AEROSPACE CORPORATION

ALTERNATE POLICE PATROL CAR BODY DESIGN

Sub-Contract Number 44372

FINAL REPORT

FIRST DRAFT

March 12, 1976

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F I N A L R E P O R T

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Prepared By

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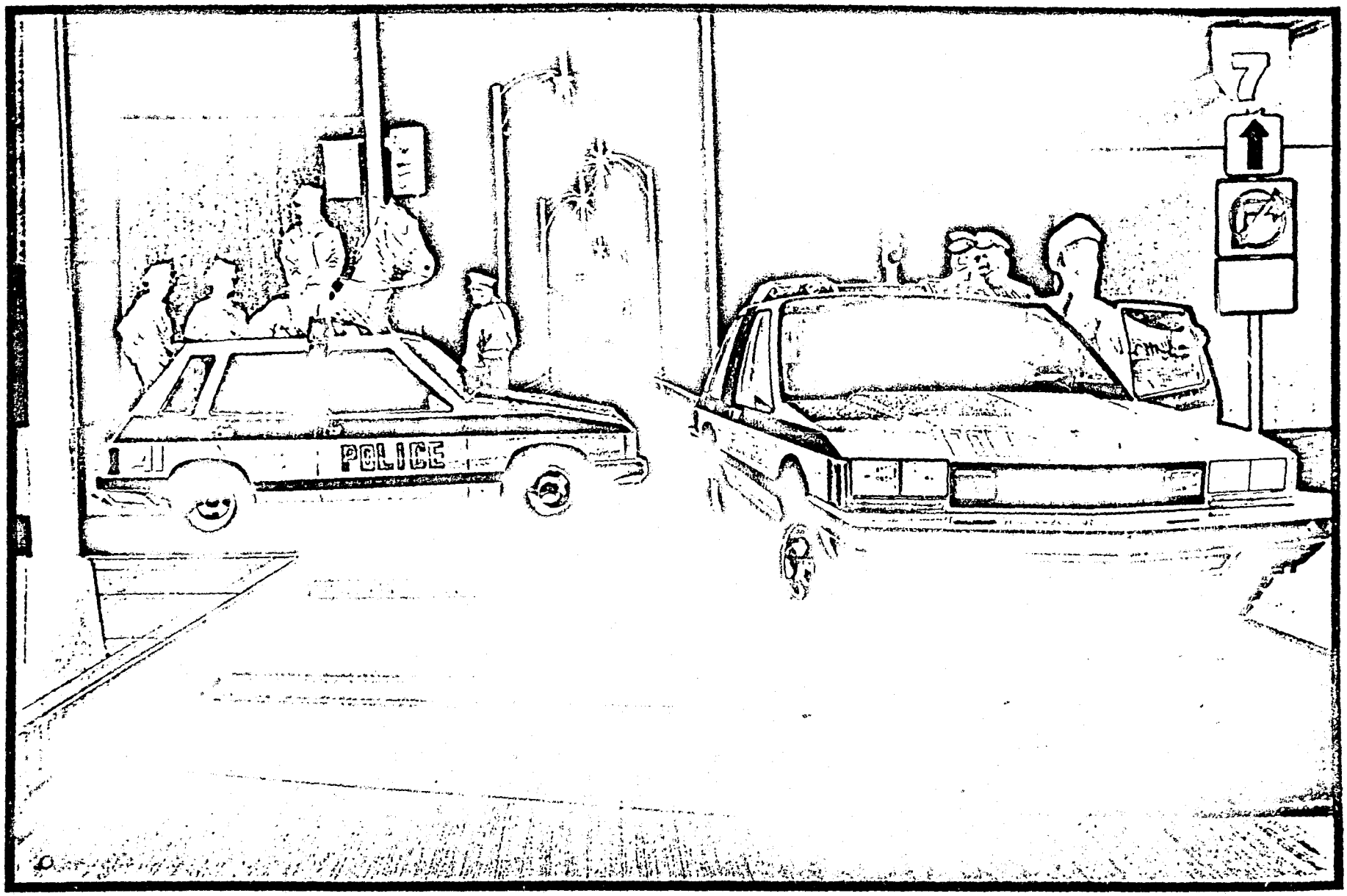
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1.0 PROGRAM OBJECTIVE AND SUMMARY

Autodynamics Corporation of America, under a sub-contract from Aerospace Corporation, performed a design feasibility study to develop an Alternate Police Patrol Car Body Design. The objective of this design study was to develop a body design that would reduce the overall weight of a Police Patrol Car, thus lowering fuel consumption and improving the operating efficiency.

Autodynamics Corporation recognizes the fact that the most efficient way to obtain operating economy improvements is to reduce the size and weight of the vehicle. However, generally a smaller size exterior package dictates less interior room. Considering the fact that a Patrol Car is operated by Policemen, ofter larger than average in size, decreased interior dimensions would cause the operator greater fatigue, discomfort, and increased difficulty in entrance and egress, which under emergency conditions could prove to be hazardous.

Autodynamics Corporation's design approach was to develop a new Alternate Police Patrol Car Body design aimed at meeting the following objectives:

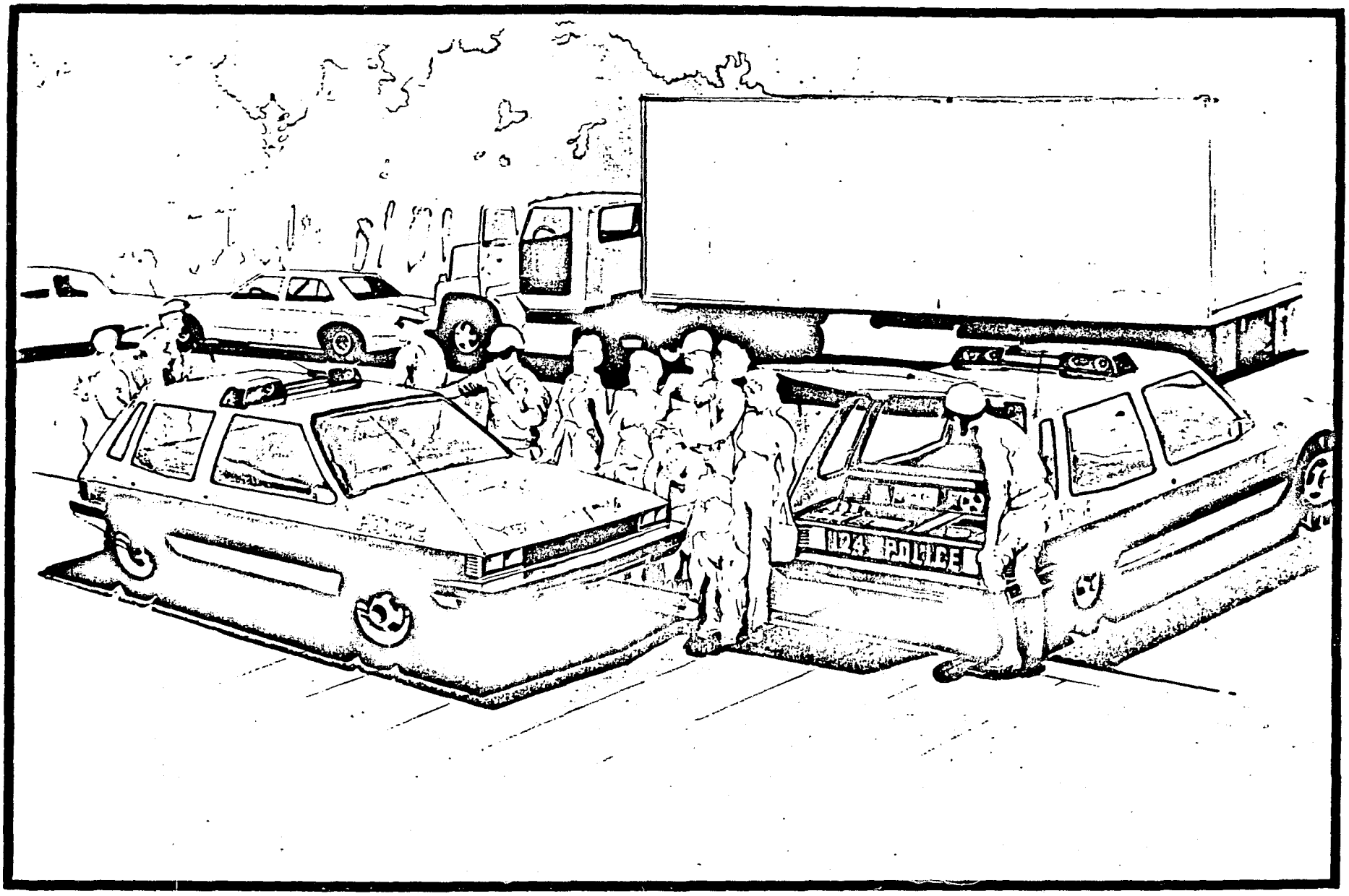
- New body design/separate frame.
- Reduced vehicle size.
- Minimum vehicle weight.
- Improved operating economy.
- Improved interior package.
- Low Tooling Build System
- Body design adaptable to current production chassis.

1.0 PROGRAM OBJECTIVE AND SUMMARY (Continued)

To accomplish these objectives, Autodynamics Corporation has developed a vehicle design to adapt to a 1976 Chevrolet Blazer or Chrysler Ramcharger/Trailduster chassis. This design concept creates a vehicle of compact car exterior proportions while rendering the interior package space of a full size passenger car.

The construction techniques proposed for this body design utilize a low tooling approach pioneered by Autodynamics Corporation. Straight line standard steel tubing is used for the structural frame and exterior skins are manufactured from either standard press break equipment or molded fiberglass parts. This body construction, in conjunction with the usage of currently produced chassis, eliminates the high tooling investment cost associated with most new vehicle designs.

This report discusses important features considered during the design development study, including highlights of the initial program work tasks. Significant information prepared under these initial work tasks is included in the Appendix, Section 11.0.


U.S. POLICE

2.0 PROPOSED VEHICLE DESCRIPTION

Autodynamics' proposed Police vehicle is specifically designed for industrial service use based on the adaptation of a commercial, compact vehicle chassis such as the Chevrolet Blazer or the Chrysler Ramcharger/Trailduster chassis. The unique vehicle body is designed to incorporate the required functional features necessary for an urban Police vehicle.

Important considerations have been given to a minimum exterior size vehicle with interior accommodations equivalent to a full size Police car. Design considerations have also been given for the installation of projected data communications systems such as:

- Micro Processor
- Mass Memory System
- Recorder
- Computer Terminal
- Heads Up Display System
- Teletype Printer
- Remote Terminal Transceiver

Autodynamics proposes that this equipment can be installed in the center console, between the driver and passenger seats.

2.0 PROPOSED VEHICLE DESCRIPTION (Continued)

The approach for providing a vehicle designed for a specific use is exemplified in the Postal Carrier, Armored Vehicle, Ambulance, and Fire Apparatus industries. The work requirements of these vehicles dictates that industrial vehicles be utilized for these functions as opposed to the adaptation of a commercial, passenger vehicle. Because of the service nature of the Police vehicle, it is recognized that a similar approach of providing an industrial vehicle will greatly improve the efficiency and effectiveness of the Police function.

The following is a list of specific highlights of Autodynamics' proposed Police vehicle, considering general size of the vehicle, payload, weight, and ground clearance.

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AUTODYNAMICS' POLICE VEHICLE

Features	
Wheelbase	106.5"
Length	171.0"
Width	78.0"
Height	63.0"
Tread - Front/Rear	65.8"/62.8"
Engine	350 V8
Transmission	Automatic
Curb Weight	3,204 lbs.
Load Carrying Capacity	1,696 lbs.
Construction	Body-Frame
Fuel Economy - City/Highway (E.P.A.)	16/21 M.P.G.
Cargo Volume - Cubic Feet	16.3
Headroom - Front/Rear	41.0"/36.5"
Leg Room	42.5"/39.0"
Shoulder Room	60.0"/60.0"
Hip Room	60.0"/60.0"
Glass Area (Square Inches)	6,776 sq. in.

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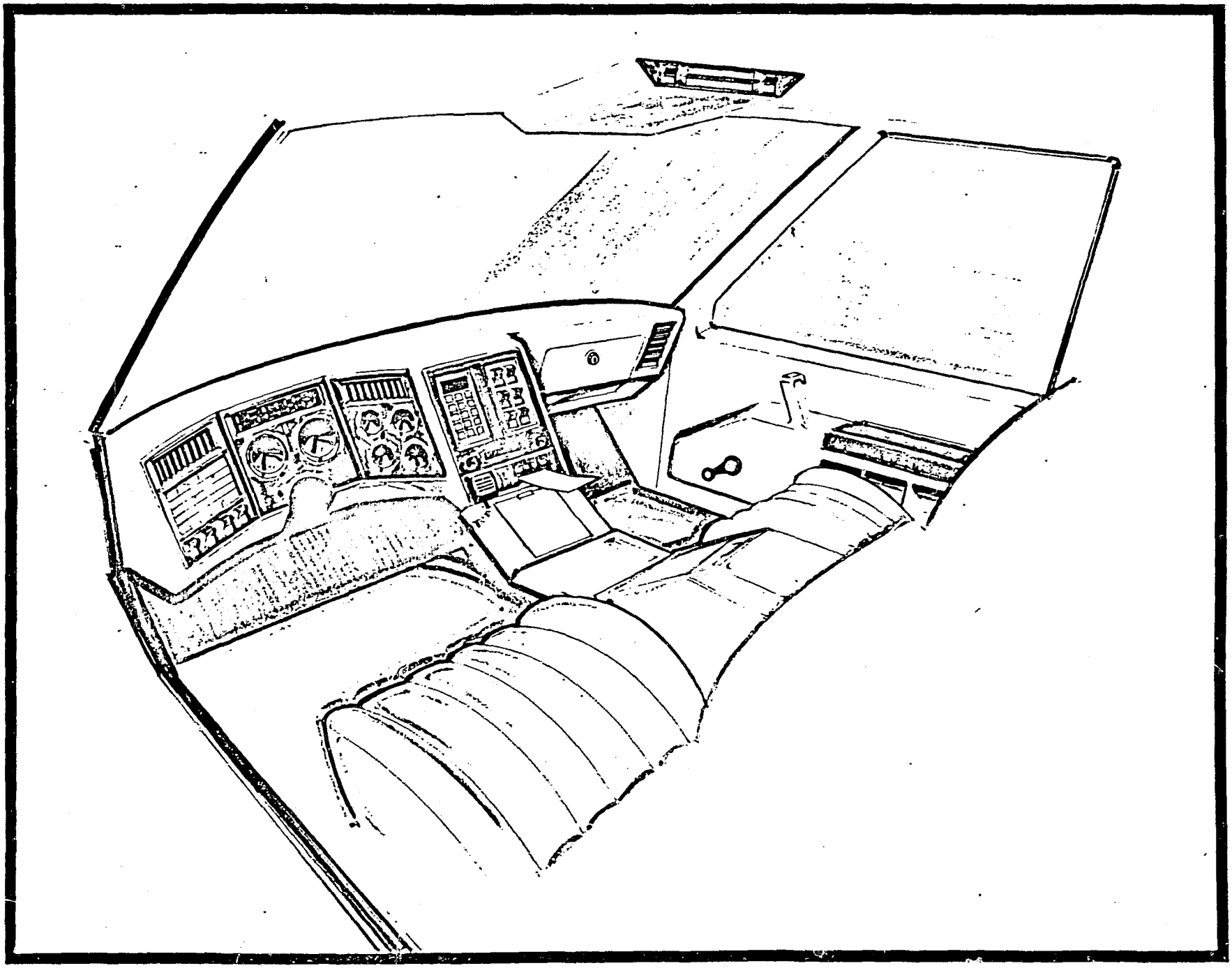

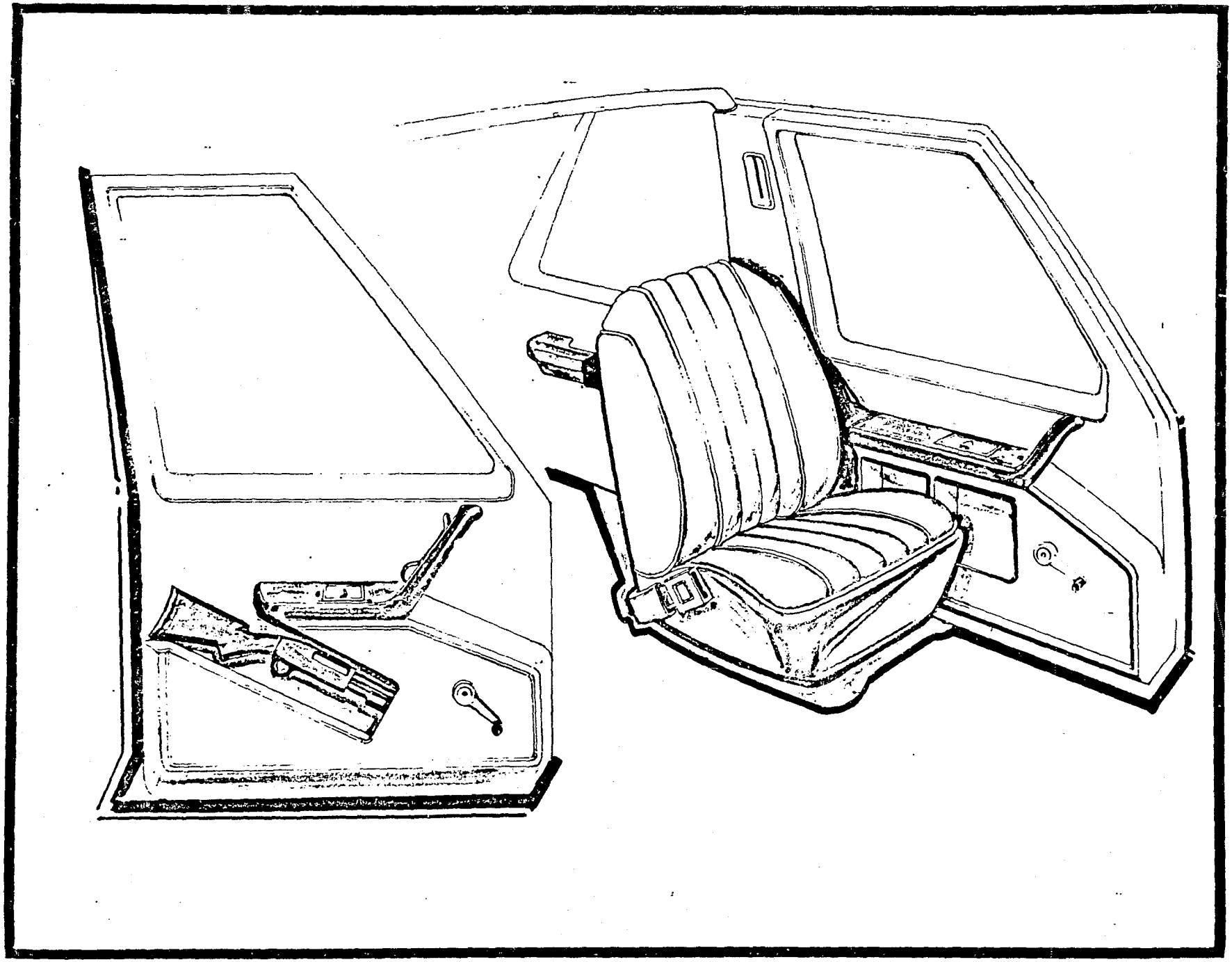

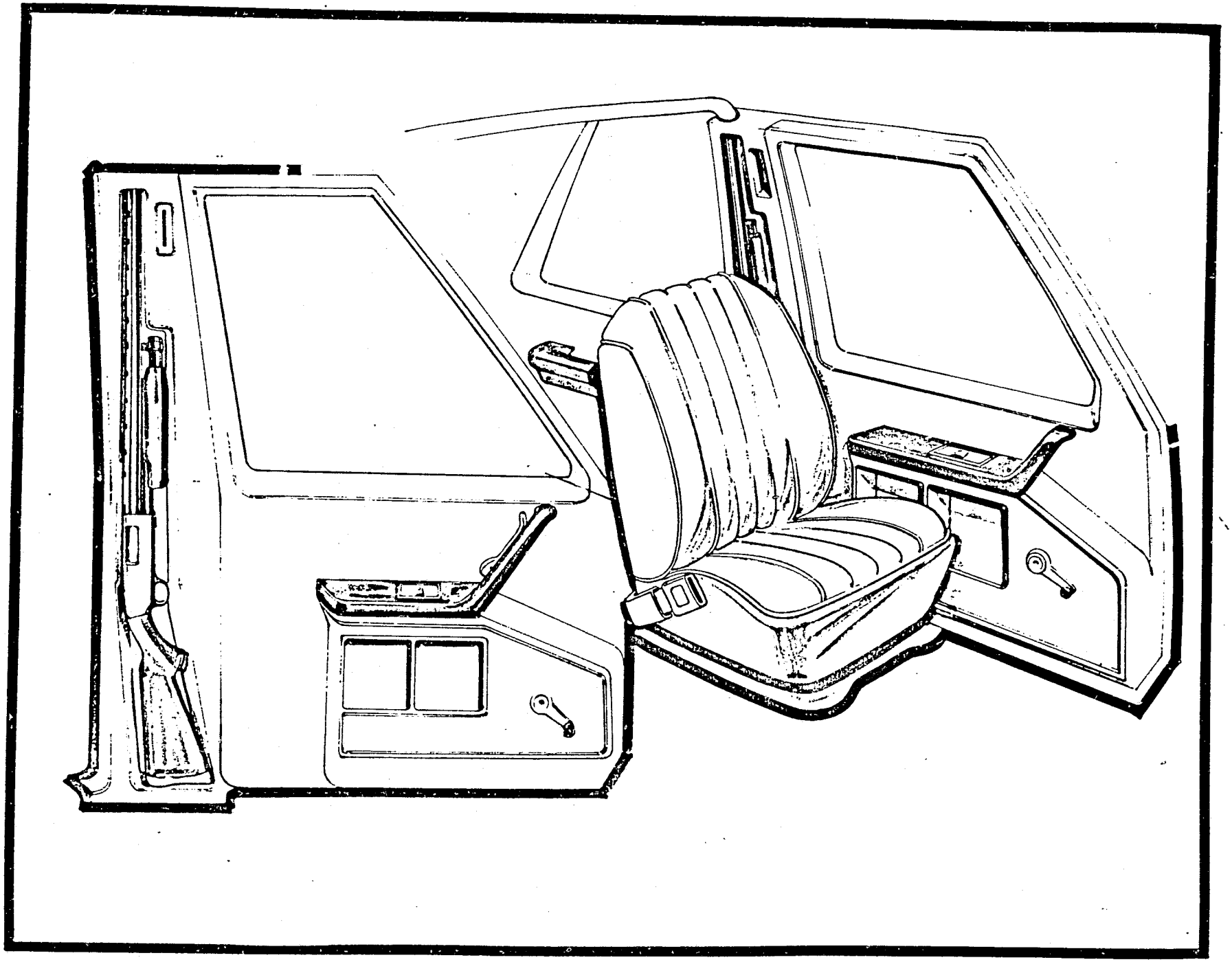

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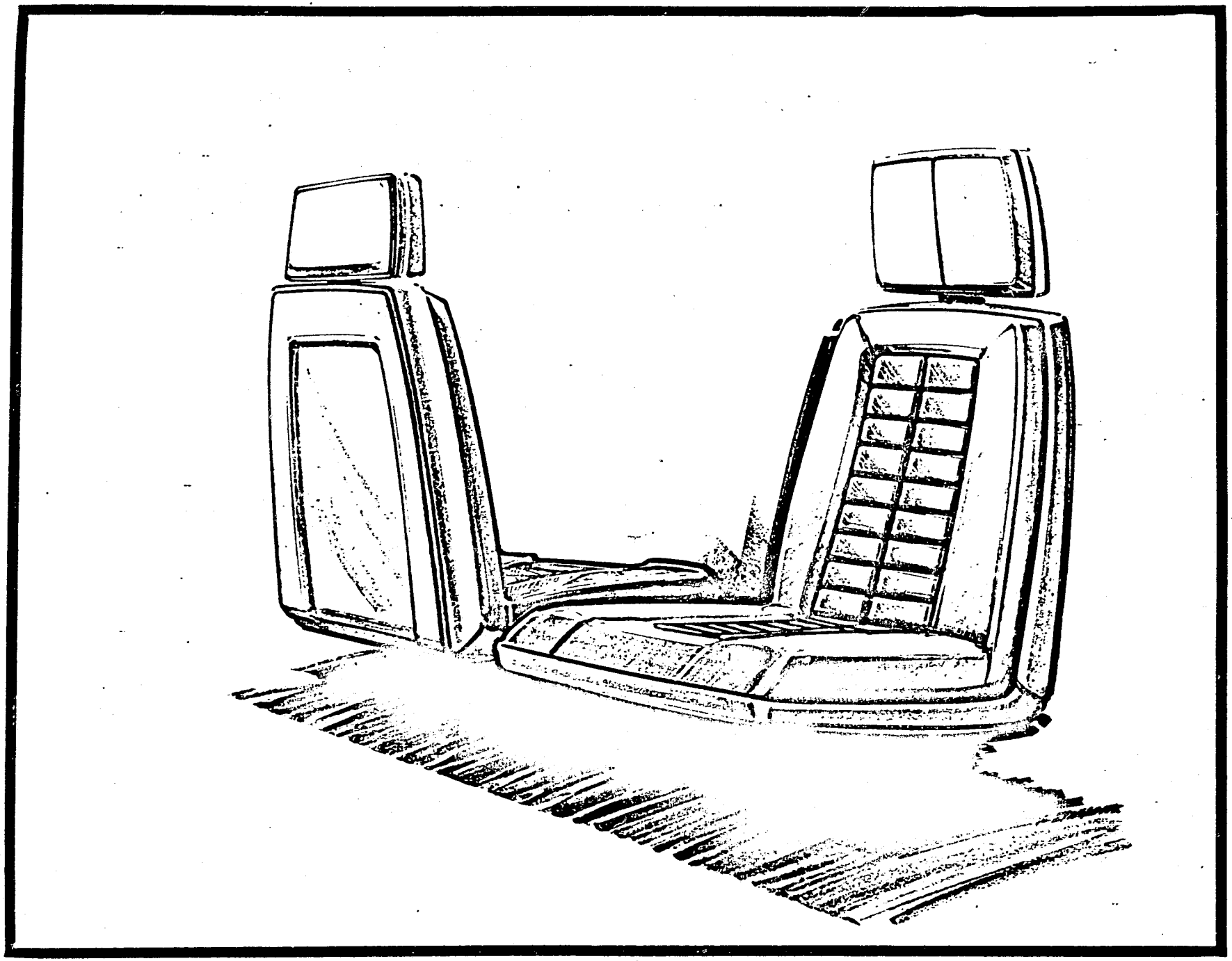

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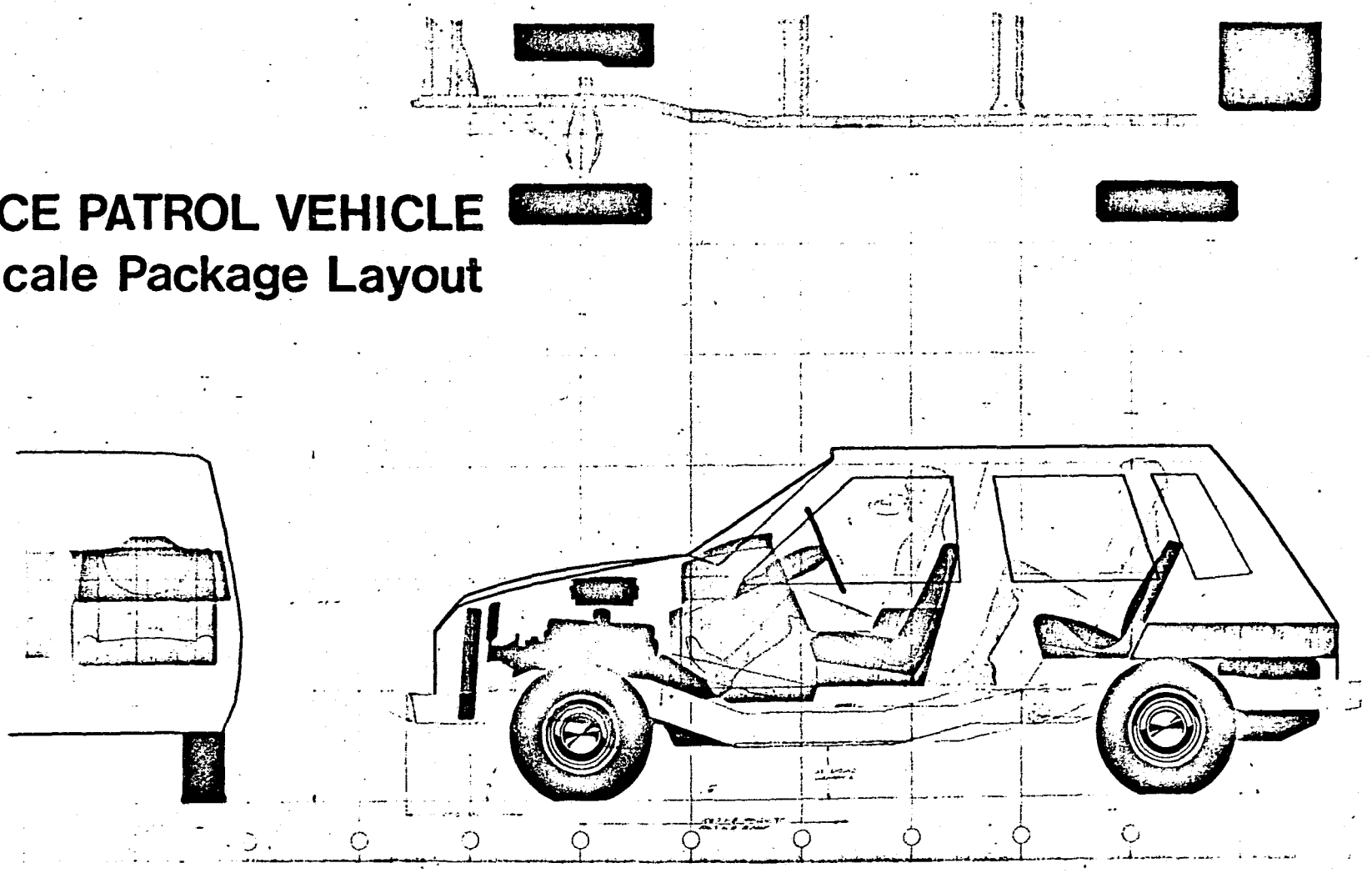
· POLICE PATROL VEHICLE
1/4 Scale Package Layout



3.0 VEHICLE WEIGHT COMPARISON SUMMARY

The proposed vehicle design is projected at a curb weight of 3,204 pounds. Listed below is a comparison study of the basic weights of the proposed design, Chevrolet Nova, and a "Full Sized" Police vehicle. Autodynamics estimates weight savings of considerable magnitude in two major areas; the body assembly and the engine/transmission assembly.

The proposed usage of a "future model" V6 engine and light weight transmission assembly is estimated at 606 pounds versus 801 pounds for the 350 V8 with automatic transmission.

Autodynamics estimates a body weight of 1,154 pounds utilizing weight saving materials and the simplified build system which is a considerable savings from the "Full Sized" body weight of 1,411 pounds. The basic comparison follows.

	PROPOSED	NOVA	FULL SIZED
Body Assembly	1,154	Unitized	1,411
Chassis Assembly	2,050	Unitized	2,950
Totals	3,204	3,415	4,361

NOTE: Actual 1976 Nova, Los Angeles County Police vehicle weight - 3,720 pounds.

4.0 VEHICLE CONSTRUCTION AND MANUFACTURING FEASIBILITY

A major deterrent in developing and implementing a new vehicle design into production is the high capital investment. Most new body designs require all new stretch form dies required to form metal parts along with new assembly and welding fixtures. The capital investment cost required for tooling can be absorbed in the purchase price of the automobiles if the volume for the car on an annual rate is high enough to add capital investment cost and still maintain the vehicle cost at a competitive and economical selling price. Generally a volume of 250,000 units per year is a break-even point to warrant new tooling for a vehicle.

Autodynamics recognizes and understands the relationship between capital investment cost and initial purchase cost; therefore, Autodynamics kept in mind these important economic considerations in designing the new Police car. Autodynamics feels that this is particularly important in considering that production rates for a specialized Police vehicle would be between 20,000 and 40,000 units per year.

Listed below is a brief synopsis of the manufacturing and construction techniques proposed for the Alternate Police Patrol Car Body Design.

4.0 VEHICLE CONSTRUCTION AND MANUFACTURING FEASIBILITY (Continued)

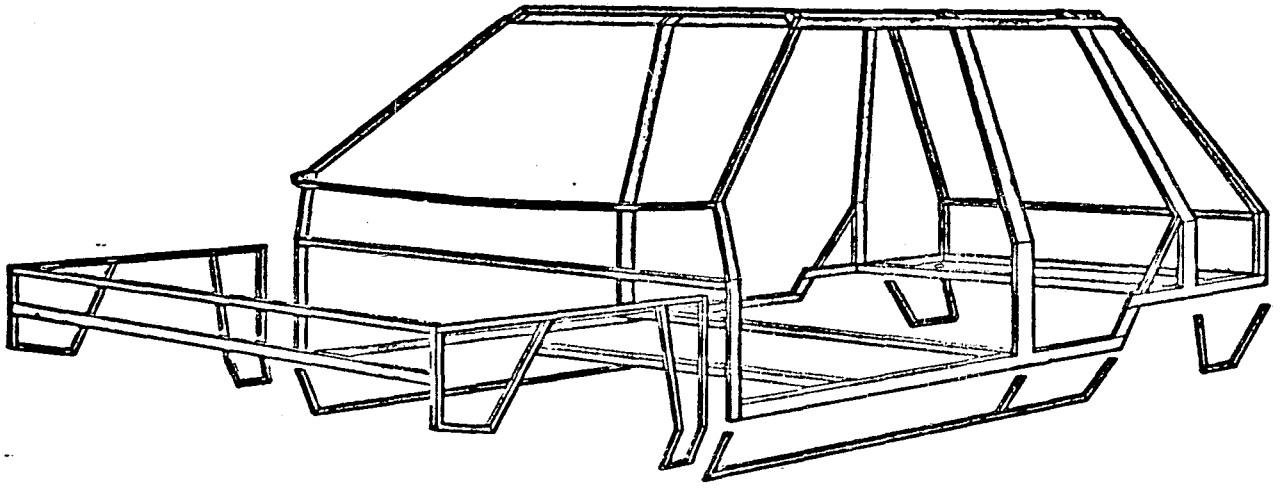
Autodynamics Corporation has developed a low tooling build system to be incorporated for the construction of the new Police Car body. By incorporating this concept, no major stretch form dies are required for manufacturing this proposed vehicle.

The basic body and front end structure would utilize rectangular steel tubing welded together for its main structural members. Exterior panels will be fabricated from low cost edge dies that will be inserted into standard press breaks to provide the required exterior contour shape and also the mounting flanges for attaching the panels to the body's rectangular sections.

The finished exterior panels can be attached to the body's rectangular structural members by either welding, riveting, or bonding. These attachments will be made in areas not visible from the exterior of the vehicle, thus eliminating sheet metal finishing.

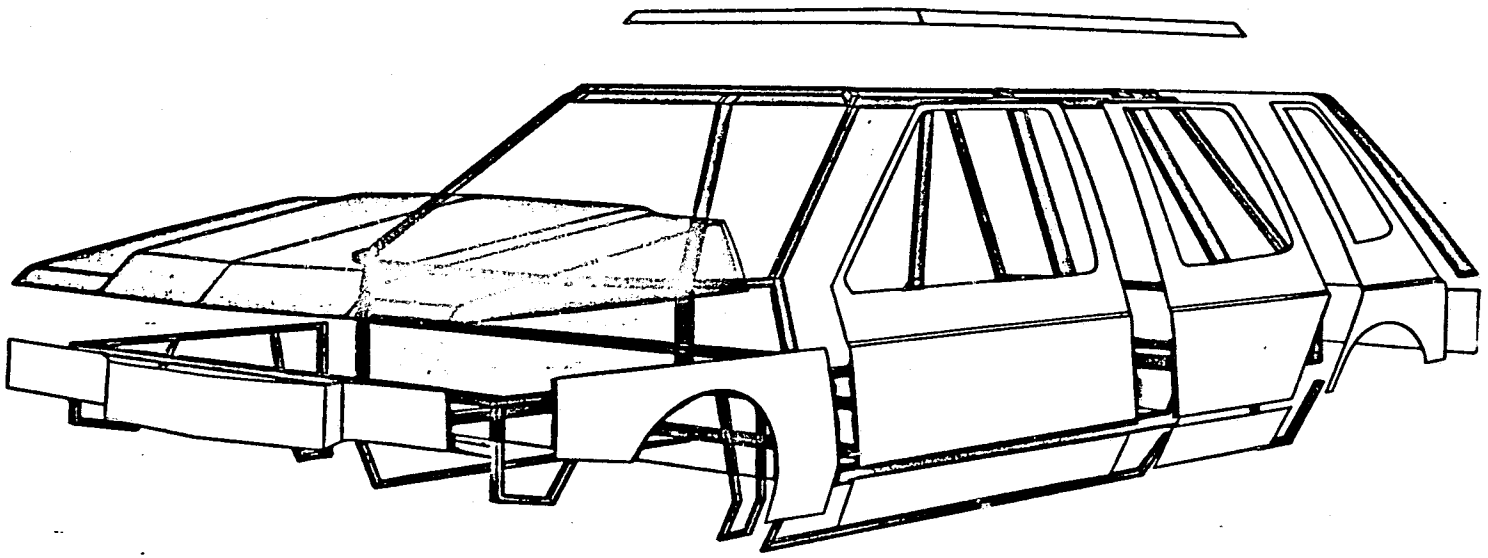
Certain parts of the vehicle that require major shape changes will be manufactured from random spray fiberglass and attached to the steel panels.

PROPOSED POLICE VEHICLE BODY BUILD SYSTEM



- STRUCTURAL TUBE FRAME SYSTEM
- STEEL EXTERIOR SKIN PANELS
- FIBERGLASS PANELS
- FLOOR UNDERBODY PANELS

PROPOSED POLICE VEHICLE BODY BUILD SYSTEM



- STRUCTURAL TUBE FRAME SYSTEM
- STEEL EXTERIOR SKIN PANELS
- FIBERGLASS PANELS
- FLOOR UNDERBODY PANELS

5.0 INTERIOR AND EXTERIOR DIMENSIONS COMPARISON

This section discusses the overall interior and exterior dimensions of Autodynamics' proposed Police Car Body design. To objectively compare the sizes of the proposed design, a comparison is given to the following vehicles.

- 1976 Chevrolet Nova, considered to be a compact vehicle.
- 1976 Full Sized Sedan

Interior Dimension Comparison

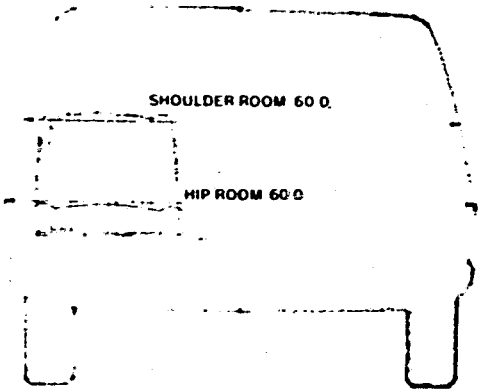
The interior proportions of our design proposal offer a seating package equaling or surpassing the dimensions of a "Full Sized" Police vehicle in most instances. This is noteworthy when considering the proposed vehicle's exterior length is 51.7 inches shorter and 1.5 inches narrower than that of the "Full Sized" vehicle.

The following is a comparison of interior dimensions (seating package) of the proposed vehicle with that of the Chevrolet Nova and a "Full Sized" Police unit.

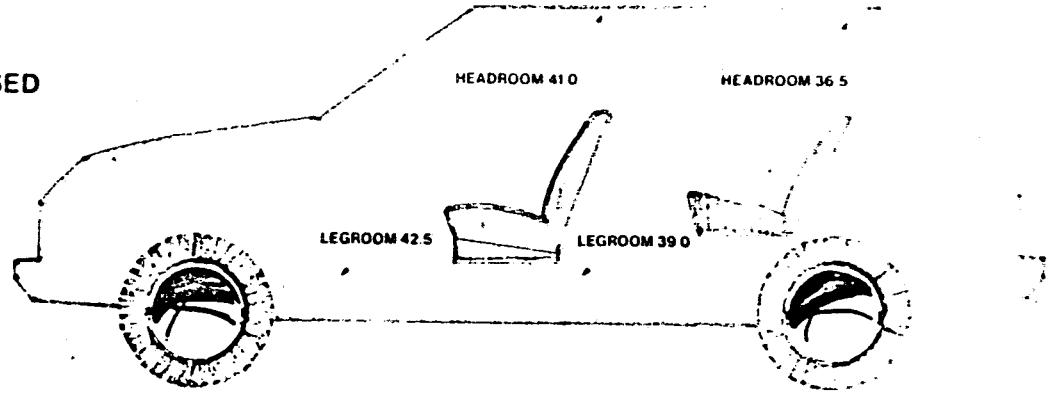
	PROPOSED	NOVA	FULL SIZED
Headroom - Front/Rear	41.0/36.5	39.5/36.5	38.9/38.0
Leg Room - Front/Rear	42.5/39.0	41.7/36.3	42.5/38.8
Shoulder Room - Front/Rear	60.0/60.0	56.6/56.7	64.0/63.8
Hip Room - Front/Rear	60.0/60.0	55.9/46.4	59.3/59.7

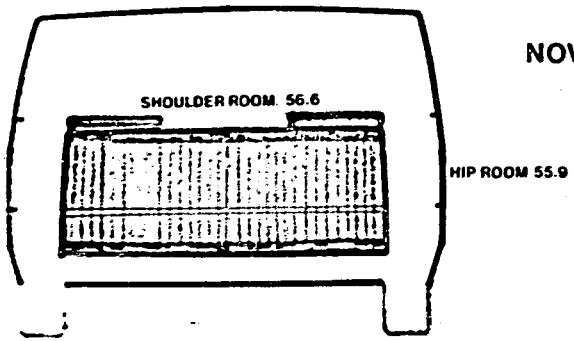
NOTE: Dimensions are for four-door vehicles.

INTERIOR PACKAGE DIMENSIONS

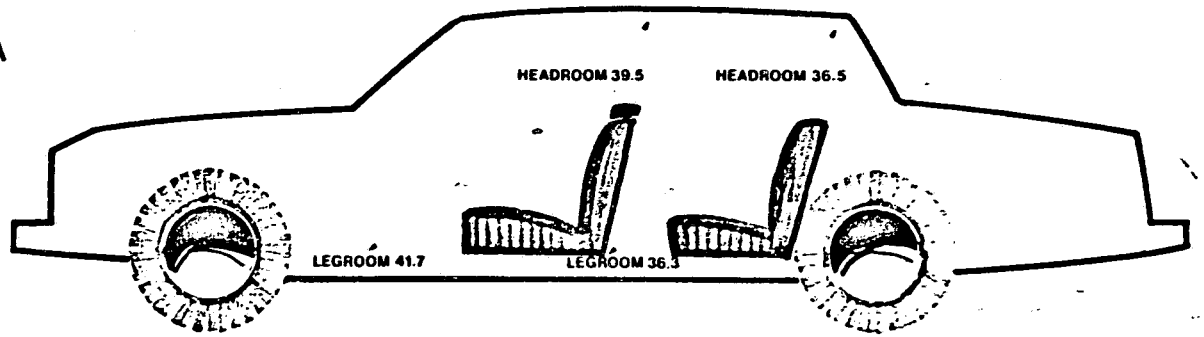


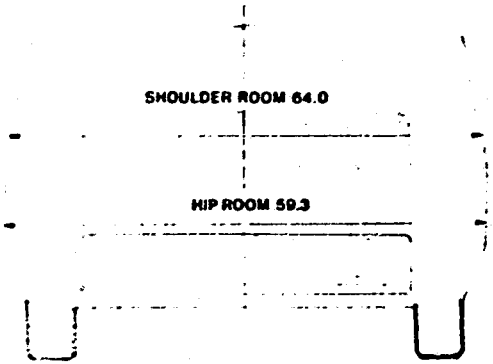
PROPOSED



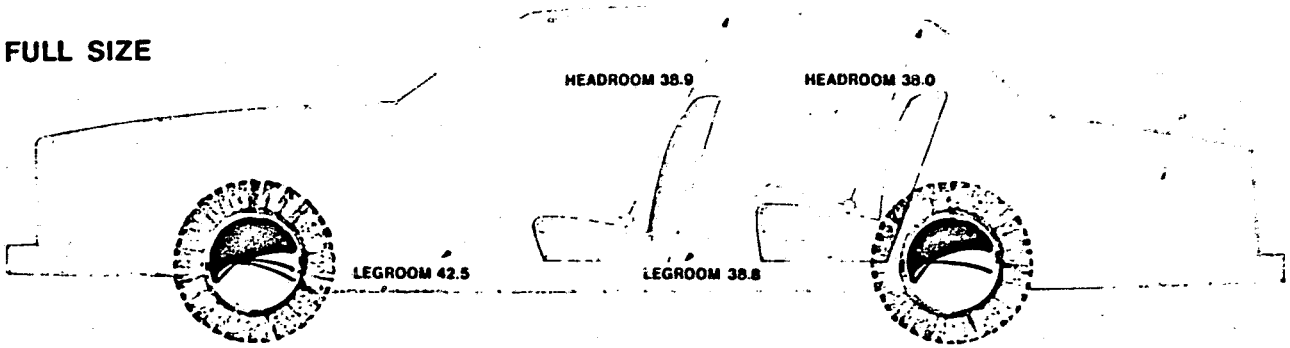


NOVA





FULL SIZE



5.0 INTERIOR AND EXTERIOR DIMENSIONS COMPARISON (Continued)

Exterior Dimension Comparison

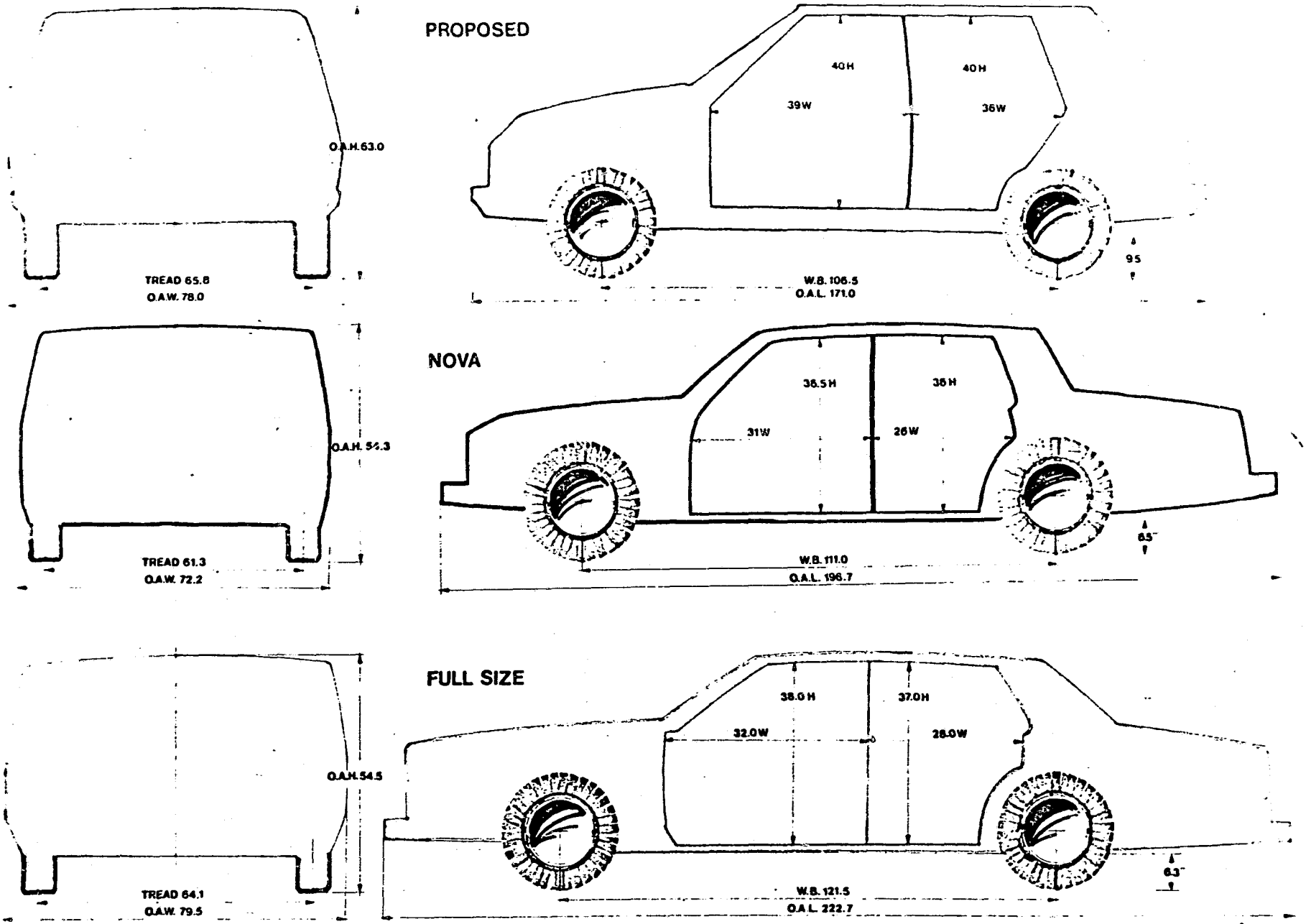
The exterior dimensions of our design proposal outline a compact length, wide bodied vehicle adapted to a stable, wide-tracked chassis. The advantages of these proportions are many; the most prominent being the maintenance of a large interior package while the compact length enhances handling, fuel economy, parking, and maneuverability. The following is a comparative analysis of the basic exterior dimensions between the proposed design, a Chevrolet Nova, and a typical "Full Sized" Police vehicle.

	PROPOSED *	NOVA	FULL SIZED
Wheelbase	106.5	111.0	121.5
Length	171.0	196.7	222.7
Width	78.0	72.2	79.5
Height	63.0	54.3	54.5
Tread - Front/Rear	65.8/62.8	61.3/59.0	64.1/64.0

* Blazer Chassis

NOTE: Dimensions are for four-door vehicles.

EXTERIOR PACKAGE DIMENSIONS



6.0 DURABILITY AND REPAIRABILITY

Autodynamics' proposed Police vehicle features a high degree of both durability and repairability based on the following factors.

Durability

Autodynamics' selection of a utility vehicle chassis (Blazer) is a strong, durable chassis designed to handle more rugged usage than even Police patrol work. Also, because of the high G.V.W. rating of the chassis compared to the work load of the Police body, this will result in a much higher service life for such chassis components as brakes, wheel bearings, suspension components, etc.

Autodynamics also proposes that certain steel panels on the vehicle be treated with corrosion preventative coating such as galvanize or zinc alloy to achieve maximum rust protection for the vehicle.

The vehicle's high ground clearance and heavy duty truck components will result in less damage from road obstacles and provide for greater durability and repairability than conventional Police vehicles.

Repairability

The low tooling build concept will provide easy replacement of major body panels. The exterior skin panel attachments will not be visible from the exterior, thus allowing a wide choice of body fasteners to retain the panels onto the body's structural framing, using rivets, threaded fasteners, or other attachment methods.

7.0 CRASHWORTHINESS AND OCCUPANT SAFETY

The proposed Police vehicle will provide the operator with a high degree of passenger safety.

The body framing system is designed utilizing large rectangular steel tubing members to completely enclose the occupant area and form a strong (roll cage) structure capable of withstanding severe impact and roll over loads.

The exterior of the vehicle will be surrounded by an impact bar bumper strip constructed from energy absorbing steel substrate members covered with a urethane coating to protect the vehicle from damage due to minor impact, parking lot accidents, etc.

The interior of the proposed vehicle will have an energy absorbing instrument panel and door trim panels combined with a seat belt/ shoulder harness system integral to the seat structure which will provide the driver and passenger an optimum energy absorbing system.

8.0 LOAD CARRYING CAPACITY

The proposed vehicle is far superior in load carrying capability than either of the comparison vehicles. the Chevrolet Nova or a "Full Sized" Police unit. Passenger cars are not rated by G.V.W. as commercial vehicles are, but rather are rated as to load capabilities based upon the number of seating positions plus a maximum trunk load. Both of the comparative vehicles are rated as six passenger vehicles (at 150 pounds per passenger) and carry the uniform 200 pounds maximum trunk load giving a load capacity of 1,100 pounds.

Our design proposal is rated by G.V.W. due to its utility vehicle chassis. The G.V.W. of both the Blazer and the Ramcharger/ Trailduster chassis is rated at 4,900 pounds and with our projected vehicle weight of 3,204 pounds results in a 1,696 pound payload or a 596 pound advantage over both comparison vehicles.

	Load Capacity
Proposed Police Vehicle	1,696 lbs.
Chevrolet Nova	1,100 lbs.
Full Sized	1,100 lbs.

9.0 PROTOTYPE AND PRODUCTION COST ESTIMATES

The following costs can be used as a guide in estimating the financial investments required to develop the Autodynamics proposed vehicle design into an actual, running prototype. In addition, Autodynamics has provided cost estimates to construct a limited number of pre-production vehicles (two to twenty units), as well as cost estimates to tool and manufacture the proposed design based on annual production rates of 20,000 to 40,000 units per year.

- Prototype Development Cost - One (1) Vehicle

  - Vehicle Mock-Up - This work effort will include a package mock-up build of wood and cardboard placed over the Blazer chassis for evaluation of appearance, entrance and egress, seating, and other critical design features to the Police vehicle application. The cost to prepare this type of mock-up will be . . . . . $ 24,000.00

  - Prototype Engineering - Upon completion of the mock-up, preliminary engineering must be completed in sufficient detail allowing prototype fabrication. This would include preliminary structural analysis, hardware studies, and engineering layouts sufficient for prototype build. The cost to complete this engineering work effort will be $160,000.00

9.0 PROTOTYPE AND PRODUCTION COST ESTIMATES (Continued)

- Prototype Development Cost - One (1) Vehicle (Continued)

  - Prototype Tools and Fixtures - Temporary tooling will be developed in order to fabricate the prototype vehicle. This tooling will include press break dies, assembly fixtures, fiberglass molds, and necessary wood patterns required to fabricate the prototype vehicle, including vacuum form interior trim components. Prototype tooling cost will be . . . . . $ 80,000.00

  - Prototype Fabrication - It is proposed that one operable prototype be fabricated using the above temporary tooling. This prototype will be used for field testing and for evaluation of operating economies, durability, and functional effectiveness of the vehicle design. The cost for fabricating one prototype vehicle will be $140,000.00

Prototype Development Cost - Total $404,000.00

- Pre-Production Prototypes

  - Limited Production Tooling will be developed so that approximately ten to fifty vehicles may be fabricated from this tooling to reduce the cost of the actual prototype fabrication of the vehicles. Considerations

9.0 PROTOTYPE AND PRODUCTION COST ESTIMATES (Continued)

° Pre-Production Prototypes (Continued)

for this tooling will be given so that twenty (20) units may be fabricated concurrently with a staggered completion schedule of the twenty units within twelve months. Tooling cost for this limited production will be $250,000.00

° Pre-Production Fabrication - Utilizing the tooling listed above, it is proposed that twenty operable pre-production vehicles be fabricated. These vehicles will be identical to the prototype vehicle and will be used for extended field testing evaluation and fleet operations. The cost to build each vehicle from the above tooling will be

. . . . . $ 30,000.00 per vehicle

° Production Cost Estimates

° Production Tooling Estimate - Based on low tooling build systems previously developed by Autodynamics and implemented into production, we are estimating the following tooling cost, sufficient to construct between 20,000 and 40,000 vehicles per year. Tooling estimate $1,400,000.00

9.0 PROTOTYPE AND PRODUCTION COST ESTIMATES (Continued)

- Production Cost Estimates (Continued)
  - Production Vehicle Cost Estimate - 20,000 units per year - $4,600.00 per vehicle, including chassis* purchase.

* $2,000.00 chassis purchase price is estimated.

10.0 PROGRAM TASKS SUMMARY

In order for Autodynamics Corporation to complete the contractual obligations outlined in Aerospace Corporation's Statement of Work dated May 12, 1975, a work plan was prepared that outlined each work task and Autodynamics' interpretation of the work required. The work tasks were described as follows:

- Task I - Initial Design Concepts
- Task II - Concept Feasibility Assessment
- Task III - Prepare Design Concept
- Task IV - Final Report

Each of these tasks were treated as individual programs, and at the end of Tasks I and III reviews were held with Aerospace Corporation personnel.

Task I - Initial Design Concepts

Task I, as interpreted by Autodynamics Corporation of America, was a two-fold task. First was to research the current "state-of-the-art" of Police vehicles; that is to compile and analyze data on all vehicles offered by domestic manufacturers as Police options. Secondly, to prepare initial design concepts of vehicle configurations that were based upon the stated program directives of lighter vehicle weight and better fuel economy without sacrifice of comfort, convenience, dependability, storage space, or performance and safety.

10.0 PROGRAM TASKS SUMMARY (Continued)

Task I - Initial Design Concepts (Continued)

Initially, all data on Police vehicle options by domestic manufacturers was collected and compiled. From this compilation, a chart depicting the 1976 Police vehicle offerings and their pertinent specifications was prepared. Additionally, the available sales literature on these vehicles was included as a handout in our Task I Review.

The next phase of this task was to prepare the initial design concepts of proposed vehicle configurations. We divided this task into three (3) major groupings:

- Rework of existing vehicles.
- New body on an existing chassis.
- New vehicle - body and chassis or unitized.

To better define the potential of the domestically manufactured vehicles for re-work or re-body to a Police vehicle, a matrix chart evaluating various vehicles was created. In analyzing these vehicles, we concluded:

- The Nova offers the best base vehicle potential with little or no re-work.
- With major body re-work to the rear compartment, the Pacer offered great potential.
- Considering 1976 production vehicles, there were basically no "framed" passenger cars being manufactured with a compact wheelbase upon which to mount a new body design.

10.0 PROGRAM TASKS SUMMARY (Continued)

Task I - Initial Design Concepts (Continued)

- Utility vehicles did offer a separate frame/body construction and do have a compact sized wheelbase dimension.

Integrating all the data we had compiled on Police vehicles and production vehicles available, and considering the program objectives, we then outlined an "Optimum Police Vehicle" package.

This vehicle, in our opinion, offered the best possible Police vehicle package if cost factors were not considered. With a wheelbase of 109.0 inches, overall length of 168.0 inches, width of 78.0 inches, height of 62.0 inches, and a track of 64.0 inches front and rear, the "Optimum Vehicle" falls between the compact and intermediate size vehicles.

We, therefore, proposed the following in our Task I, Initial Design Concept, Review meeting:

- All New Vehicle - Our proposed "Optimum" vehicle as described above.
- New Body with Carry-Over Chassis - Adapting a body design of the proportions of our "Optimum" vehicle to a utility vehicle chassis. A Blazer or Jeep was suggested.
- Re-worked Existing Vehicle - We proposed the re-work of a Nova, Pacer, or Granada as the most feasible.

10.0 PROGRAM TASKS SUMMARY (Continued)

Task I Review

The Task I Review was conducted on November 25, 1975, at our facilities. At this meeting, representatives of Aerospace Corporation and Autodynamics Corporation of America discussed the accomplishments of the program to date and concurred on future direction.

The various vehicle concepts, drawings, charts, graphs, and package drawings were reviewed. The three basic vehicle categories presented for consideration (all new vehicle, new body/existing chassis, and reworked vehicle) were extensively discussed. The merits and drawbacks of each proposal were examined including such points as relative tooling and investment costs as well as assembly considerations. Based upon the data presented, and with the unanimous opinion of those present, the direction was given to Autodynamics to proceed with an adaptation of the "Optimum Vehicle" body configuration on a Blazer production chassis.

Task II - Concept Feasibility Assessment

The Task II assessment of concept feasibility was handled in the Task I Review meeting. As previously stated in the review outline, all concepts were analyzed and the direction to proceed with Task III for our proposed "Optimum Vehicle" body design mounted on a Blazer chassis was received.

10.0 PROGRAM TASKS SUMMARY (Continued)

Task III - Prepare Design Concept

The basis for our Task III design concept was predetermined in Task II, Concept Feasibility Assessment, of those proposals presented from Task I. The direction for Task III, to integrate our so-called "Optimum Vehicle" body design onto a conventional two-wheel drive Blazer chassis, was accomplished with a minimal number of revisions.

The major problem that evolved from this marriage was created by the frame differences between the Blazer and our optimum vehicle proposal. The Blazer frame is an inboard rail ladder type frame while the optimum vehicle utilized a conventional passenger car type perimeter frame design. While the frame differences were major, the resulting revisions to the body were relatively minor. The vehicle overall length was revised from 168.0 inches to 171.0 inches while the height gained one inch to 63.0 inches from 62.0 inches.

It should be noted that although we stipulate the Blazer chassis throughout this report for ease of comparisons and interpretations, the Ramcharger/Trailduster chassis is equally as well suited for this purpose and in fact is virtually interchangeable with the Blazer.

11.0 APPENDIX

- Projected Vehicle Weight Study
- Police Vehicle Comparison Chart
- Domestic Police Vehicle Chart
- Rating Analysis Matrix
- Various Renderings - Rework of Existing Vehicles for Police Adaptation

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PROJECTED VEHICLE WEIGHT STUDY

BODY	
° Body-in-White	547.0 Pounds
° Seats	143.0 Pounds
° Glass	101.0 Pounds
° Interior Trim - Body Electrical	363.0 Pounds
SUB-TOTAL - BODY	1,154.0 Pounds
CHASSIS	
° Frame Assembly	339.0 Pounds
° Engine and Transmission	606.0 Pounds
° Front and Rear Suspension, Steering	445.0 Pounds
° Brakes	137.0 Pounds
° Fuel and Exhaust Systems	81.0 Pounds
° Wheels and Tires	199.0 Pounds
° Chassis Electrical	63.0 Pounds
° Radiator and Grille	28.0 Pounds
° Front and Rear Bumper Systems	152.0 Pounds
SUB-TOTAL - CHASSIS	2,050.0 Pounds
TOTAL VEHICLE WEIGHT	3,204.0 Pounds

POLICE VEHICLE COMPARISON CHART

	PROPOSED *	NOVA	FULL SIZED
Wheelbase	106.5	111.0	121.5
Length	171.0	196.7	222.7
Width	78.0	72.2	79.5
Height	63.0	54.3	54.5
Tread - Front/Rear	65.8/62.8	61.3/59.0	64.1/64.0
Engine	350 V8	350 V8	350 V8
Transmission	Automatic	Automatic	Automatic
Curb Weight	3,204	3,415	4,361
Load Carrying Capacity	1,696	1,100	1,100
Construction	Body-Frame	Unitized	Body-Frame
Fuel Economy - City/Highway (E.P.A.)	16/21	14/19	13/18
Cargo Volume - Cubic Feet	16.3	13.0	18.9
Headroom - Front/Rear	41.0/36.5	39.5/36.5	38.9/38.0
Leg Room	42.5/39.0	41.7/36.3	42.5/38.8
Shoulder Room	60.0/60.0	56.6/56.7	64.0/63.8
Hip Room	60.0/60.0	55.9/46.4	59.3/59.7
Glass Area (Square Inches)	6,776	4,210	4,513

* Blazer Chassis

NOTE: Four Door Vehicle Dimensions used.

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1976 DOMESTIC POLICE VEHICLES

	GENERAL MOTORS					FORD MOTOR						CHRYSLER								
	PONTIAC		CHEVROLET			FORD			MERCURY			PLYMOUTH				DODGE				CHRY.
	CATALINA	LEMANS	IMPALA	CHEVELLE	NOVA	CUSTOM 500 WAGON	CUSTOM 500	TORINO	MARQUIS WAGON	MARQUIS	MONTEGO	GRAN FURY	FURY	VALIANT	FURY WAGON	MONACO WAGON	MONACO	CORONET	DART	NEWPORT
Wheelbase	123.4	116.0	121.5	116.0	111.0	121.0	121.0	118.0	121.0	124.0	118.0	121.5	117.5	111.0	124.0	124.0	121.5	117.5	111.0	124.0
Length	226.0	212.0	222.7	209.3	196.7	225.6	223.9	212.1	228.3	229.0	219.7	222.4	218.4	199.6	226.4	229.5	225.7	218.4	203.4	227.1
Width	79.6	77.4	79.5	76.6	72.2	79.9	79.5	79.3	79.8	79.6	78.6	79.8	77.7	71.0	79.4	79.4	79.8	77.7	69.8	79.5
Height	54.2	53.5	54.5	53.8	54.3	56.7	54.3	53.3	56.9	54.7	53.3	54.8	54.0	54.0	57.6	57.6	54.8	54.0	54.0	55.2
Tread - Front	63.9	61.2	64.1	61.5	61.3	64.2	64.1	63.4	64.1	64.1	63.4	64.0	61.9	59.2	64.0	64.0	64.0	61.9	59.2	64.0
Tread - Rear	64.0	60.7	64.0	60.7	59.0	64.4	64.3	63.5	64.3	64.3	63.5	63.4	62.0	55.6	63.4	63.4	63.4	62.0	55.6	63.4
Engine - Std.	400 V8	400 V8	350 V8	250-6	350 V8	400 V8	351 V8	351 V8	400 V8	400 V8	351 V8	360 V8	318 V8	225-6	400 V8	400 V8	360 V8	318 V8	225-6	360 V8
Optional	455 V8	---	400 V8 454 V8	350 V8 400 V8	---	460 V8	400 V8 460 V8	400 V8 460 V8	460 V8	460 V8	400 V8 460 V8	400 V8 440 V8	360 V8 400 V8 440 V8	318 V8 360 V8	440 V8	440 V8	400 V8 440 V8	360 V8 400 V8 440 V8	318 V8 360 V8	400 V8 440 V8
Transmission	Auto	Auto	Auto	Auto	Auto	Auto	Auto	Auto	Auto	Auto	Auto	Auto	Auto	Auto	Auto	Auto	Auto	Auto	Auto	Auto
Fuel Capacity	25.8	22.0	26.0	17.2	17.2	21.0	24.2	26.5	21.0	24.2	26.5	20.5	25.5	16.0	24.0	24.0	20.5	25.5	16.0	26.5
Base Weight *	4416	4038	4361	4008	3415	4859	4451	4220	4919	4613	4259	4[illegible]5	3995	3255	5000	5030	4455	3995	3065	4630
Construction	Body Frame	Body Frame	Body Frame	Body Frame	Unit	Body Frame	Body Frame	Body Frame	Body Frame	Body Frame	Body Frame	Unit	Unit	Unit	Unit	Unit	Unit	Unit	Unit	Unit

* Baseline, 4-door vehicle

NOTE: Dimensions above are on 4-door vehicles.

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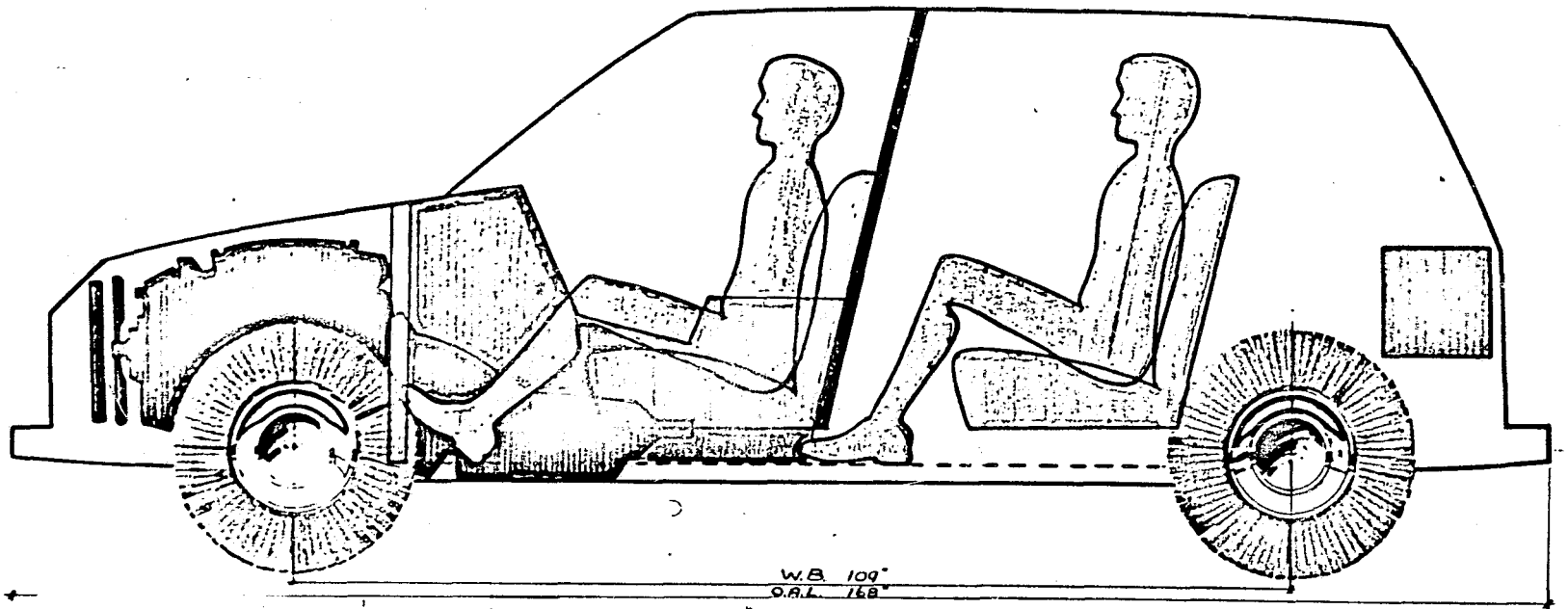
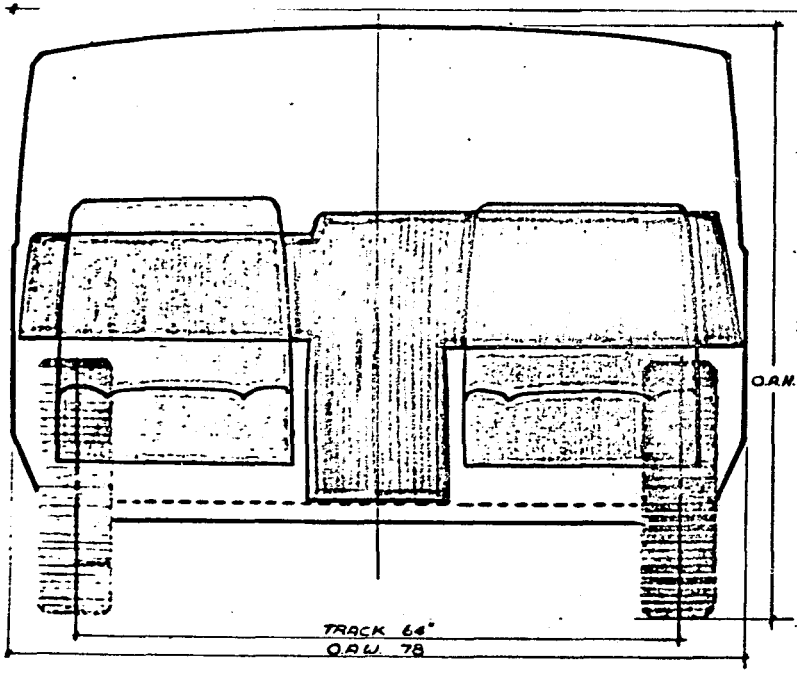
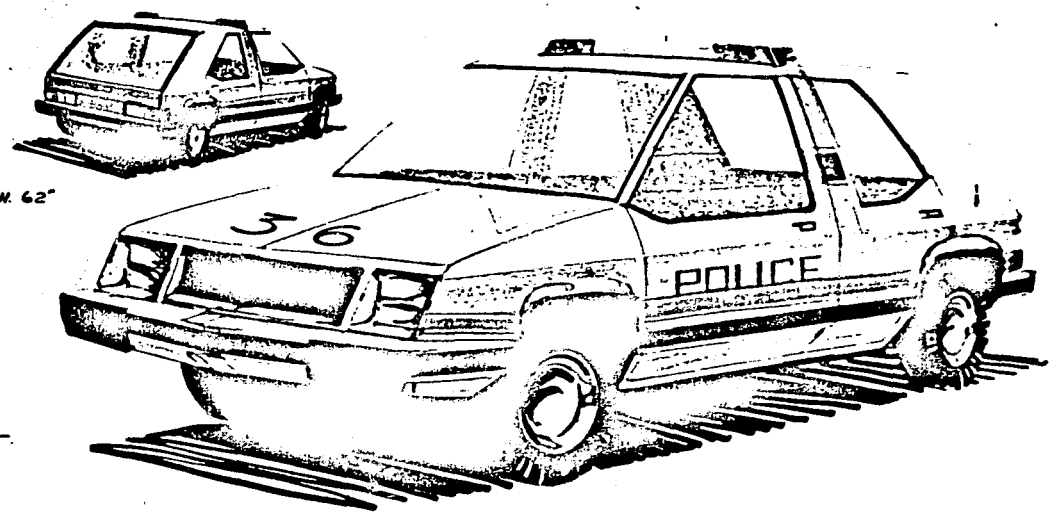
RATING ANALYSIS FOR OPTIMUM POLICE VEHICLE

CRITERIA AND MAXIMUM VALUE	OPERATING ECONOMY (10)	RIDE AND HANDLING (10)	INTERIOR PACKAGE (10)	BRAKING PERFORMANCE (10)	INITIAL PRICE (10)	VISIBILITY (10)	PURSUIT CAPABILITIES (8)	EXTERIOR SIZE (8)	SERVICEABILITY (8)	EXTERIOR PANEL REPLACEMENT (8)	LIFE EXPECTANCY (8)	EXTERIOR DURABILITY (6)	INTERIOR DURABILITY (6)	GROUND CLEARANCE (6)	UNIQUE IDENTITY (6)	TIRE LIFE (6)		ADAPTABILITY (50)	PRICE PROJECTION (20)	TOTALS	COMMENTS
VEHICLE																					
Chevette	10	6	4	6	10	6	4	10	9	6	4	4	4	4	8	10		0	5	110	Non-compatible
Pinto	9	7	6	5	10	6	5	8	6	6	4	5	4	4	4	9		20	15	143	Major Body Rework
Pacer	7	8	8	6	7	10	6	8	7	5	6	6	5	5	8	8		30	15	155	Good Seating Package Major Body Rework
Hornet	7	7	6	5	7	5	6	7	6	5	4	5	4	4	6	7		20	15	126	Poor Interior Package
Dart	7	7	6	8	7	6	9	7	6	5	6	5	5	5	4	7		30	15	145	Good Production Vehicle Poor Seating Package
Vega	9	7	5	6	9	6	5	8	6	5	4	4	4	4	4	9		20	15	130	Major Body Rework
Maverick	7	7	6	6	7	6	7	7	6	5	5	5	4	5	5	7		30	15	140	Poor Seating Package
Nova	6	8	8	8	6	7	9	6	6	5	6	6	5	5	4	6		40	15	156	Best Production Vehicle Poor Seating Package
Camaro	6	9	7	8	4	6	9	5	6	5	4	5	4	4	5	5		20	5	117	Major Body Rework
Volare	6	8	7	6	4	7	7	7	6	5	5	5	4	4	8	6		30	5	130	Not yet in Production
Granada	6	7	8	6	4	8	7	5	7	5	5	5	5	5	6	5		40	10	144	Costly Base Vehicle Could be Adapted
OPTIMUM BODY ON CURRENT CHASSIS																					
Bronco	5	8	8	5	6	8	6	6	8	10	8	10	10	10	10	5		10	10	145	Short Wheelbase - Soon out of Production
Jeep	5	8	8	5	6	8	7	7	8	10	8	10	10	10	10	5		30	10	165	Narrow Track and Currently Offered as Four Wheel Drive
Blazer	4	8	8	6	6	8	8	6	10	10	8	10	10	10	10	5		40	10	177	Wide Track Best of Utility Class







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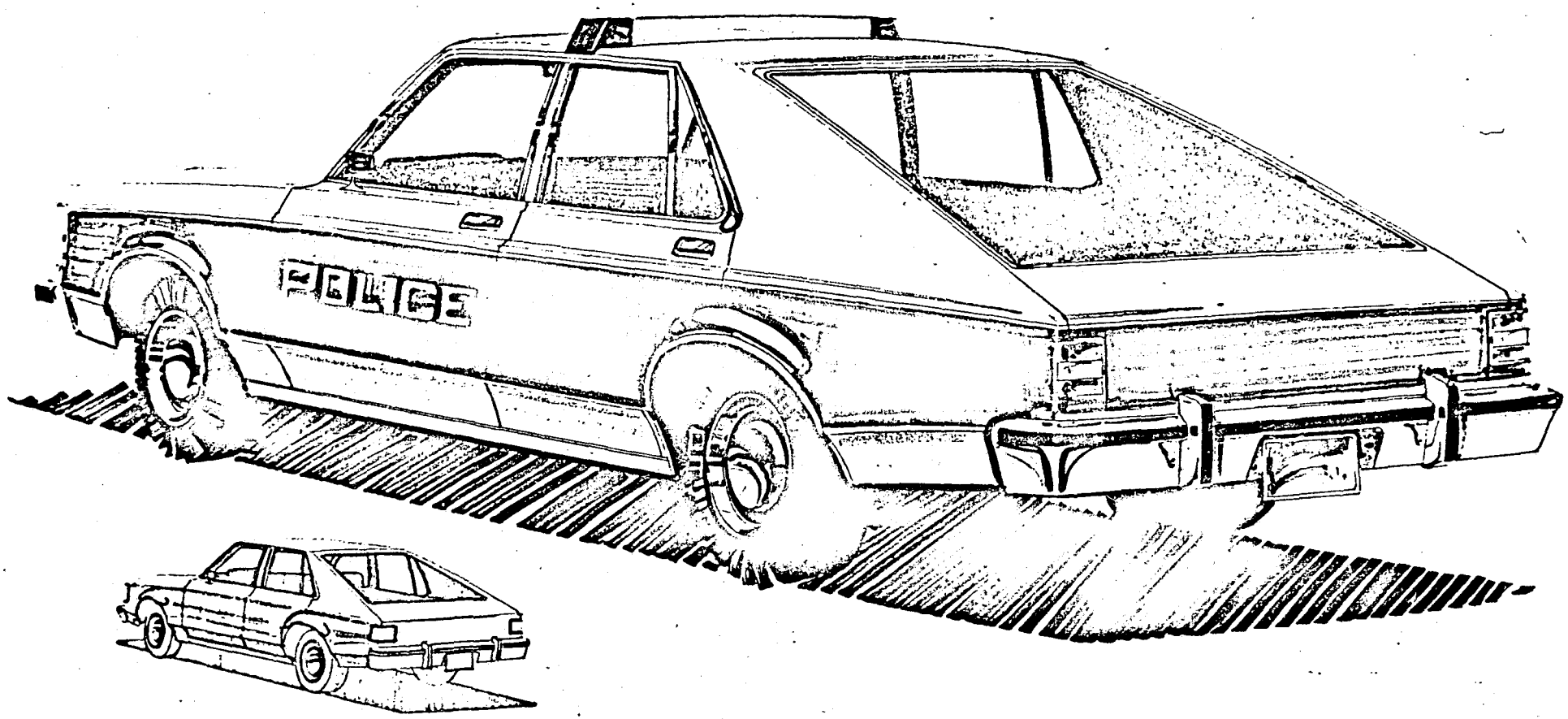
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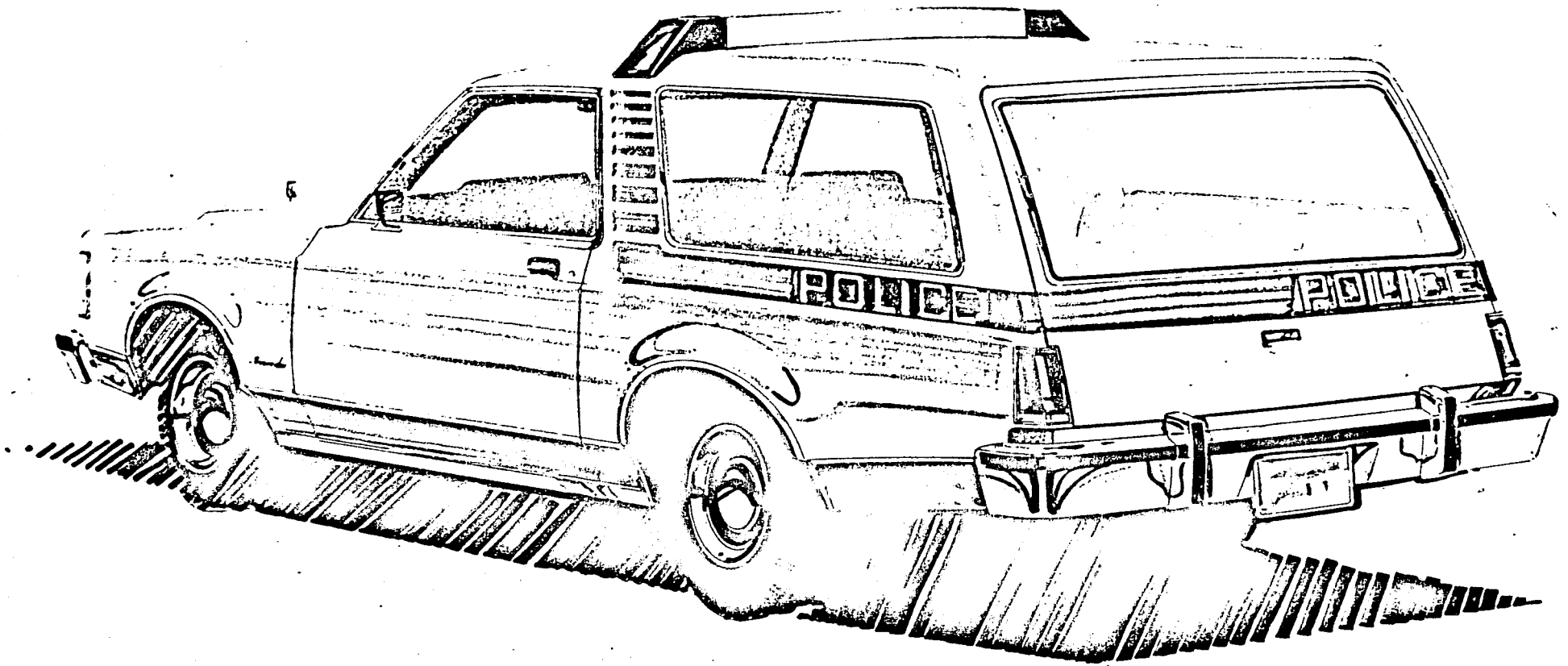
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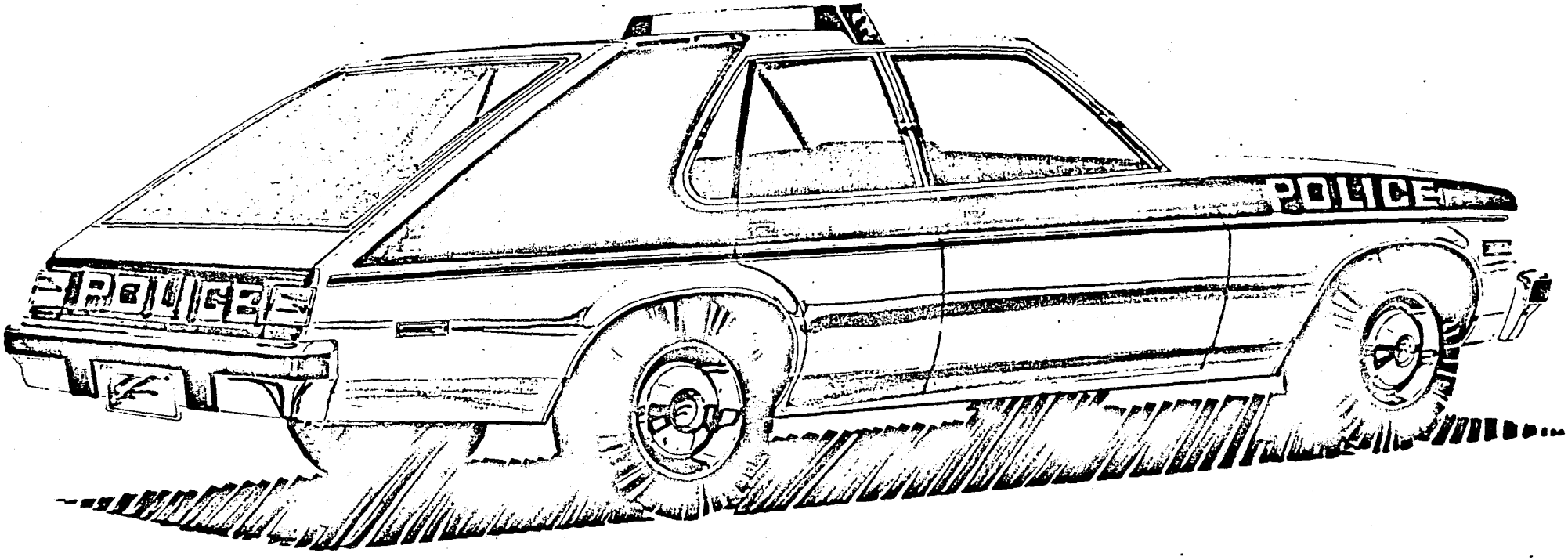
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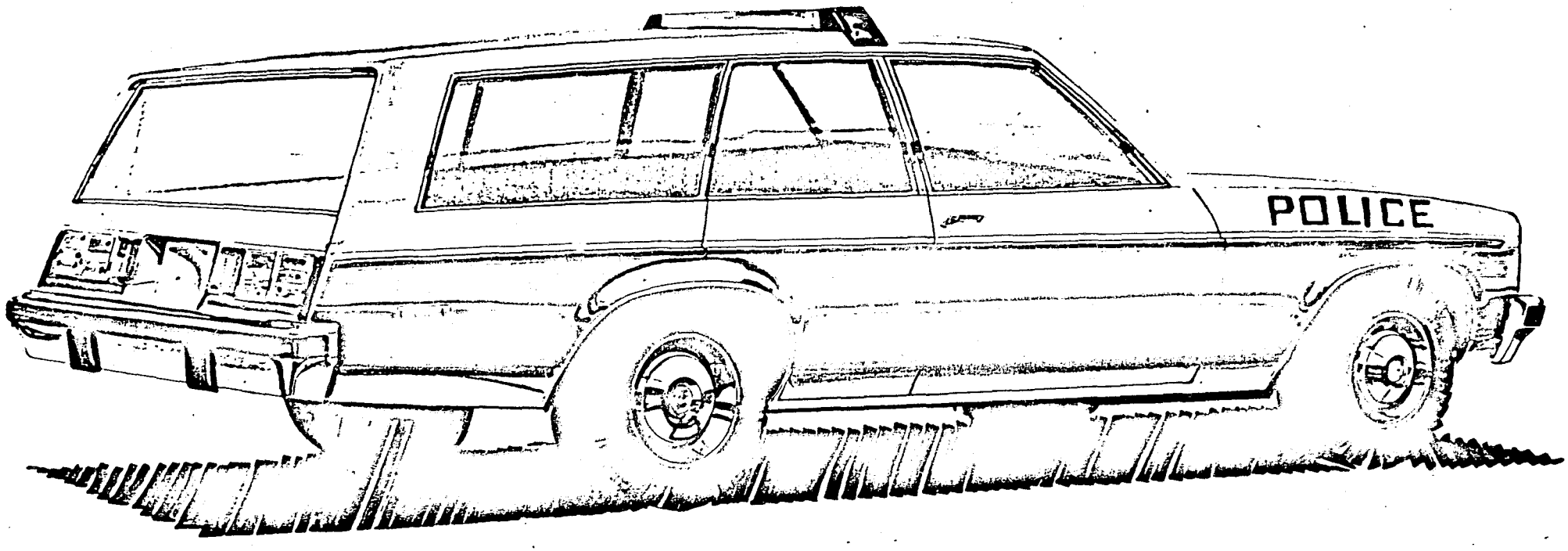
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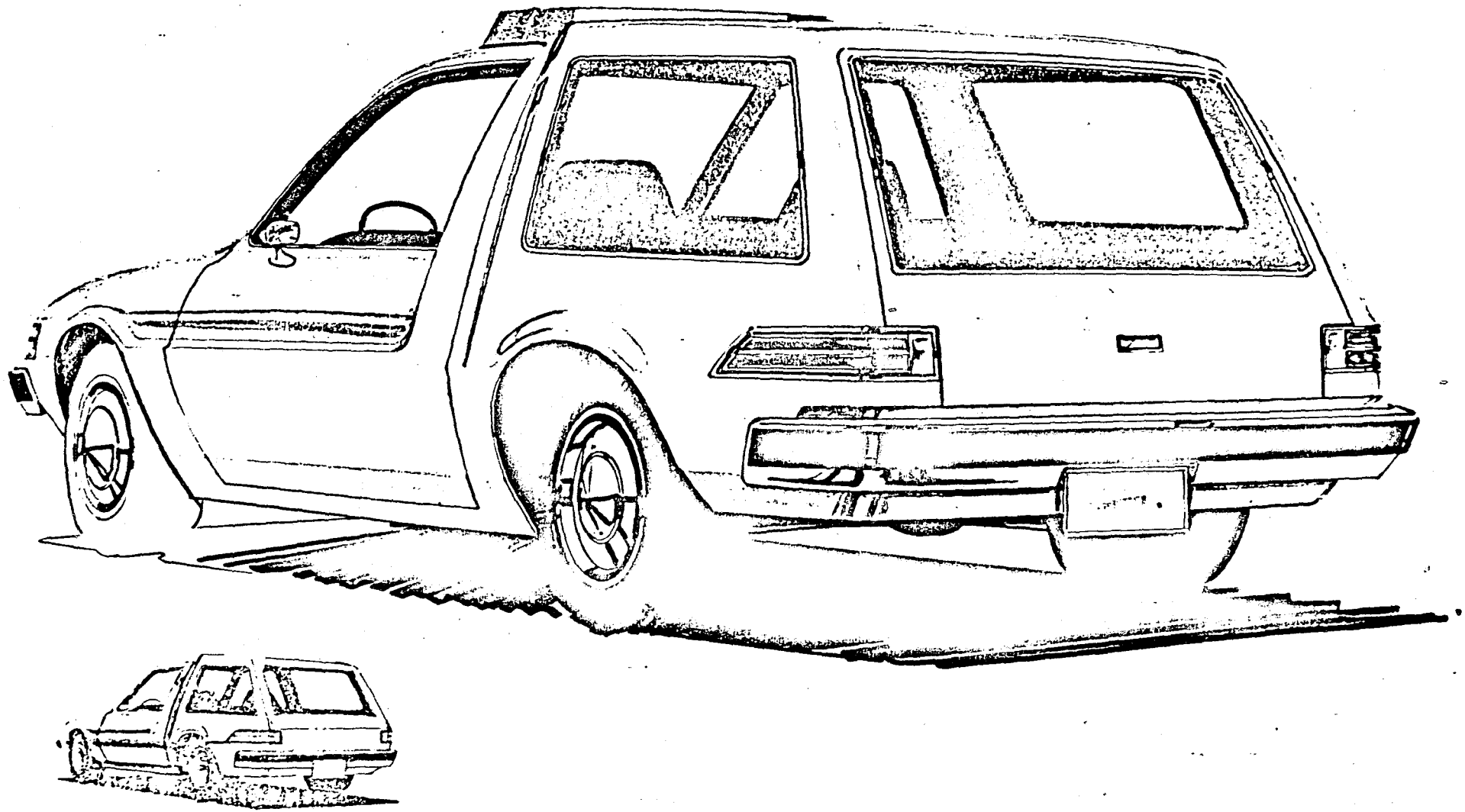

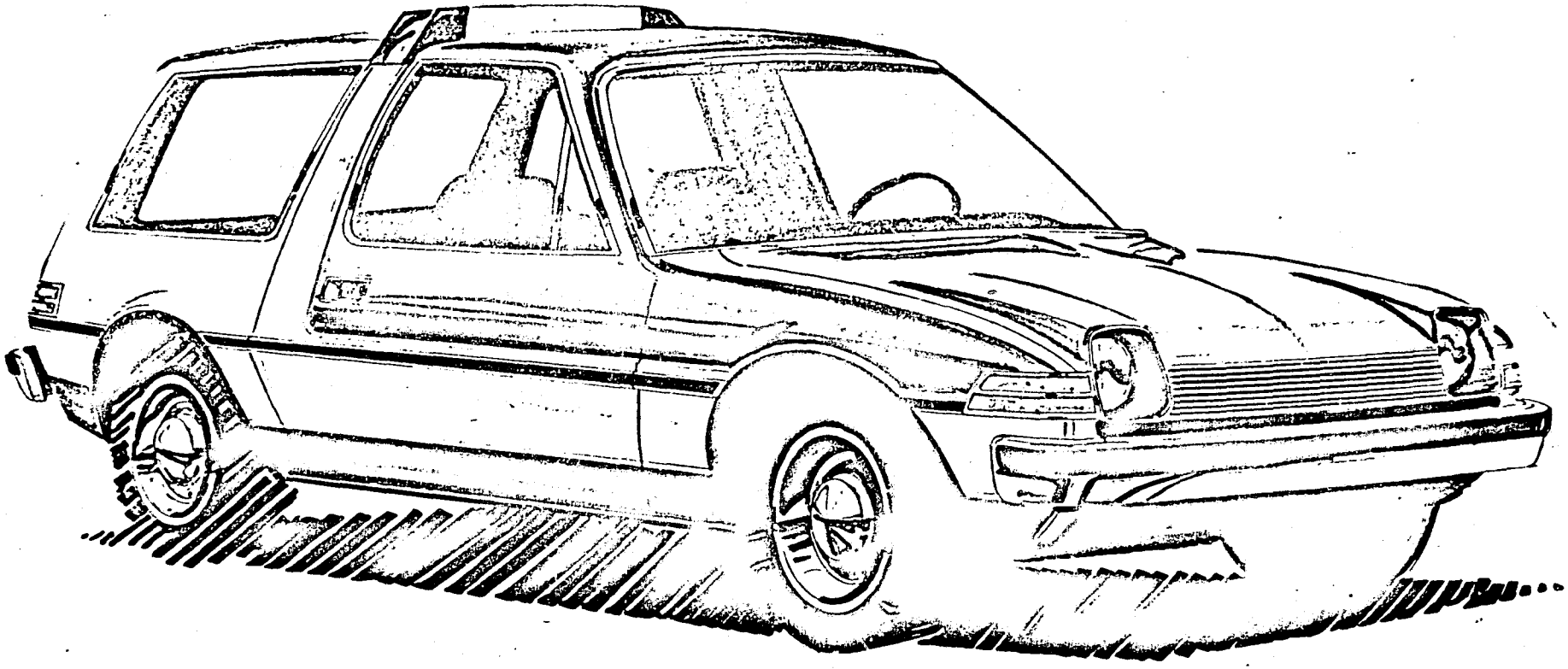

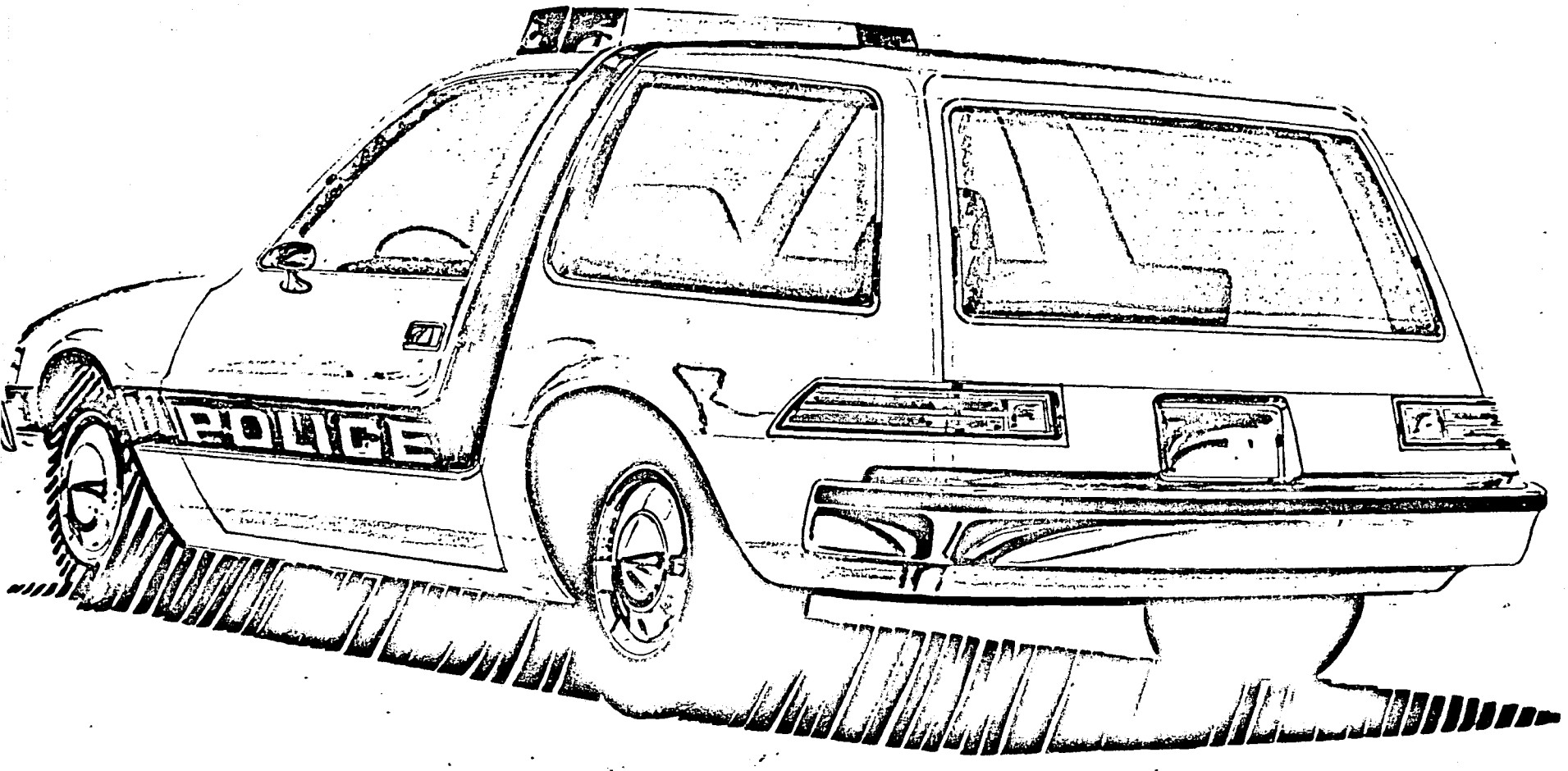
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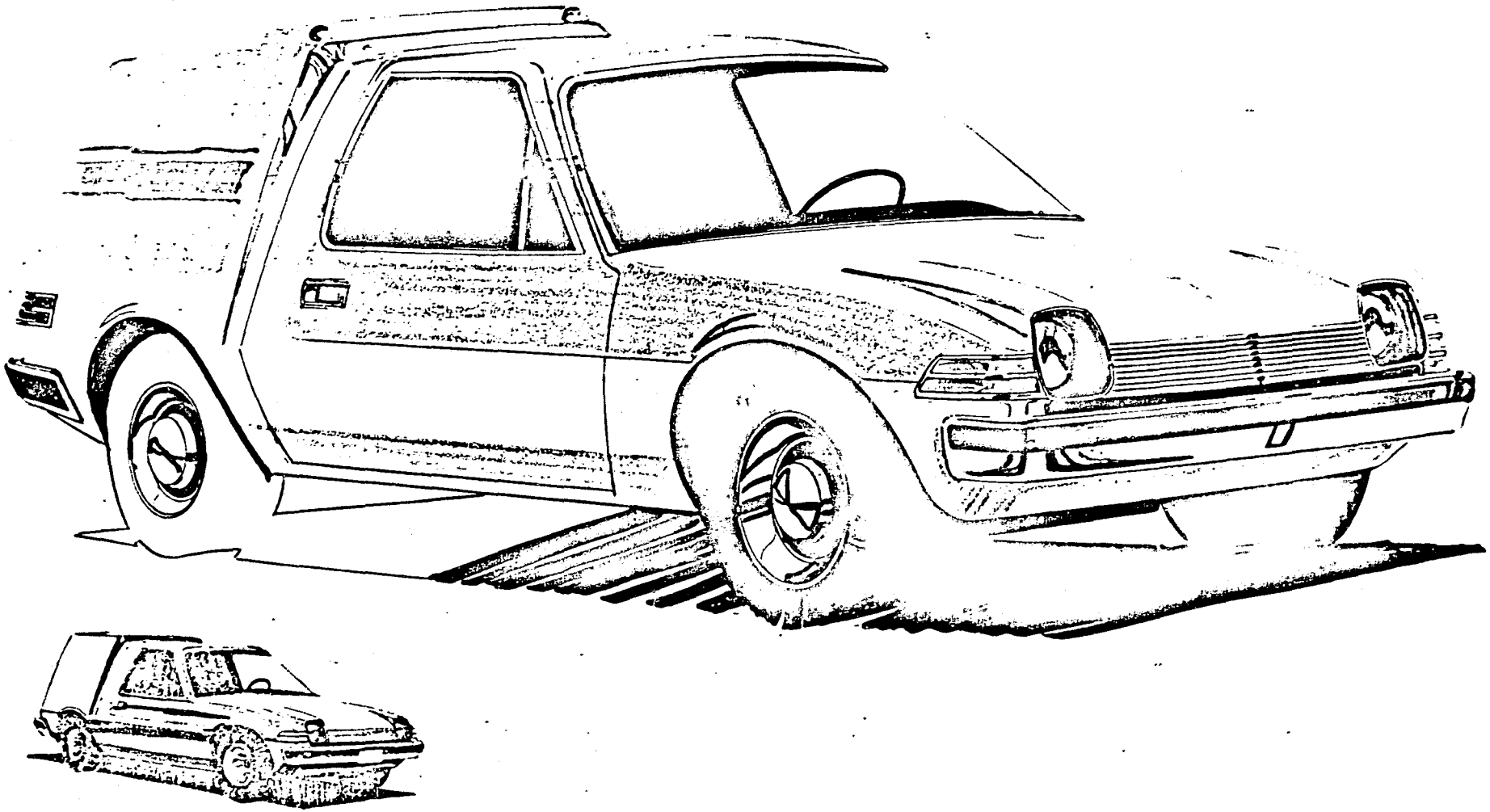

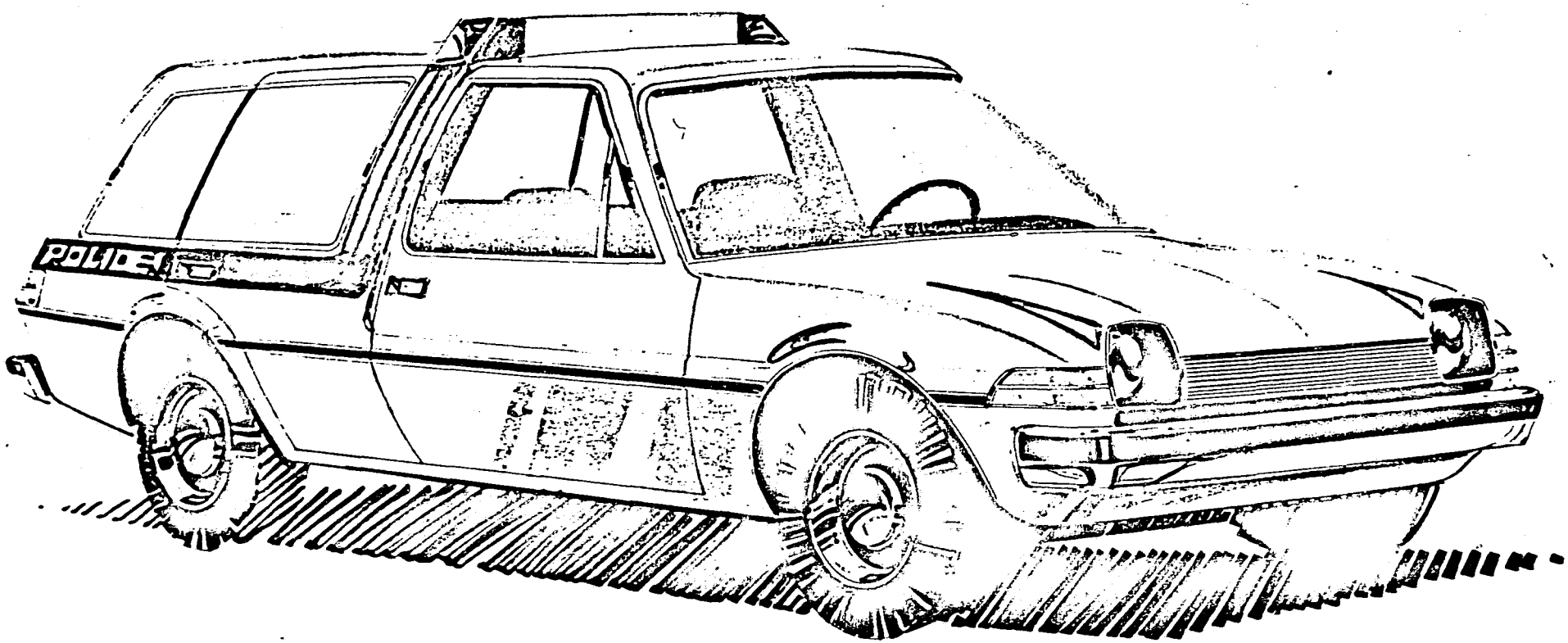
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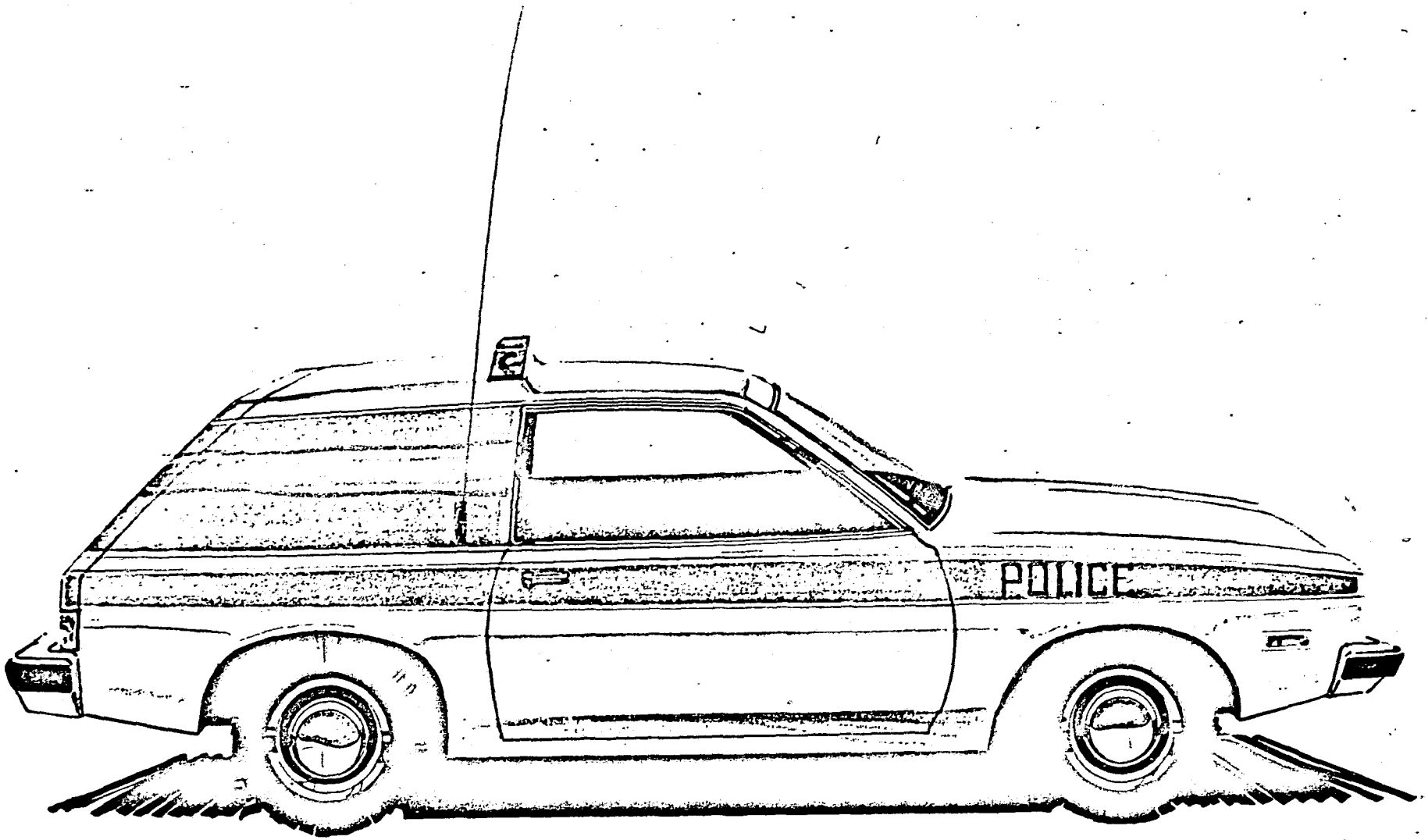
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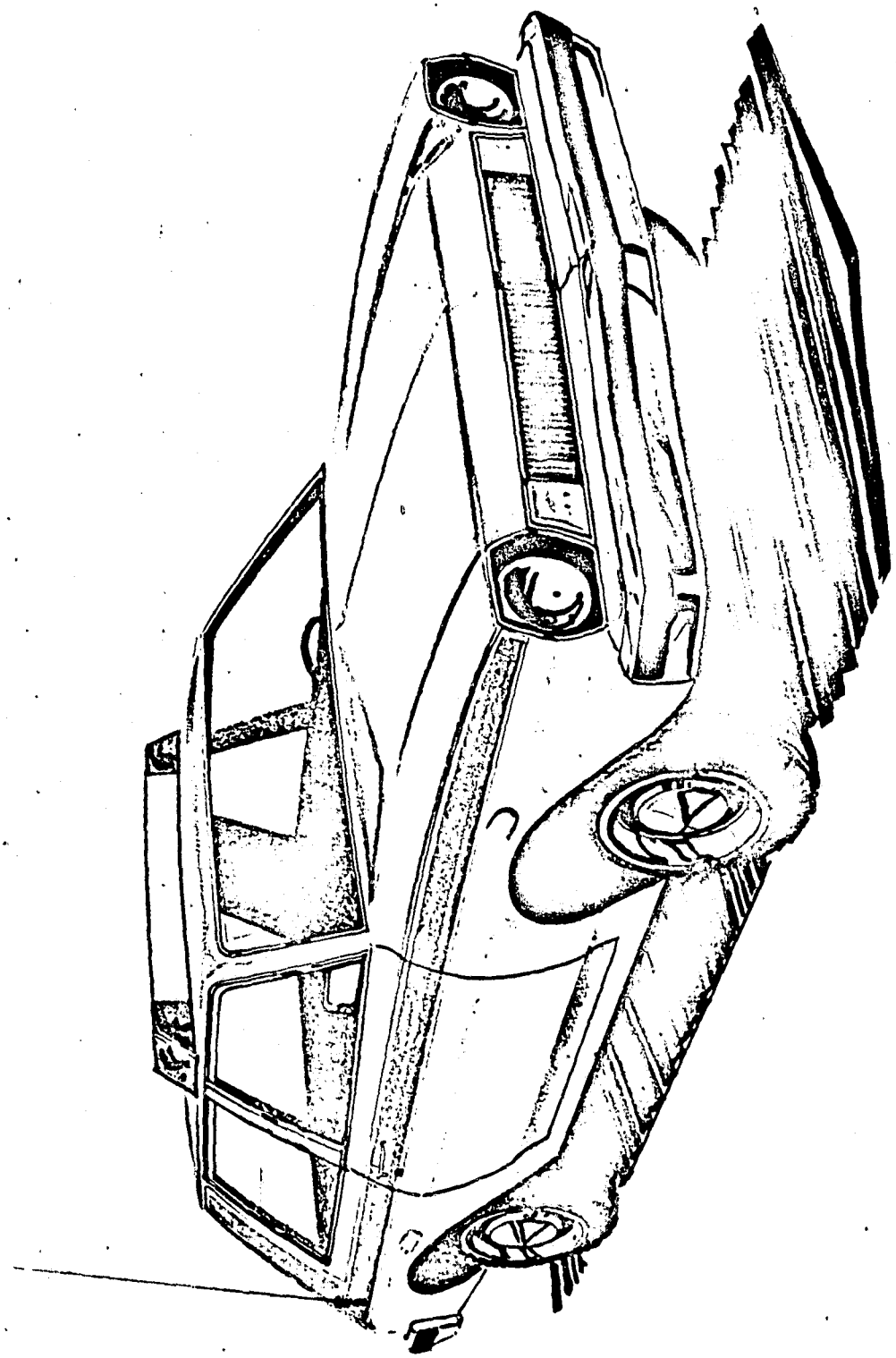

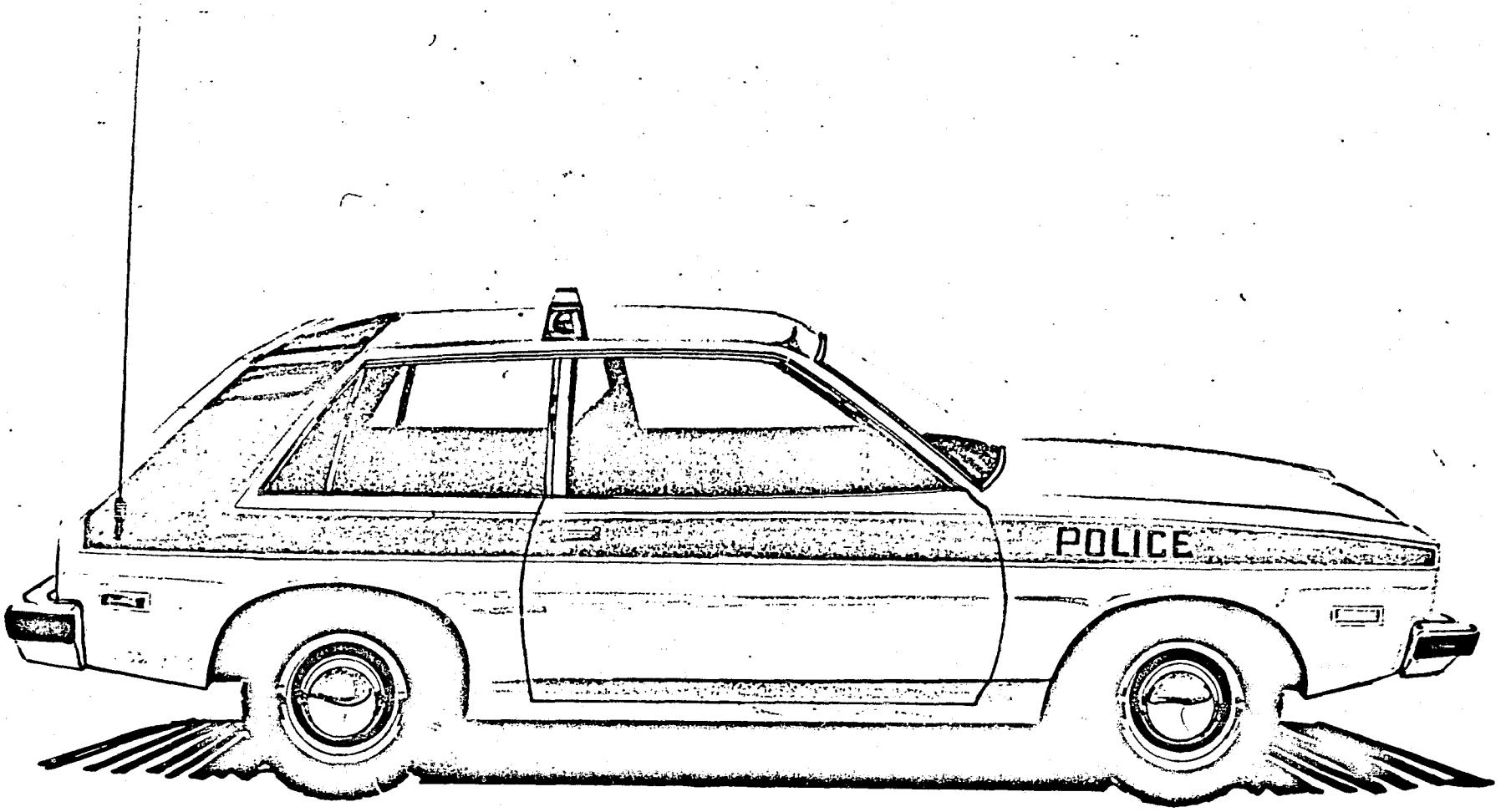
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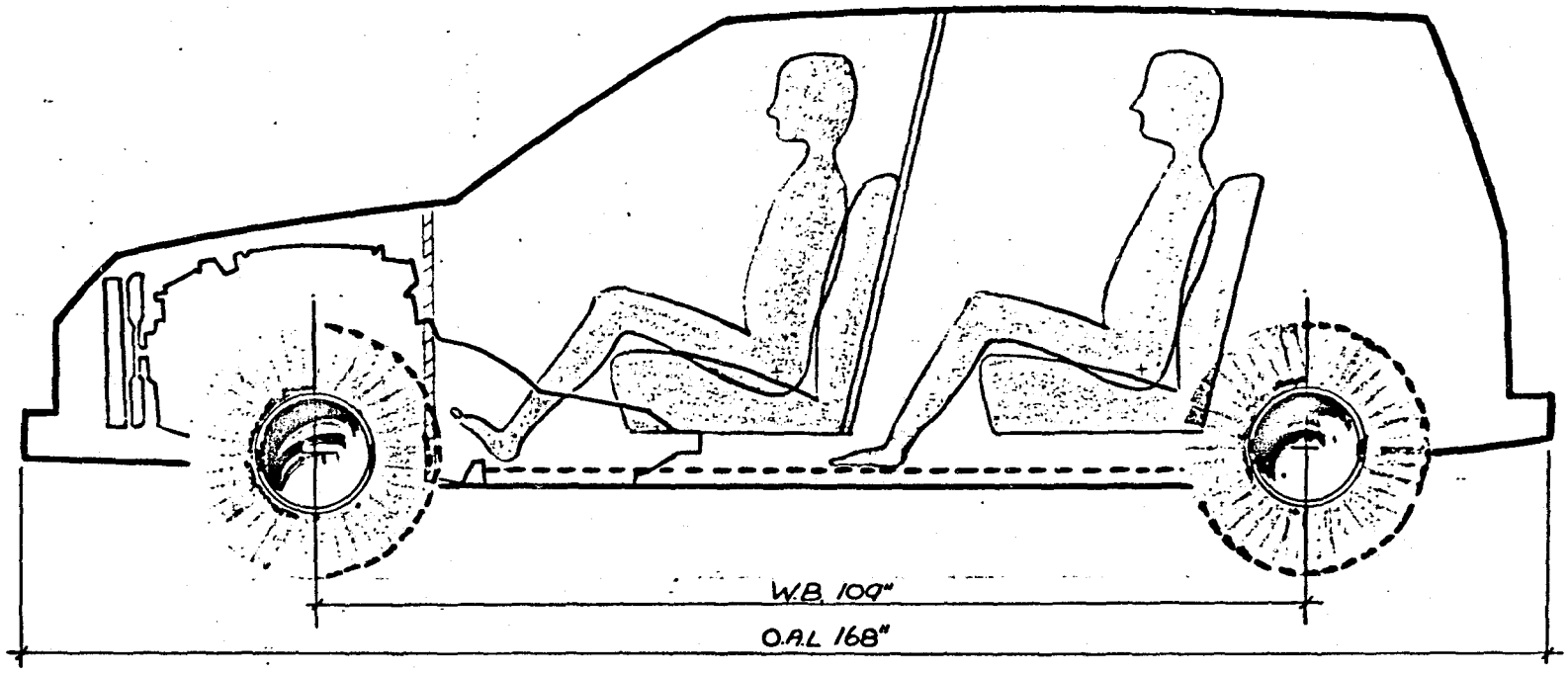

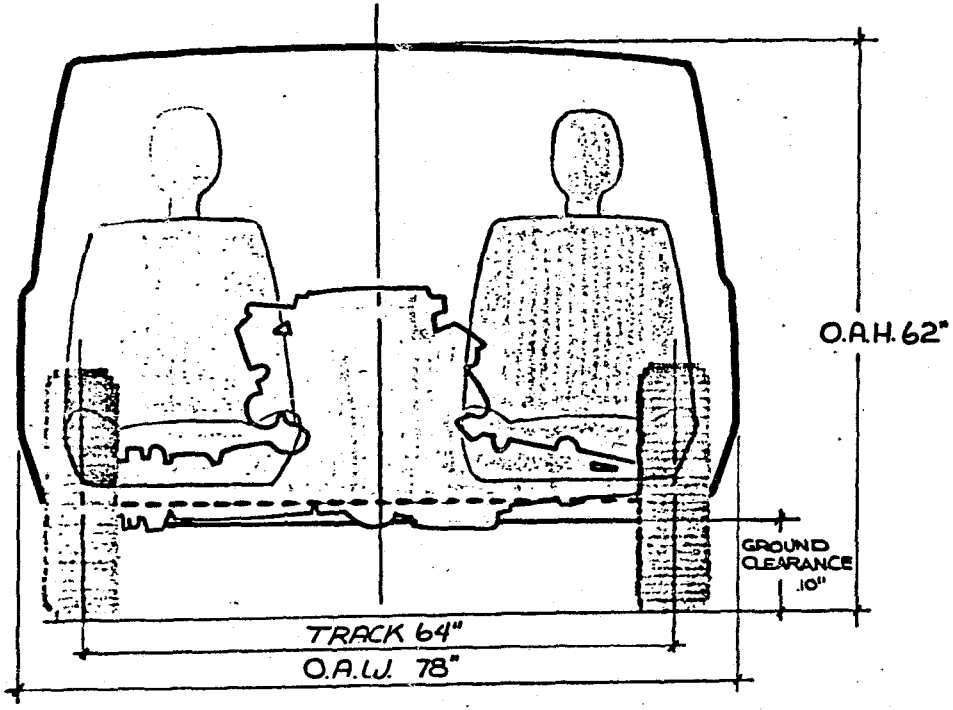

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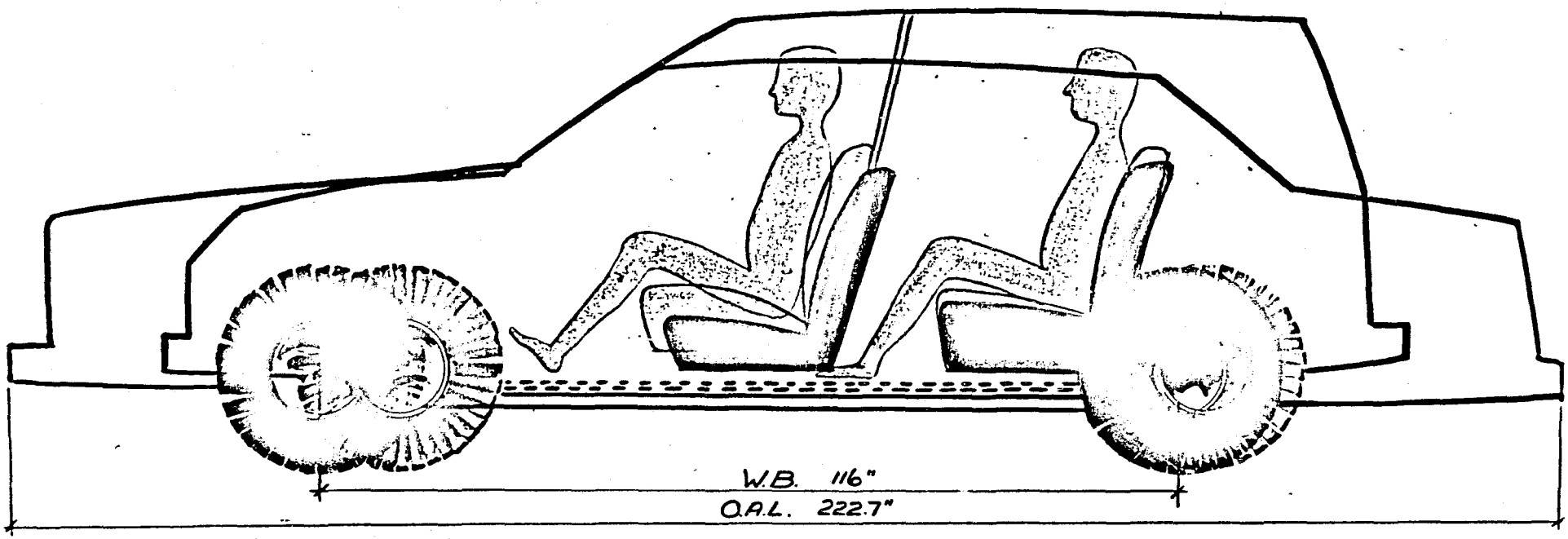

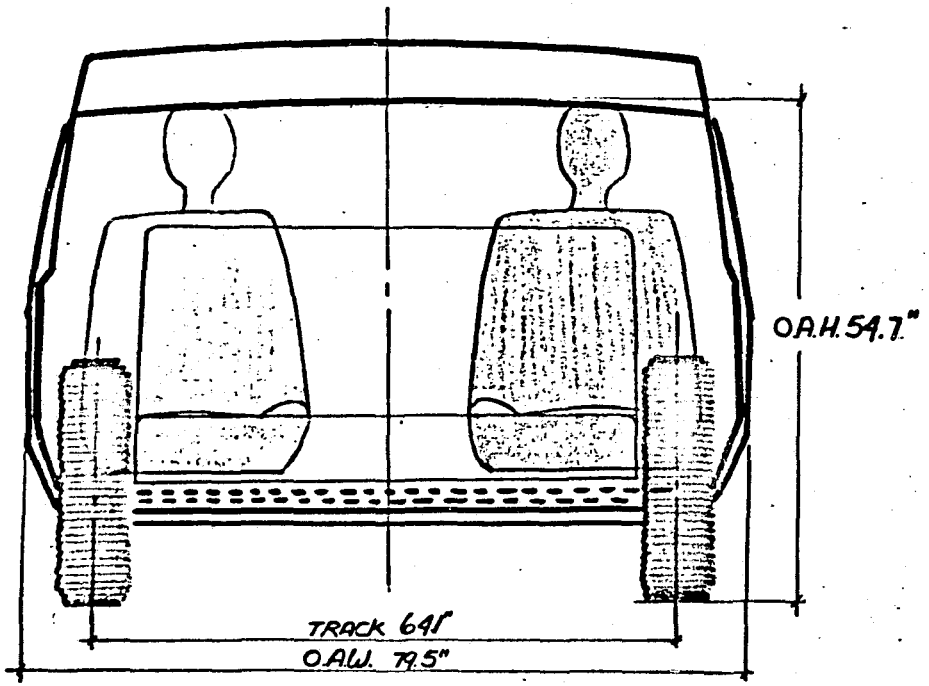

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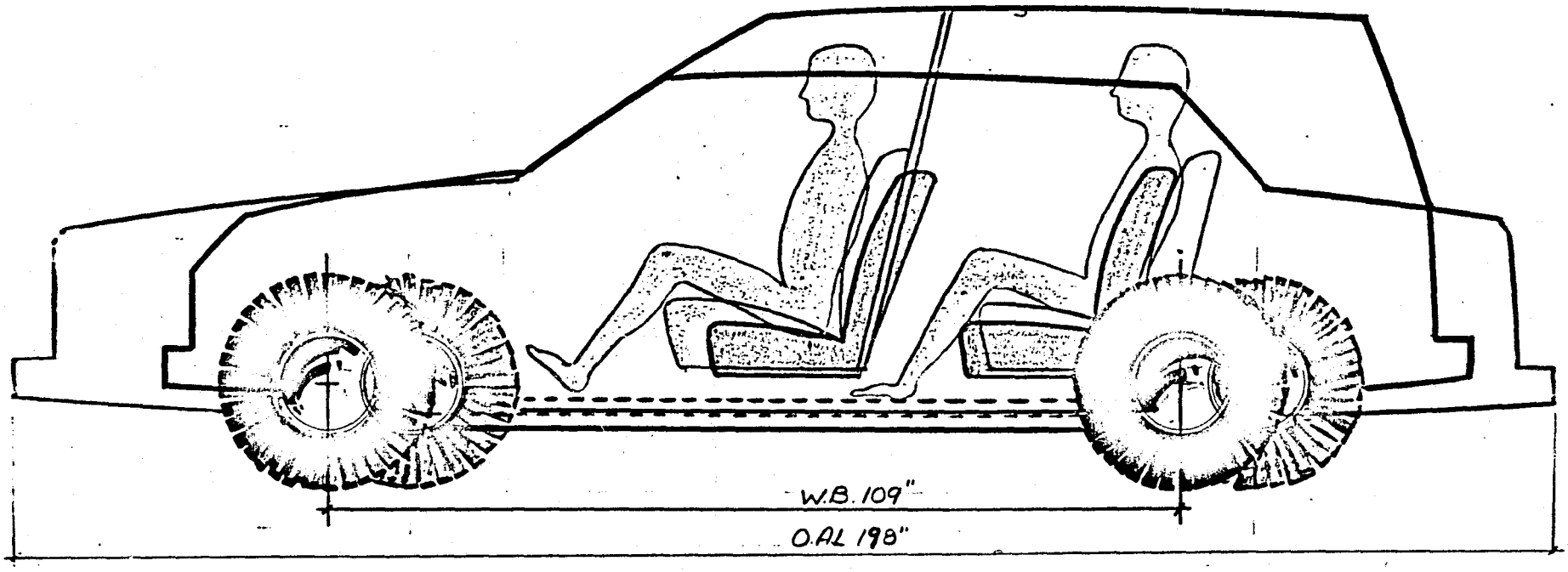

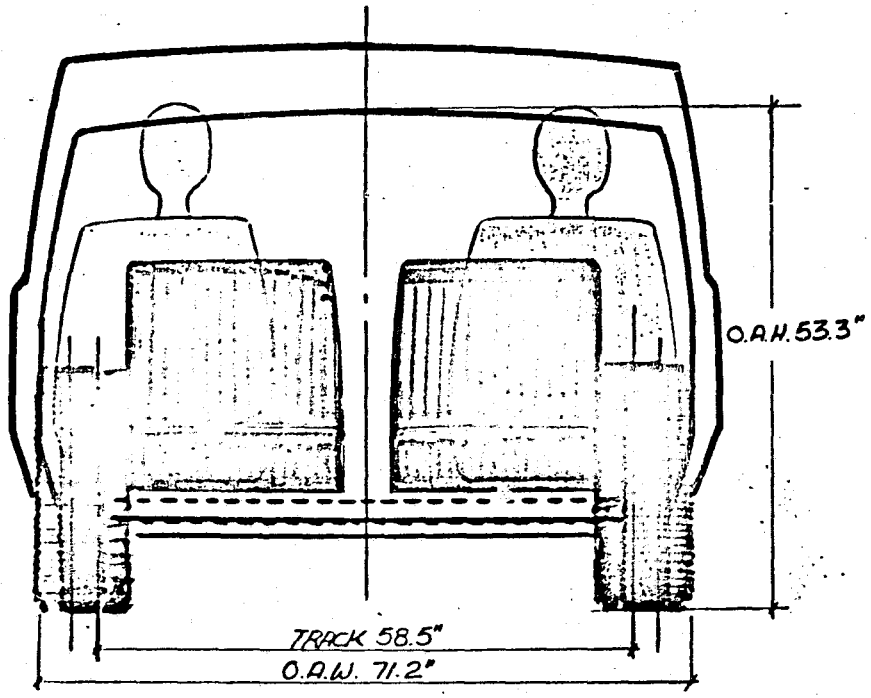

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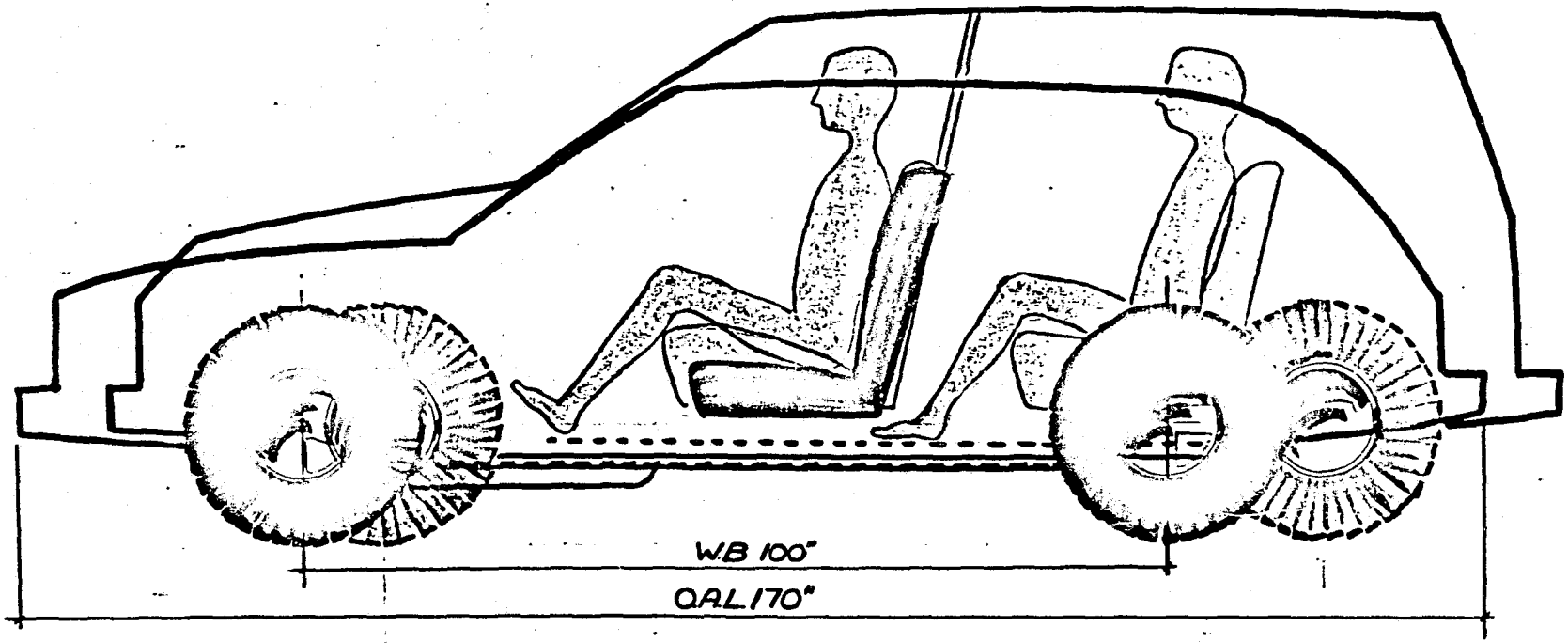

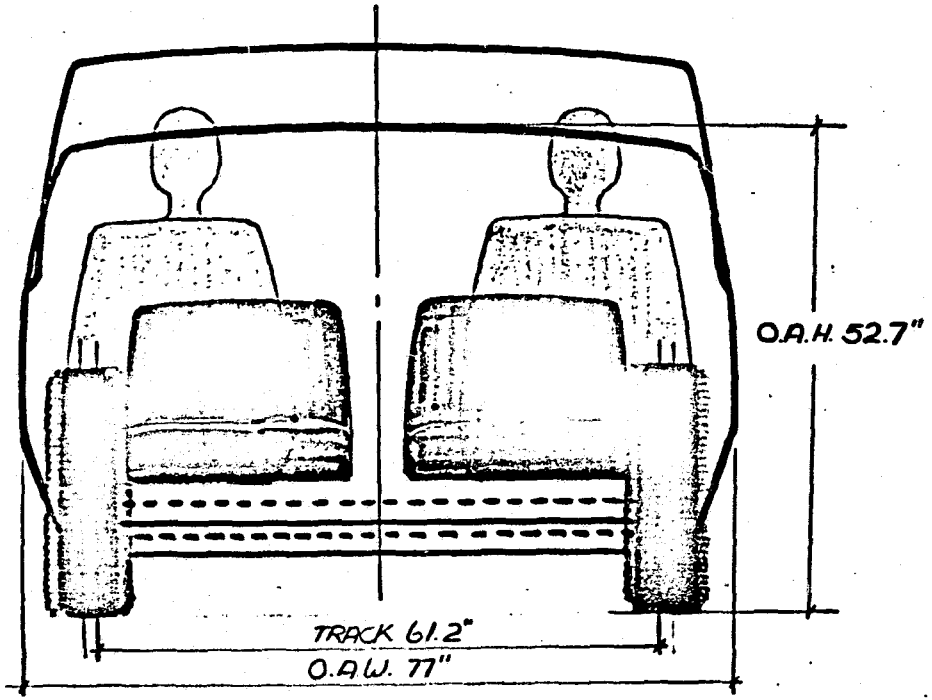

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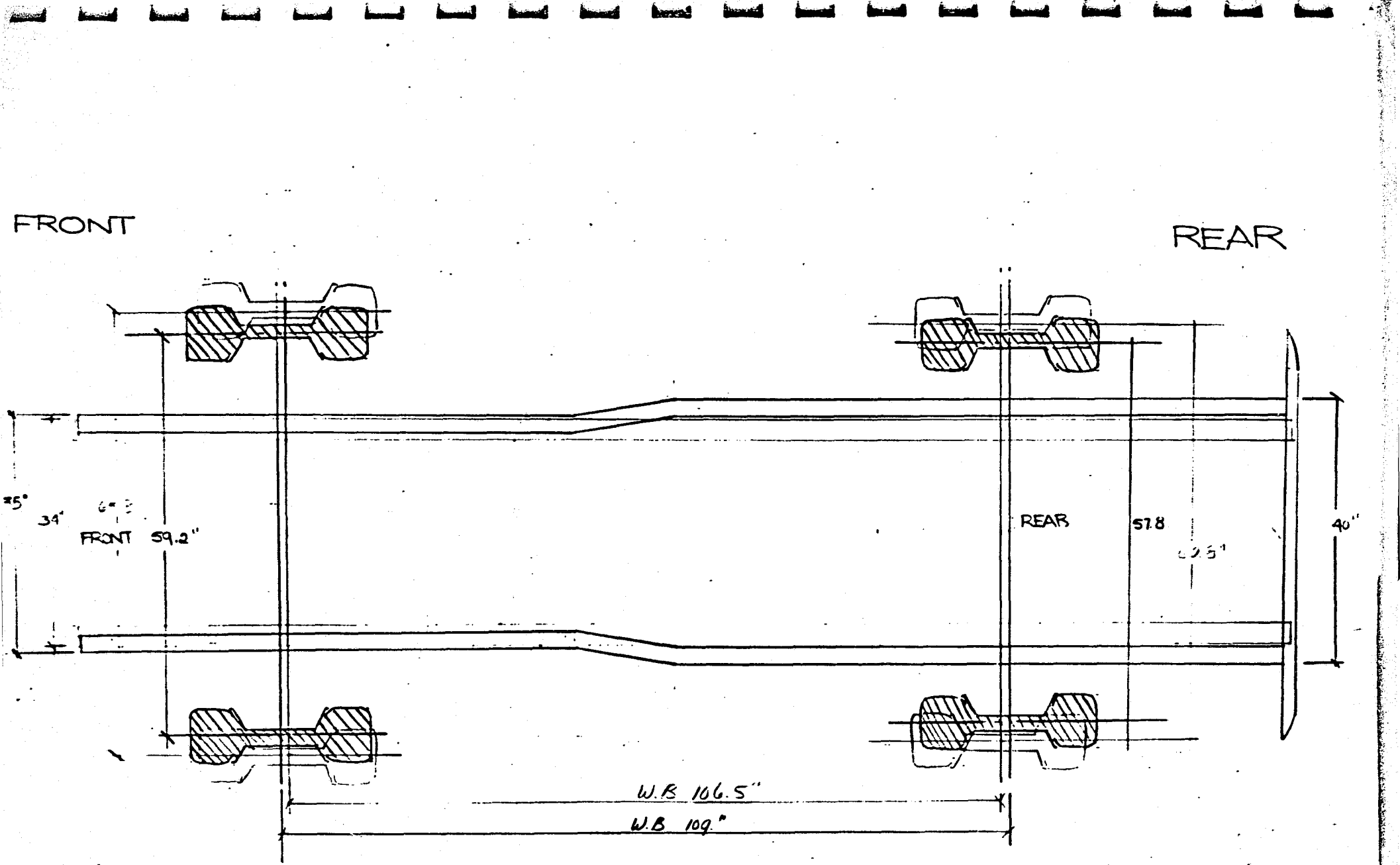

JEEP CHEROKEE
BLAZER

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7 addresses