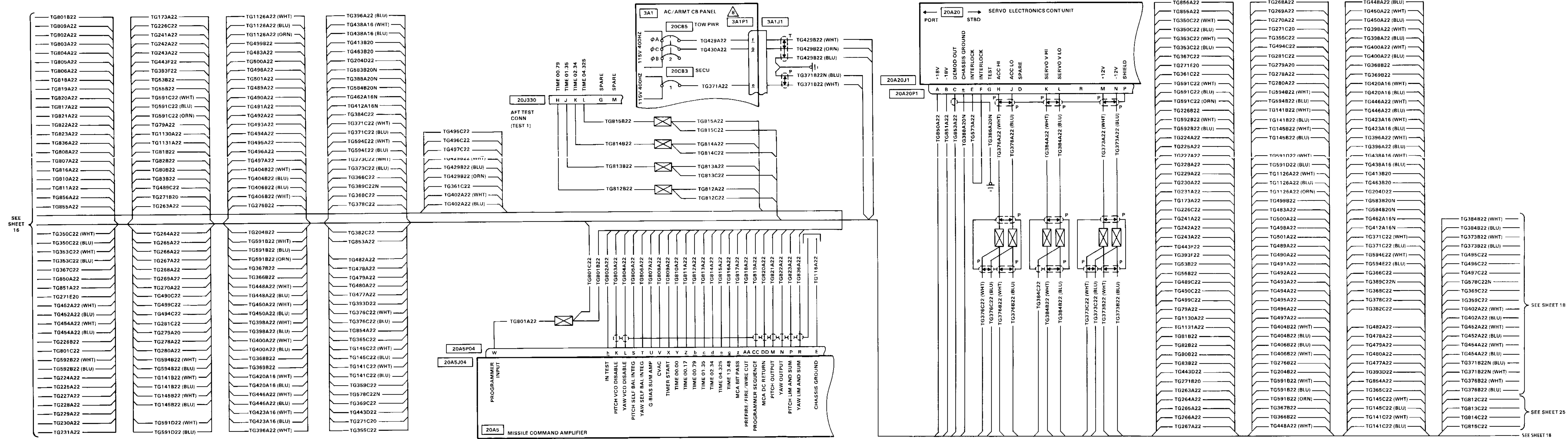


Figure FO-143. MCN TOW Missile Armament Subsystem (Sheet 16 of 28)



SEE SHEET 16

SEE SHEET 18

SEE SHEET 25

SEE SHEET 18

209575-77-17

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

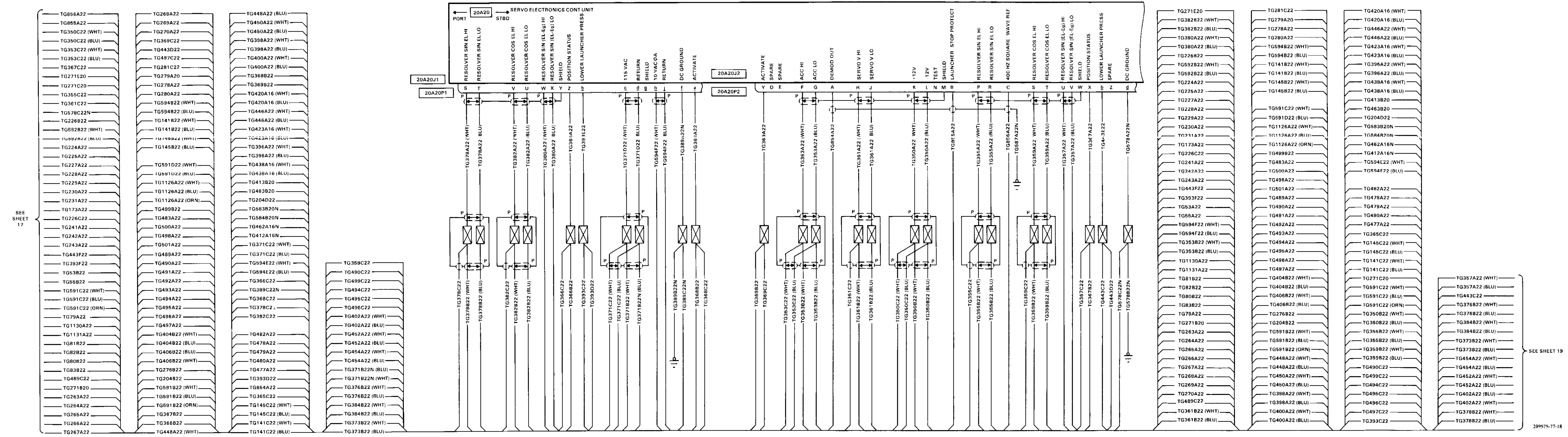


Figure FO-143. MCN TOW Missile Armament Subsystem (Sheet 18 of 28)

209575-77-1R

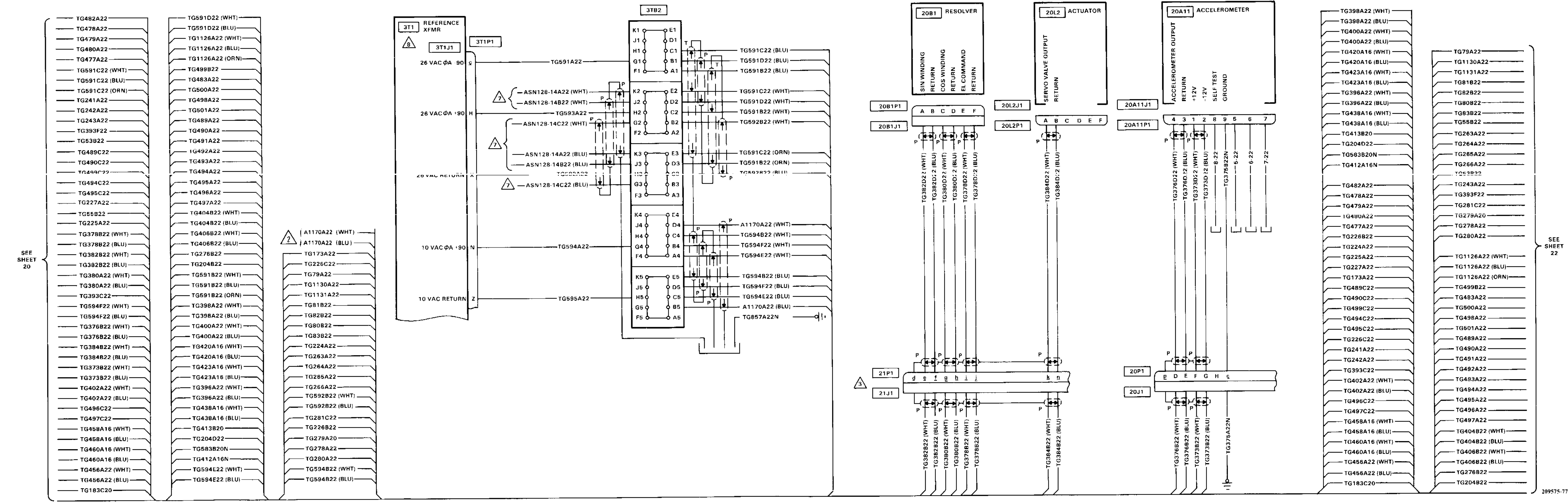


Figure FO-143. MCN TOW Missile Armament Subsystem (Sheet 21 of 28)

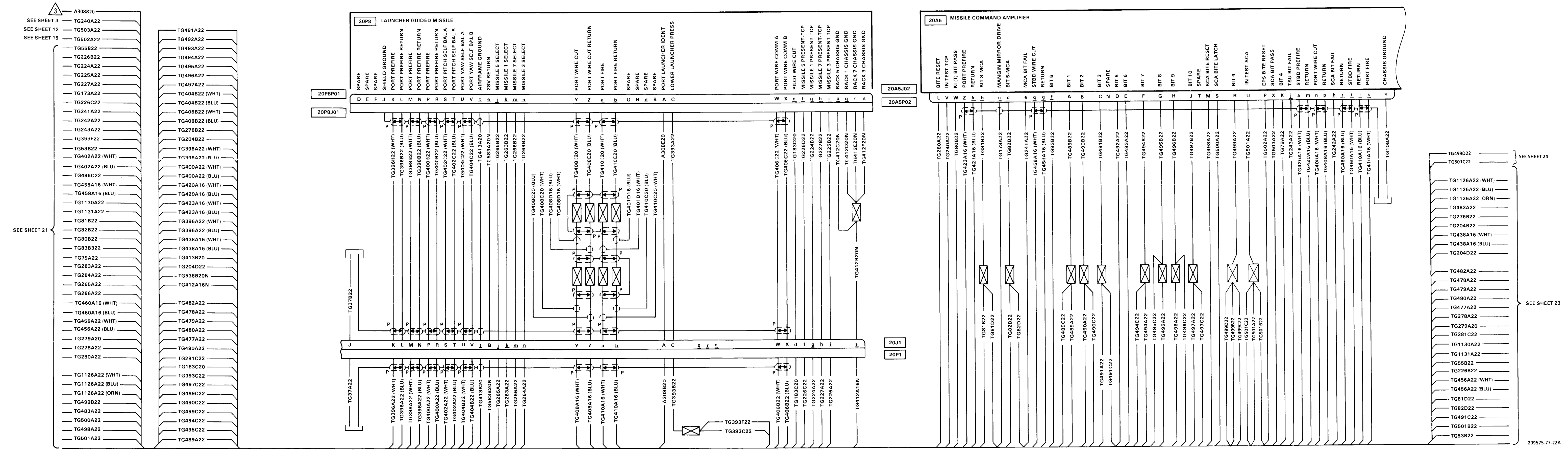
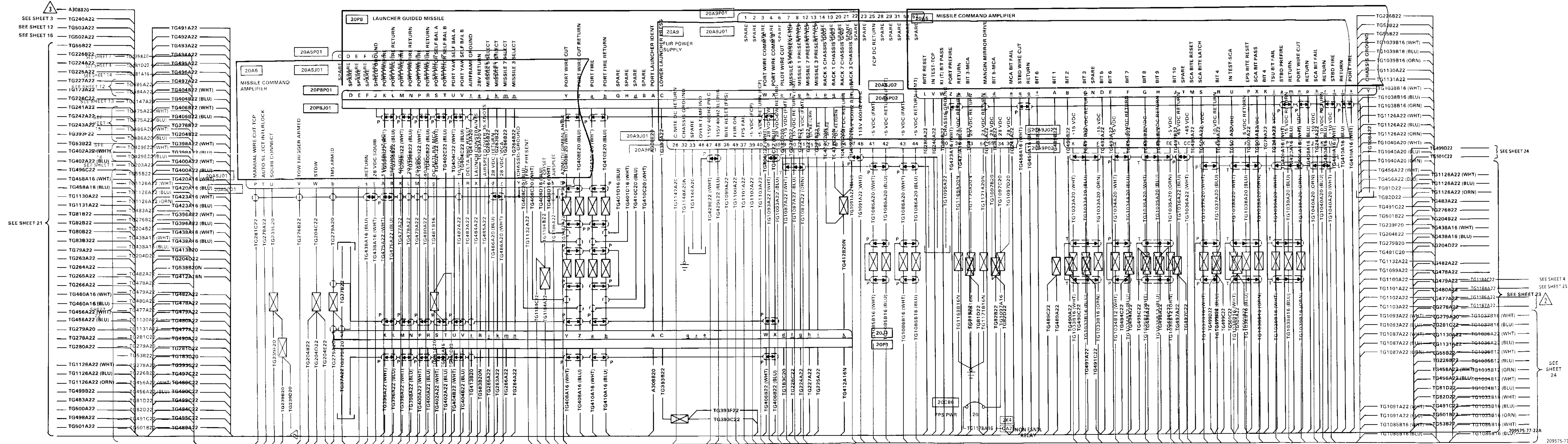


Figure FO-143. MCN TOW Missile Armament Subsystem (Sheet 22 of 28)



SEE SHEET 21

SEE SHEET 3

SEE SHEET 12

SEE SHEET 15

SEE SHEET 24

SEE SHEET 4

SEE SHEET 23

SEE SHEET 25

SEE SHEET 24

209575-77-22A

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

Figure FO-143. MCN TOW Missile Armament Subsystem (Sheet 23 of 28)

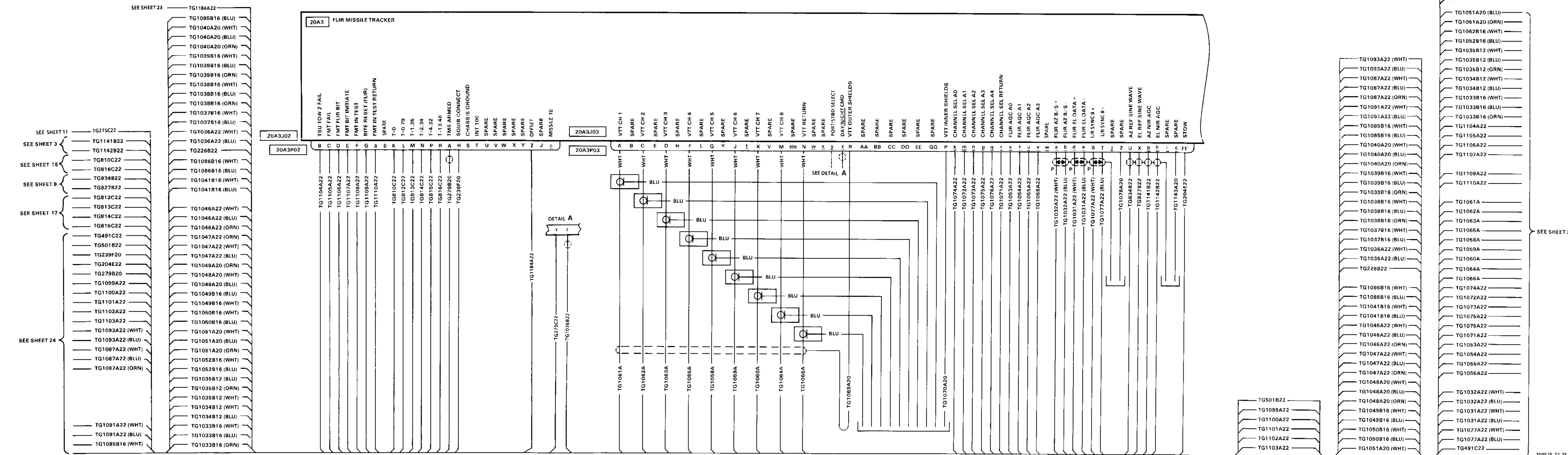


Figure FO-143. MCN TOW Missile Armament Subsystem (Sheet 25 of 28)

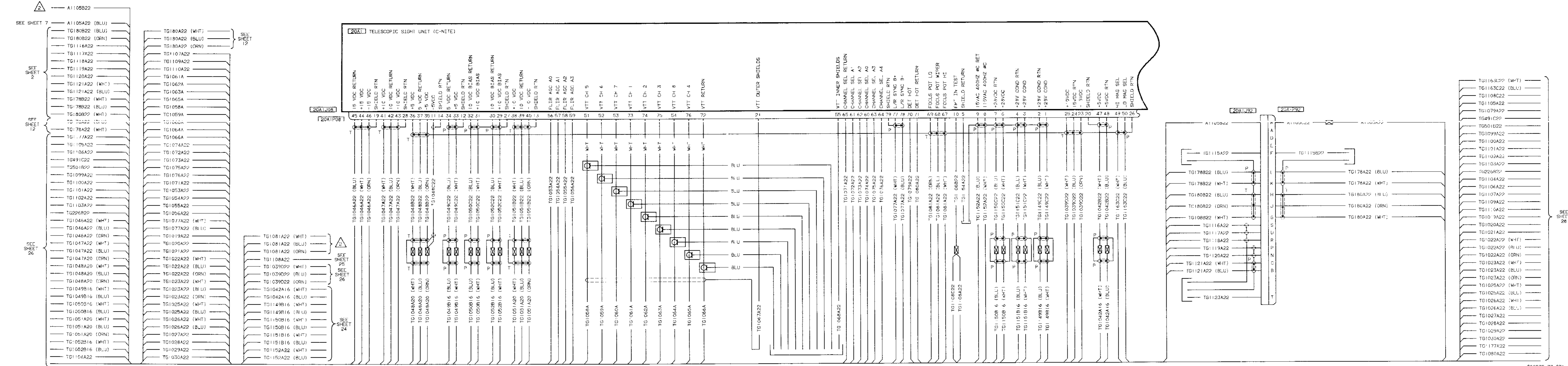


Figure FO-143. MCN TOW Missile Armament Subsystem (Sheet 27 of 28)

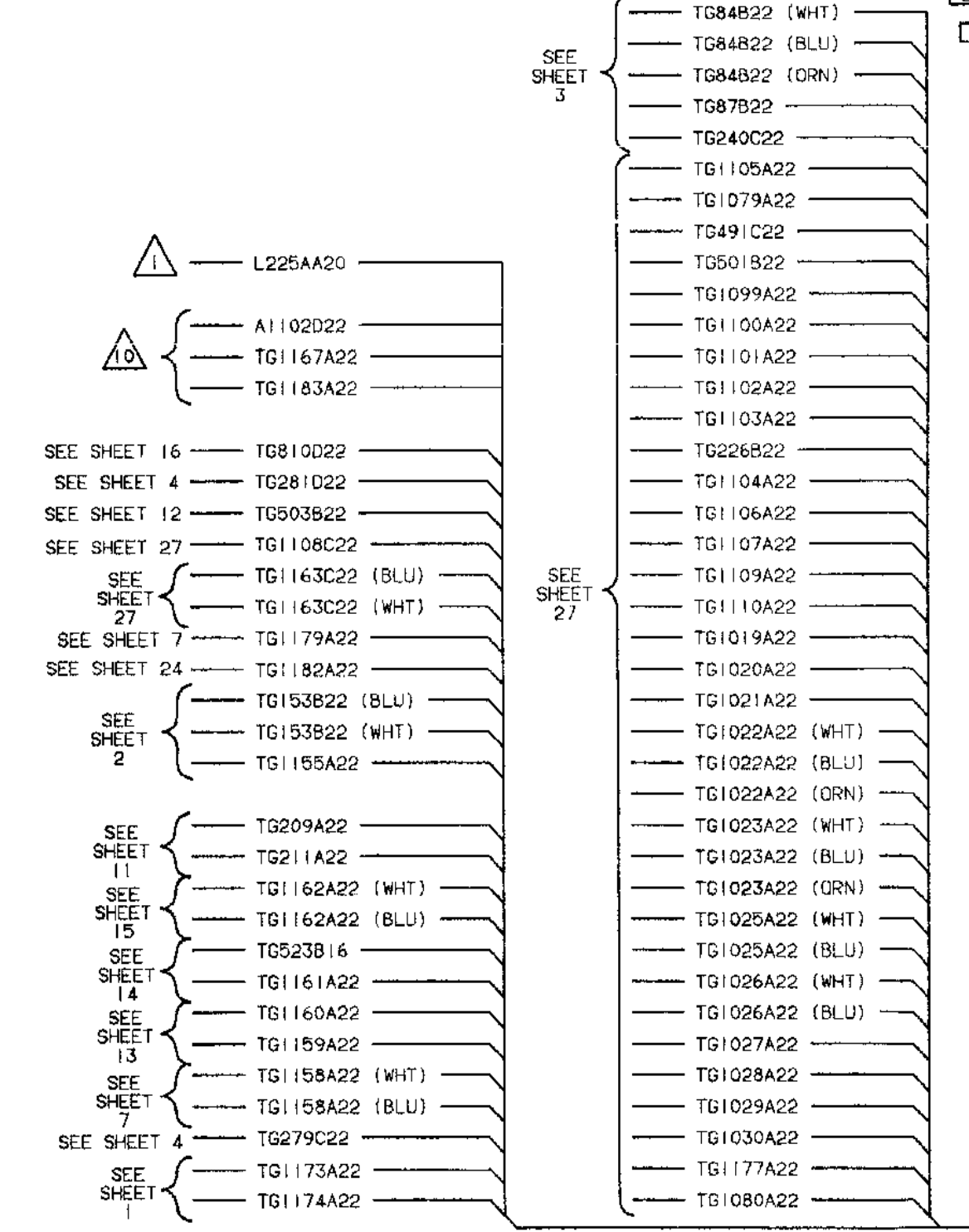
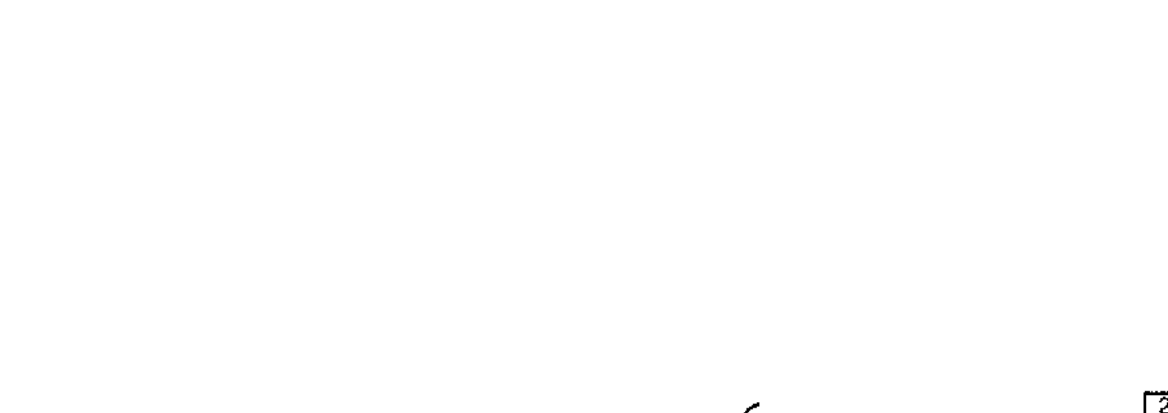
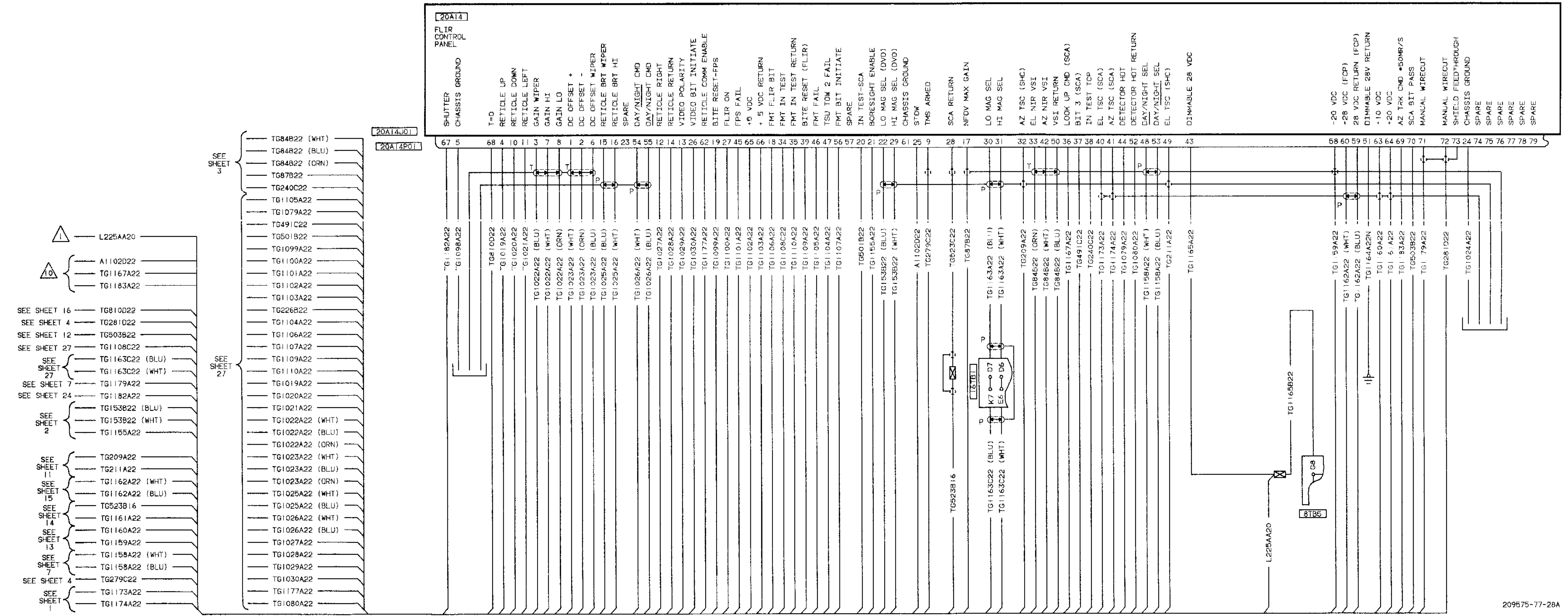


Figure FO-143. MCN TOW Missile Armament Subsystem (Sheet 28 of 28)

- 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.

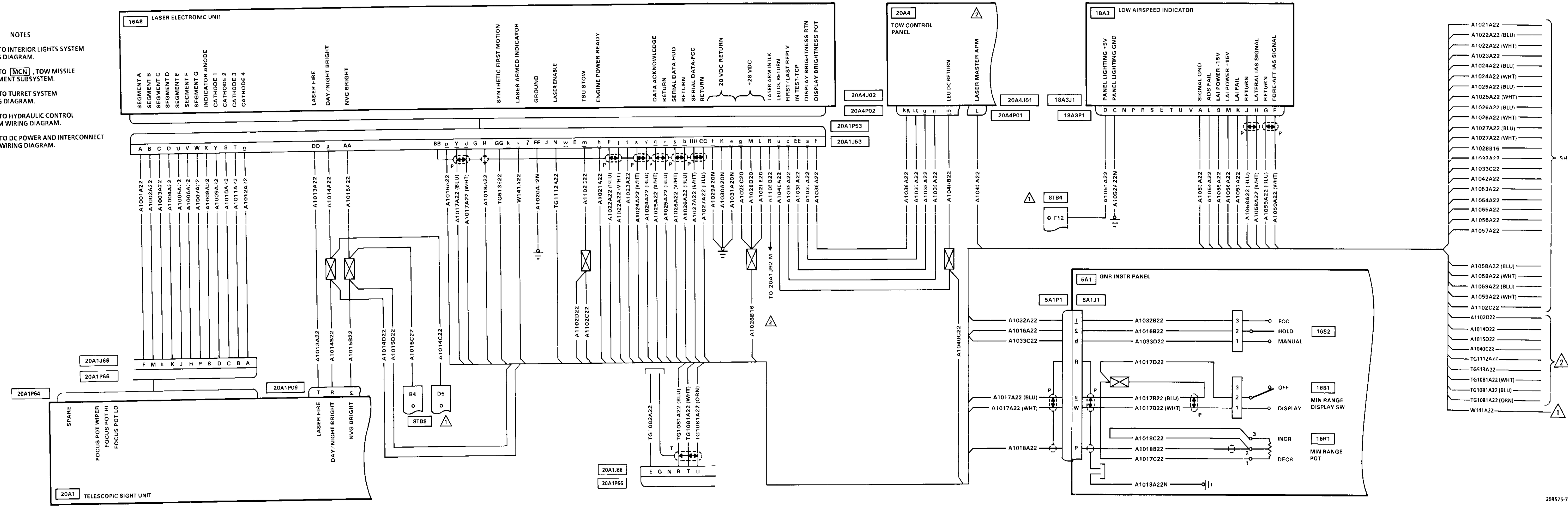
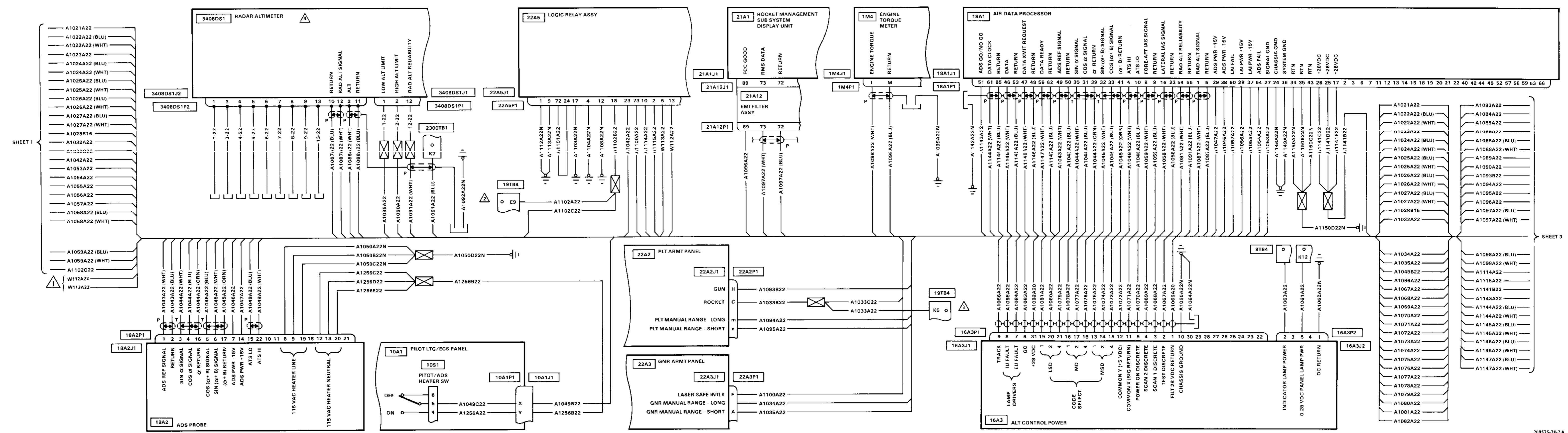


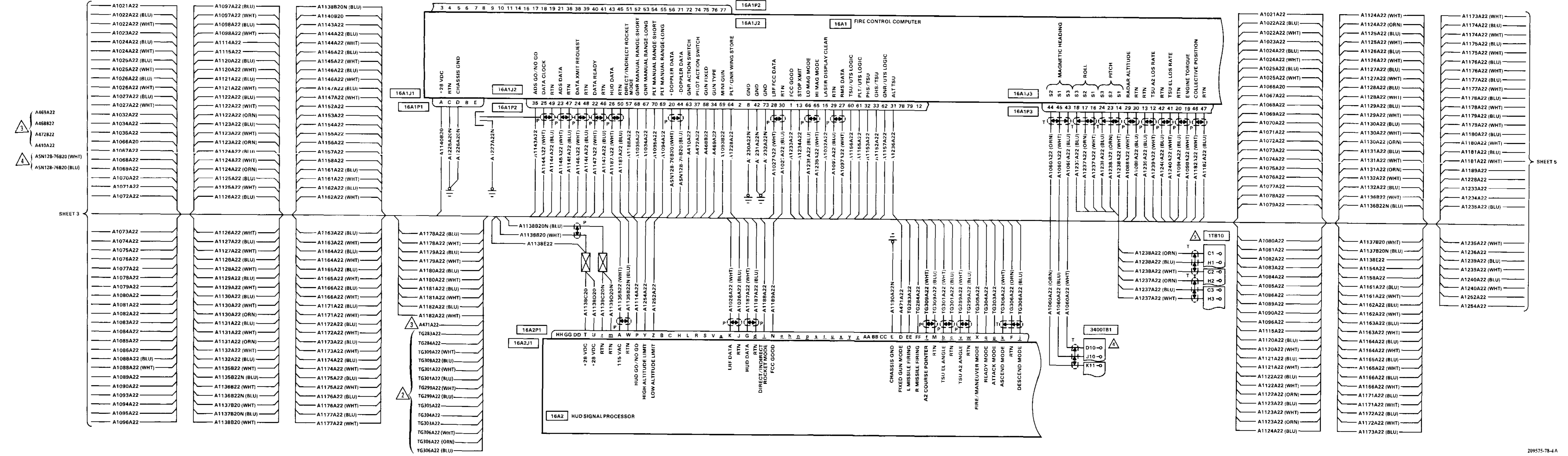
Figure FO-144. MCN Fire Control System (Sheet 1 of 6)



SHEET 1

SHEET 3

Figure FO-144. MCN Fire Control System (Sheet 2 of 6)



SHEET 3

SHEET 5

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

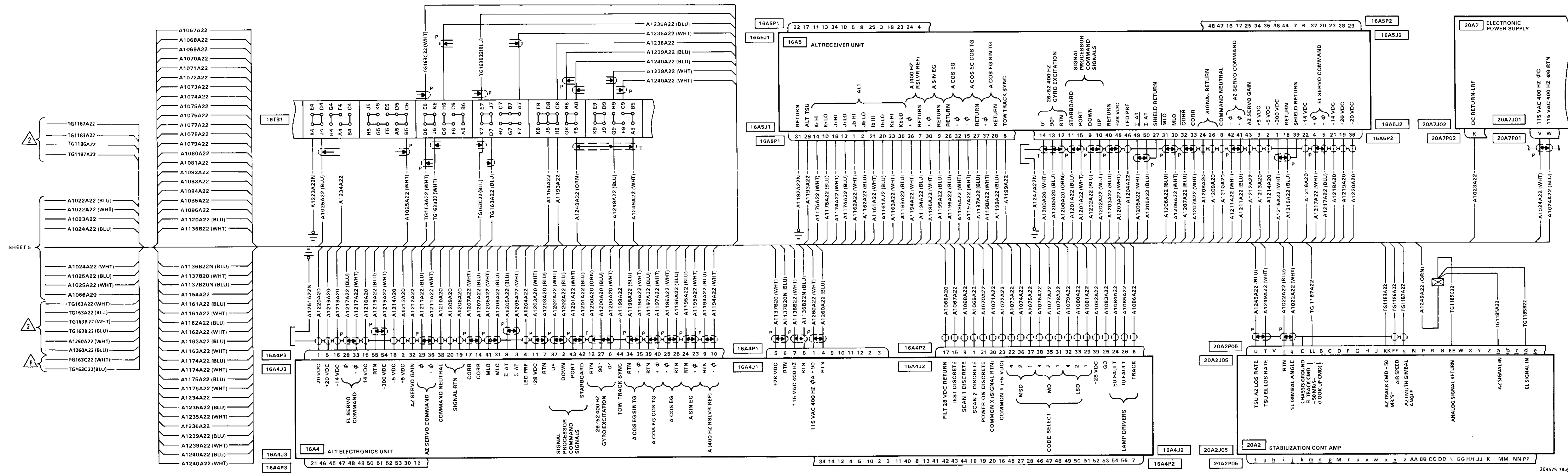


Figure FO-144. MCN Fire Control System (Sheet 6 of 6)

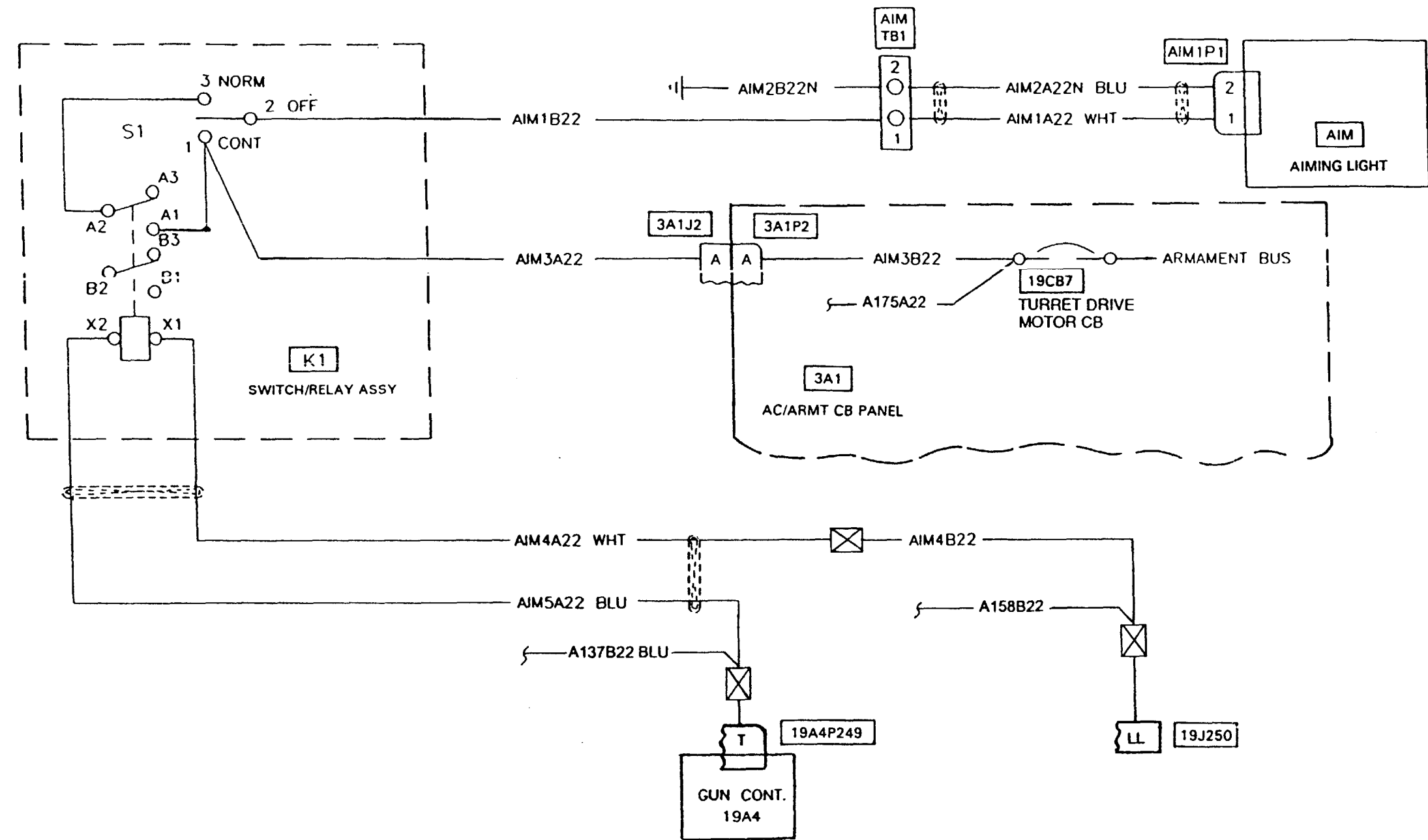


Figure FO-146. **M** AIM-1/EXL Laser Gunsight System

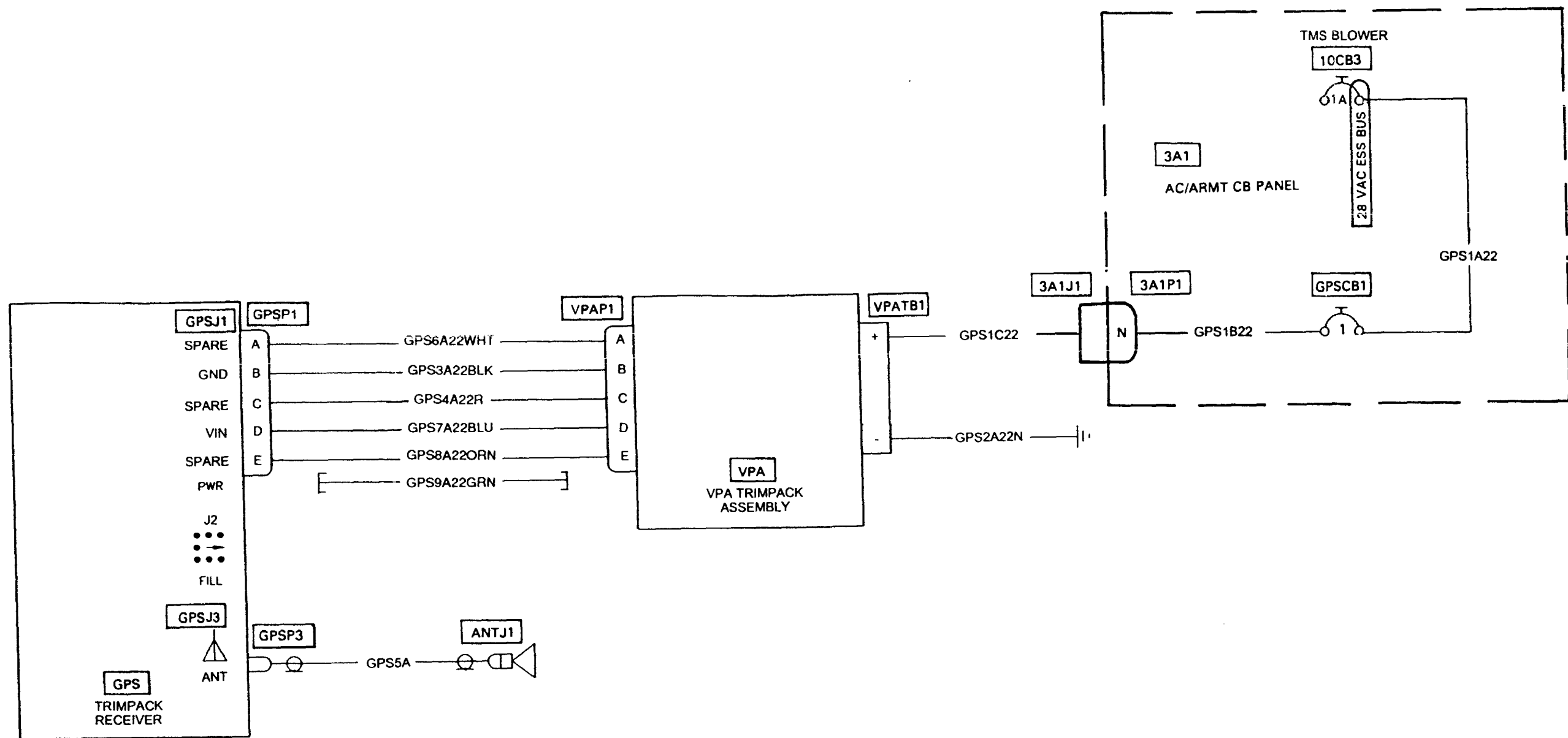


Figure FO-147. **M** GPS Trimpack System



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PUBLICATION DATE
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PUBLICATION TITLE AVUM AND AVIM MAINT
MANUAL, ARMY MODEL AH-1P, AND
AH-1E/F HELICOPTERS

BE EXACT... PIN-POINT WHERE IT IS

PAGE NO.	PARA-GRAPH	FIGURE NO.	TABLE NO.
----------	------------	------------	-----------

6

2-1
a

B1

4-3

125 line 20

IN THIS SPACE TELL WHAT IS WRONG 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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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 = 32.6 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 decigrams = .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 = 1076 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

<i>To change</i>	<i>To</i>	<i>Multiply by</i>	<i>To change</i>	<i>To</i>	<i>Multiply by</i>
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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