SAFETY TEST VEHICLE CRASH TEST LETTER

VCC5380 30 MPH REAR BARRIER, ZJJ74, 5.2L MPI ITEM ZJ8602 1996 MVSS VALIDATION - 301. TEST DATE 02/15/95

TEST PURPOSE

PRIMARY, 1996 USA 301 VALIDATION.

OBSERVE FUEL SYSTEM INTEGRITY.

IMPACT TYPE

TARGET SPEED; 30.1 MPH

DAMAGE LOCATION; REAR

REAR TYPE IV BARRIER TYPE;

BARRIER SURFACE; PLYWOOD

VEHICLE

ZJBODY CLASS; CAR LINE: J

BODY: 74

5.2 LITRE ENGINE:

ELECTRONIC FUEL INJECTION. ENGINE NOTE;

TRANSMISSION; 4 SPEED AUTO 4X4

TRANS. NOTE;

1J4GZ7856TC522282 MOD. VIN AS TESTED; 1J4GZ7856PC522282 MOD. VIN AS BUILT;

1J4GZ7856PC522282

30.3 MPH BY ELECTRONIC TRAP TIMER TEST SPEED

4810 TOTAL, 2677 FRONT, 2133 REAR TEST WEIGHT (LBS)

AD-60 LEFT FRONT, HYB II, BALLAST. OCCUPANTS

RESTRAINT-BELTS ONLY.

RIGHT FRONT, HYB II, BALLAST.

RESTRAINT-BELTS ONLY.

1993 PRODUCTION BUILT CANADIAN ZJ RETOFITTED BUILD CONDITION

AS A 1996 DOMESTIC ZJ FOR REAR IMPACT.

5.2L ENGINE, 4 SPEED AUTO TRANS, 4X4

POWER STEERING, A/C, ABS BRAKES, ROOF RACK

P235/75R15 TIRES ON ALUMINUM WHEELS & FULL SPARE.

1996 CO-EXTRUDED FUEL TANK WITH REINFORCED

SENDING UNIT COVER.

1996 STEEL FUEL RAILS AND MATCHING LINE BUNDLE.

1996 REAR LIFT GATE WITH FIXED GLASS

1996 REINFORCED BUMPER BAR, FASCIA & BRACKETS

TARGET WEIGHT (LBS) 4163 TOTAL, 2311 FRONT, 1852 REAR REP MAX OPT. WT. NOT INCLUDING OCCUPANTS OR LUGGAGE BALLAST.



SAFETY TEST VEHICLE CRASH TEST LETTER

VC05380 30 MPH REAR BARRIER, ZJJ74, 5.2L MPI ITEM ZJ8602 1996 MVSS VALIDATION - 301. TEST DATE 02/15/95

FUEL AND BALLAST

21.8 GALLONS OF STODDARD SOLVENT.

300 LBS OF LUGGAGE BALLAST SECURED IN CARGO AREA.

200 LBS SECURED TO FRONT FOOTWELLS

THERE WAS EXCESSIVE FUEL LEAKAGE DURING IMPACT AND POST TEST REMARKS

THE SUBSEQUENT THIRTY MINUTES, RESULTING FROM PARTIAL SEPERATION OF THE VENT LINE FITTING FROM

THE TANK.

REPORT CODES

A = TRANSDUCER DATA
C = HIGH SPEED FILM
E = DUMMY KINEMATICS
D = ENGINEER'S REPORT
F = STEERING COLUMN
H = A = DOST

H = A - POSTG = UNDERBODY

J = ENGINE COMPARTMENT I = DYNAMIC CRUSH L = FORCE/CRUSH/ENERGY K = DOOR CRUSH

N = CATALOG EDP DATA M = SPECIAL

* = REPORT REQUESTOR

W.A. BREITMOSER 422-05-01 (AB) DISTRIBUTION

422-05-01 (AB) D.J. MCKENZIE

514-15-58 (AB) J.B. ESTES

DATE 02/16/95 TIME 08.38.02.

CHRYSLER MOTORS SAFETY TEST . VEHICLE CRASH TEST REQUEST

SUPPLEMENT NO. 03

ITEM ZJ8602 CHARGE NO. MASTERCARD ISSUE DATE 01/10/95 VC 5380 30 MPH REAR BARRIER, ZJJ74, 5.2L MPI 1996 MVSS VALIDATION - 301. SPEED 30.3 MPH SOURCE TRAP TEST DATE PRIMARY, 1996 USA 301 VALIDATION. TEST PURPOSE OBSERVE FUEL SYSTEM INTEGRITY. TARGET SPEED; 30.1 MPH IMPACT TYPE DAMAGE LOCATION; REAR BARRIER TYPE; REAR TYPE IV BARRIER SURFACE; PLYWOOD BODY CLASS; ZJ VEHICLE J CAR LINE; 74 BODY: ENGINE; 5.2 LITRE
ENGINE NOTE; ELECTRONIC FUEL INJECTION
TRANSMISSION; 4 SPEED AUTO 4×4 TRANS. NOTE; VIN AS TESTED; 1J4GZ7856TC522282 MOD. VIN AS BUILT; 1J4GZ7856PC522282 1J4GZ7856PC522282 -1993 PRODUCTION BUILT CANADIAN ZJ RETOFITTED BUILD CONDITION AS A 1996 DOMESTIC ZJ FOR REAR IMPACT. 5.2L ENGINE, 4 SPEED AUTO TRANS, 4X4 POWER STEERING, A/C, ABS BRAKES, ROOF RACK P235/75R15 TIRES ON ALUMINUM WHEELS & FULL SPARE. 1996 CO-EXTRUDED FUEL TANK WITH REINFORCED SENDING UNIT COVER. 1996 STEEL FUEL RAILS AND MATCHING LINE BUNDLE. 1996 REAR LIFT GATE WITH FIXED GLASS 1996 REINFORCED BUMPER BAR, FASCIA & BRACKETS TARGET WEIGHT (LBS) 4163 TOTAL, 2311 FRONT, 1852 REAR REP MAX OPT. WT. NOT INCLUDING OCCUPANTS OR LUGGAGE BALLAST. 4810 TOTAL, 0677 FRONT, Q133 REAR TEST WEIGHT (LBS) FUEL BALLAST 21.8 GALLONS OF STODDARD SOLVENT. GAGE BALLAST 300 LBS OF LUGGAGE BALLAST SECURED IN CARGO AREA. POST TEST REMARKS

CHRYSLER MOTORS SAFETY TEST VEHICLE CRASH TEST REQUEST

SUPPLEMENT NO. 03

a 10 Des remind to front fortwalls OTHER BALLAST LEFT FRONT, HYB II, BALLAST. OCCUPANTS RESTRAINT-BELTS ONLY. RIGHT FRONT, HYB II, BALLAST. RESTRAINT-BELTS ONLY. PLACE SEAT IN MID TRACK POSITION. MECHANICAL REQ FUEL PUMP TO BE RUNNING DURING TEST. RUN FUEL PUMP PRE TEST TO CHECK CONNECTIONS. PRESSURE CHECK PRE AND POST TEST. STATIC ROLL POST TEST. PAINT REAR DIFFERENTIAL AND GAS TANK FOR VIEWING. INSTRUMENTATION REQ SEE 3RD SHEET NO. 107 FOR ACCELEROMETER REQUIRE-MENTS AND LOCATIONS (THE 4 SILL ACCELEROMETERS ARE TO BE BI-AXIAL). OGRAPHIC REC 1-LEFT SIDE OVERALL CAMERA TO VIEW ENTIRE VEHICLE. 1-RIGHT SIDE OVERALL CAMERA TO VIEW ENTIRE VEHICLE 1-CATWALK CAMERA TO VIEW ENTIRE VEHICLE. 1-PIT CAMERA TO VIEW UNDERBODY, AXLE TO BUMPER. FILM ANALYSIS VEHICLE VELOCITY, ONLY IF REQUESTED. DYNAMIC CRUSH. MAKE 1 FILM COPY AND 1 VHS COPY, SEND TO: REMARKS J.B. ESTES 514-15-58 PLEASE RETURN VEHICLE POST TEST TO JTE. 301 FUEL SYSTEMS REPORT REQUIRED. T. E. REPORT A = TRANSDUCER DATA
C = HIGH SPEED FILM
E = DUMMY KINEMATICS
D = ENGINEER'S REPORT
F = STEERING COLUMN REPORT CODES * = REPORT REQUESTOR W.A. BREITMOSER · 422-05-01 (AB)
D.J. MCKENZIE 422-05-01 (AB)
J.B. ESTES 514-15-58 (AB) DISTRIBUTION 422-05-01 (AB) 514-15-58 (AB) J.B. ESTES

CHRYSLER MOTORS ' SAFETY TEST. VEHICLE CRASH TEST REQUEST

SUPPLEMENT NO. 03

BUILD CONDITION

ADD 1996 STEEL FUEL RAILS AND MATCHING LINE BUNDLE.

TARGET WEIGHT (LBS)

MODIFY

TC READ 4163 TOTAL, 2311 FRONT, 1852 REAR REP MAX OPT. WT.

OCCUPANTS

MODIFY RESTRAINT-RESTRAINT-UNIBELT ONLY.

TO READ RESTRAINT-BELTS ONLY.

MODIFY RESTRAINT-RESTRAINT-UNIBELT ONLY.

TO READ RESTRAINT-BELTS ONLY.

TARGET WEIGHT (LBS)

NOT INCLUDING OCCUPANTS OR LUGGAGE BALLAST. ADD

INSTRUMENTATION REO

MODIFY

TO READ SEE 3RD SHEET NO. 107 FOR ACCELEROMETER REQUIRE-MENTS AND LOCATIONS (THE 4 SILL ACCELEROMETERS ADD

ARE TO BE BI-AXIAL). ADD

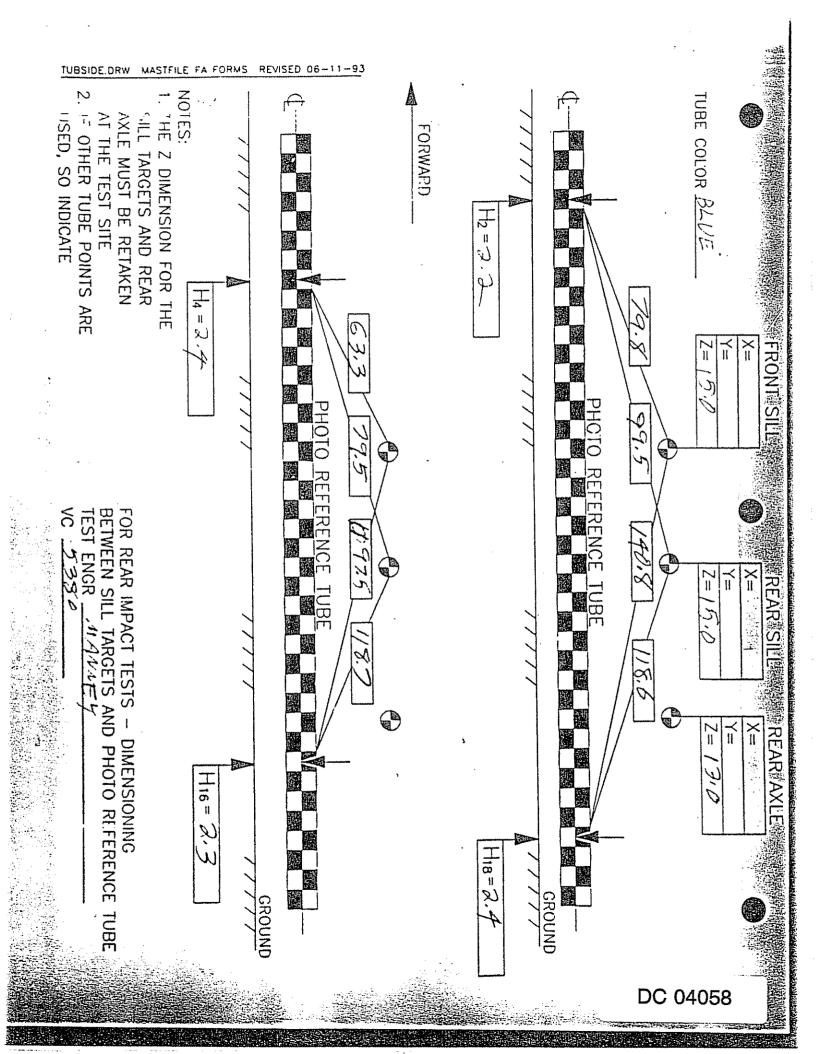
X, Y, Z DIMENSIONS

TEST NUMBER VC5380

LOC.	Х	Y	Z		LOC.	X	Y	<u>Z</u>
LFS	59.5	-318	14.3	_				
LMS	23%	-3.17	14.9				,	
LRA	135,6	- 1,4	125	_				

TRAMMEL MEASUREMENTS:

LEFT SILL: PRE 27.13



SHEET 106, ITEM 238662 VC 5380

THIRD

JEEP ZJ 4 * 4

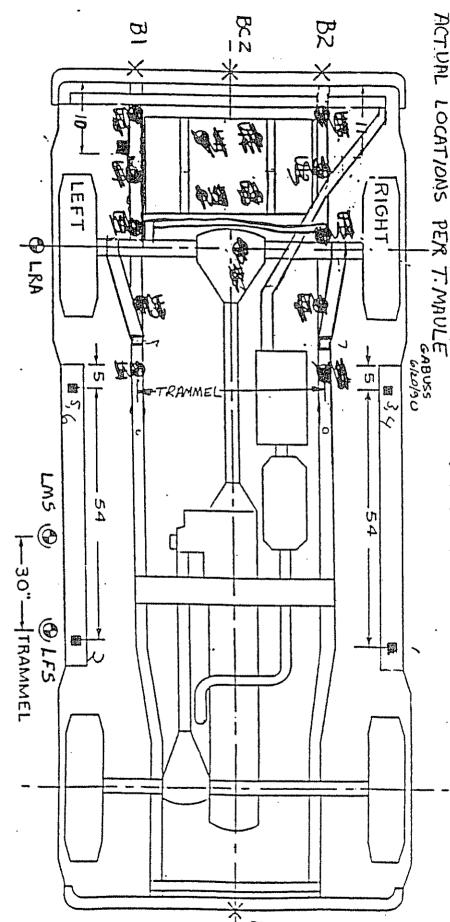
TARGET AND ACCELEROMETER LOCATIONS
FOR REAR IMPACTS

ZENONS READ ON ROOF

ELEC FUEL PUMP TO BE

RUNNING DURING IMPACT

LOCATIONS ARE XJ (REF. SHEET 102)



TARGETS

LEGEND

ACCELEROM-

ETERS

SIDE VIEW X PUNCH POINT

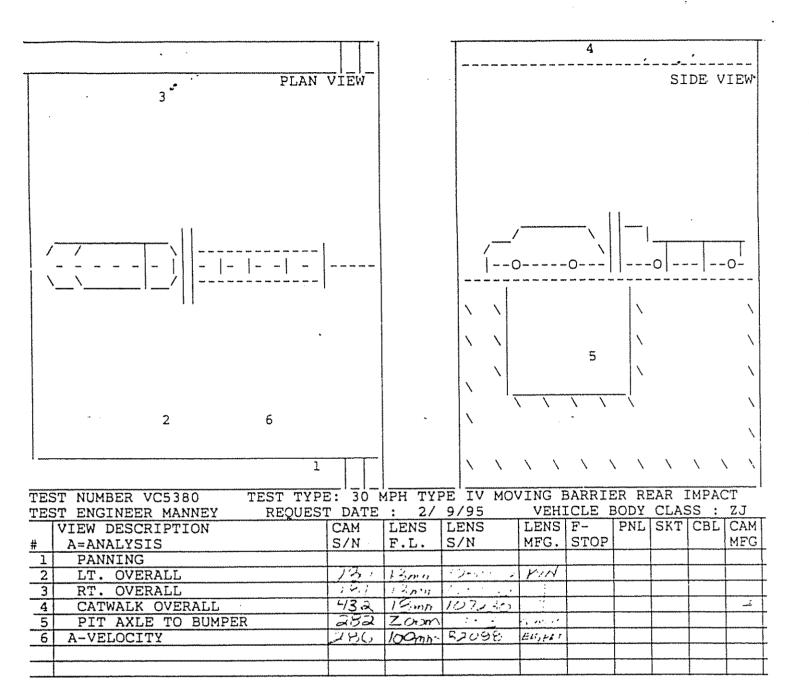
> Z O T Ш ()

PRE AND POST DIMENSIONS ARE REQUIRED PER BREITMOSER LETTER OF 01-04-68

2. NUMBERS ASSIGNED TO EACH TARGET ARE PERMANER 3. TARGETS MAY BE DELETED BY NUMBER ---

☐ SINGLE AXIS, X ☐ BIAXIAL, X ¢ Z 4. ADDITIONAL TARGETS MAY BE REQUESTED BY TR.
5. LOCATIONS SHOWN ARE APPROX TO + ~ - ... LOCATIONS SHOWN ARE

DC 04059



FUEL SYSTEM AND STATIC ROLLOVER SUMMARY

יייניכיי אוואאו	ER VC5380 I	TEM NUMBE	R ZJ8602	TEST ENGIN	IEER MANNEY	?	
TEST NOTES	4GZ7856TC5222	ንደን ሞድፍጥ	DATE 7/15	AT. ROLL DA	TENG /		
A.T.M. 10.	; 30 MPH T	OF IT	MOVING	BARR/ER	REAR		
						אכ	
FUEL; TYP	E AND QUANITY	767 S	G. STODDA	4910	<u> 21.0</u> GRUDG	511.5	
TEST SPEE	D 30.3 MPI	H, TE	ST WEIGHT	POUI	NDS.	r	
POST TEST	FUEL SYSTEM	OBSERVATI	ONS THE	re was e	X (5 5 1 V E	THE DEL	
LE AHAO	CE DURIN	G IMPA	CT AND	THE SUBS	E: QUENT	/ HINT;	_
MINUTES	RESULTIN	G FRO	MUSEREN	RATION OF	= JHE V	ENI	
LINCF	ITTING F.	ROM TH	IF TANK				
POST IMP	PACT LEAKAGE(OZ); AT II	MPACT	-3 EV/C	= = 1VE		
.	PACT LEAKAGE(1ST 5 NEXT 25	MIN.				
POST TES	ST PRESSURE C	HECK M	Α				_
דו פריים זים	C FUEL PUMP R	11/1.	4				
	ROLL LEAKAGE			SIDE DOWN	FIRST		
SIAIIC				- NS DURING ST			_
ROLL		OED DEAKA	OS DOCLES			TOTAL	
TIME 0-90	1ST 5 MIN	-					* *
	POST 5 MIN						**
90-180	1ST 5 MIN						*
	POST 5 MIN		110	ROIL			**
190 270	1ST 5 MIN		700	1/0/0			*
180-270	POST 5 MIN						**
							 ★
270-360	1ST 5 MIN						+**
	POST 5 MIN]
* OUNCES	IN 5 MINUTE	S, ** OUN	CES PER MIN	NUTE			

LAST FORM MODIFICATION 5/27/93 - GAB

INTER COMPANY CORRESPONDENCE:

FILE DCRDATA

DATE 03/01/95

TO

DISTRIBUTION

FROM

B. D. CARLISLE

DEPARTMENT 5320

PLANT/OFFICE CTC .

CIMS NUMBER

481-02-18

SUBJECT:

REAR DYNAMIC CRUSH ANALYSIS

VC05380 30 MPH REAR BARRIER, ZJJ74, 5.2L MPI ITEM ZJ8602

1996 MVSS VALIDATION - 301.

TEST DATE 02/15/95

TEST PURPOSE

PRIMARY, 1996 USA 301 VALIDATION.

OBSERVE FUEL SYSTEM INTEGRITY.

IMPACT TYPE

TARGET SPEED: 30.1 MPH DAMAGE LOCATION: REAR BARRIER TYPE: REAR TYPE BARRIER SURFACE: PLY-WOOD 30.1 MPH

REAR TYPE IV

VEHICLE

BODY CLASS:

ZJ

CAR LINE: BODY:

74

5.2 LITRE

ENGINE: ENGINE NOTE: TRANSHISSION:

ELECTRONIC FUEL INJECTION

4 SPEED BUTG 4×4

TRANS. NOTE; VIN AS TESTED:

LJ4GZ7856TC522282

MOD.

VIN AS BUILT: 1J4GZ7856PC522282 MOD.

1J4GZ7856PC522282

TEST SPEED

30.3 MPH BY ELECTRONIC TRAP TIMER

TEST WEIGHT (LBS)

4810 TOTAL, 2677 FRONT, 2133 REAR

OCCUPANTS

LEFT FRONT, HYB II, BALLAST, RESTRAINT-BELTS ONLY.

AD-60

RIGHT FRONT, HYB II, BALLAST.

AD-65

RESTRAINT-BELTS ONLY.

BUILO CONDITION

1993 PRODUCTION BUILT CANADIAN ZJ RETOFITTED
AS A 1996 DOMESTIC ZJ FOR REAR IMPACT.
5.2L ENGINE. 4 SPEED AUTO TRANS. 4X4
POWER STEERING. A/C. ABS BRAKES. ROOF RACK
P235/75R15 TIRES ON ALUMINUM WHEELS & FULL SPARE.
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1996 STEEL FUEL RAILS AND MATCHING LINE BUNDLE. 1996 REAR LIFT GATE WITH FIXED GLASS

1996 REINFORCED BUMPER BAR. FASCIA & BRACKETS

TARGET WEIGHT (LBS) 4163 TOTAL. 2311 FRONT, 1852 REAR REP MAX OPT. WT.

NOT INCLUDING OCCUPANTS OR LUGGAGE BALLAST.

TEST VC05380

03/01/95 15.00

PAGE 1 OF 2

FUEL AND BALLAST

21.8 GALLONS OF STODDARD SOLVENT.

300 LBS OF LUGGAGE BALLAST SECURED IN CARGO AREA. 200 LBS SECURED TO FRONT FOOTWELLS

POST TEST REMARKS

THERE WAS EXCESSIVE FUEL LEAKAGE DURING IMPACT AND THE SUBSEQUENT THIRTY MINUTES. RESULTING FROM PARTIAL SEPERATION OF THE VENT LINE FITTING FROM

THE TANK.

DYNAMIC CRUSH. PITCH. AND REAR WHEEL MOTION RELATIVE TO THE FRONT SILL HAVE BEEN DETERMINED BY FILM ANALYSIS. TIME WAS BASED ON CAMERA TIMING DATA.

DYNAMIC CRUSH 22.3 +0R- 1 INCH AT 86. + OR - 5 MSEC.

C. M. PHOERSON

B. D. CARLISLE

GRAPHS -

GLOSSARY OF TERMS USED IN STANDARD REPORTS

```
ANTHROPOMORPHIC DEVICE
ANTHROPOMORPHIC TEST DEVICE
BASE COORDINATE SYSTEM
CENTERLINE
AD
ADT
BASE COORD
                        CENTERLINE
CAR COORDINATE SYSTEM
COUNTER CLOCKHISE
SEPARATION IN INCHES (MINUS INITIAL LENGTH)
SEPARATION IN MM (MINUS INITIAL LENGTH)
CORRECTED (ZEROED) PITCH
CORRECTED (ZEROED) ROLL
CAR COORD
CCH
CORR-IN .
CORR-HM
CORR-P
CORR-R
CORR-Y
                         CORRECTED (ZEROED) YAW
CH
EFI
                         CLOCKWISE
                         ELECTRONIC FUEL INJECTOR
ĔŅĠ
ENGPY
                        ENGINE
ENGINE
ENGINE
FRONT END SHEET METAL
REFERENCE POINT OR TARGET
FESH
FIDUCIAL
F5
                         FRONT SILL TARGET
FHD
IP
                         FORWARD
                         INSTRUMENT PANEL TARGET
                        POUNDS
LEFT C-POST & QUARTER PANEL TARGETS
LEFT FRONT SILL. MID SILL. & REAR SILL TARGETS
LEFT
LBS
LCP . LQP
LFS.LMS.LRS
                        MID SILL TARGET
PUT ON A COMMON BASIS
LEADING END BELOW TRAILING
LEADING END ABOVE TRAILING
HS
NORMALIZE
NOSE-DOWN
NOSE-UP
PERF
                         PERFORMANCE
                         REFERENCE
RELATIVE TO (ONE-DIMENSIONAL)
RIGHT C-POST & QUARTER PANEL TARGETS
RIGHT FRONT. HID. & REAR SILL TARGETS
REF
REL
RCP . ROP
RFS.RMS.RRS
                         LEFT SIDE LOWER THAN RIGHT
RIGHT SIDE LOWER THAN LEFT
REAR SILL TARGET
ROLL-LEFT
ROLL-RIGHT
RS.
RŤ
                         RIGHT
                         SEPARATION OF (THREE-DIMENSIONAL) SYSTEM
SEP
ŠŸ5
                         THROTTLE BODY INJECTOR TIME IN MILLISECONDS
TBI
TIME . MS
U/8
                         UNDERBODY
٧S
                         VERSUS
                         LONGITUDINAL AXIS (INCREASING TOWARD TRAILING EDGE)
X
ΧF
                         X-FILTERED
                         LATERAL AXIS (INCREASING TO THE RIGHT)
                         LEADING EDGE TO LEFT
LEADING EDGE TO RIGHT
VERTICAL AXIS (INCREASING UPWARD)
SHIFTED TO START AT ZERO
ZEROED INCHES
YAW-LEFT
YAW-RIGHT
ZEROED
ZERO-IN
ZERO-MM
                          ZEROED MILLIMETERS
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IMPACT ANALYSIS DEPARTMENT 5320 03/01/95 15.00 TEST VC05380

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FIGURE 1

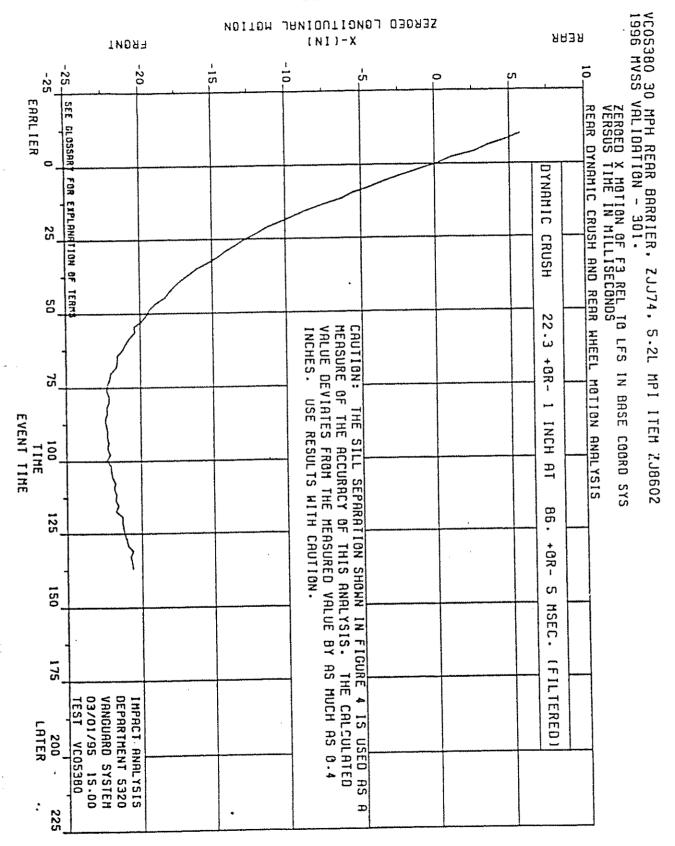
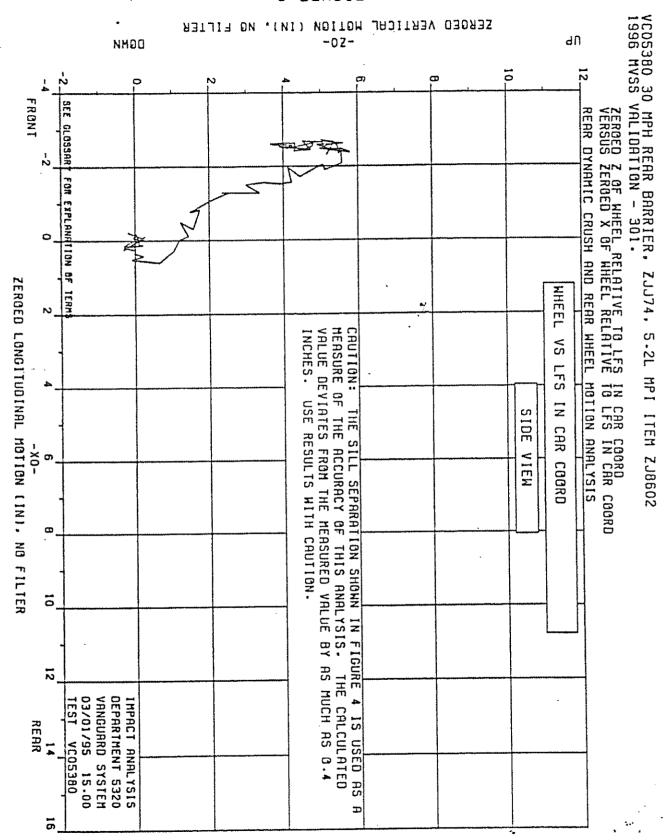


FIGURE 2



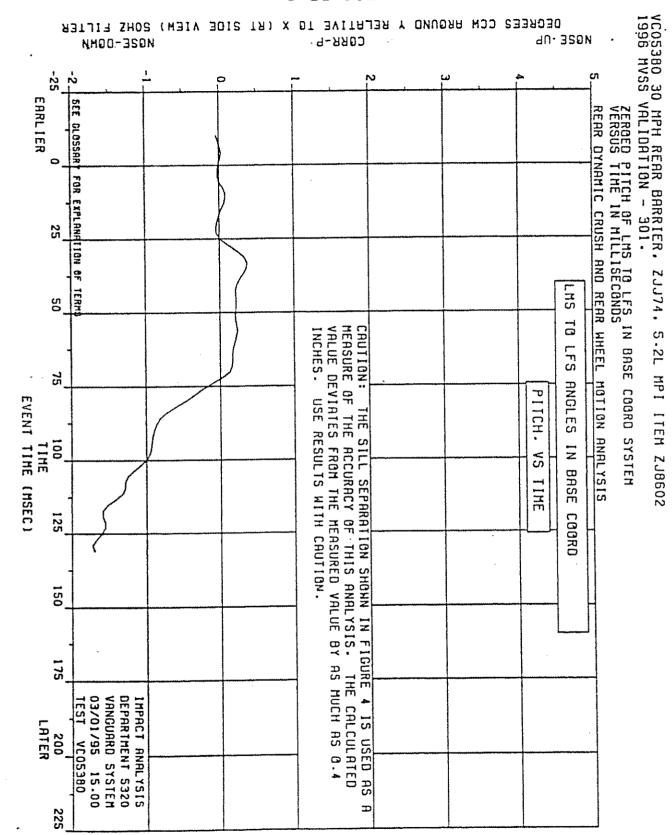
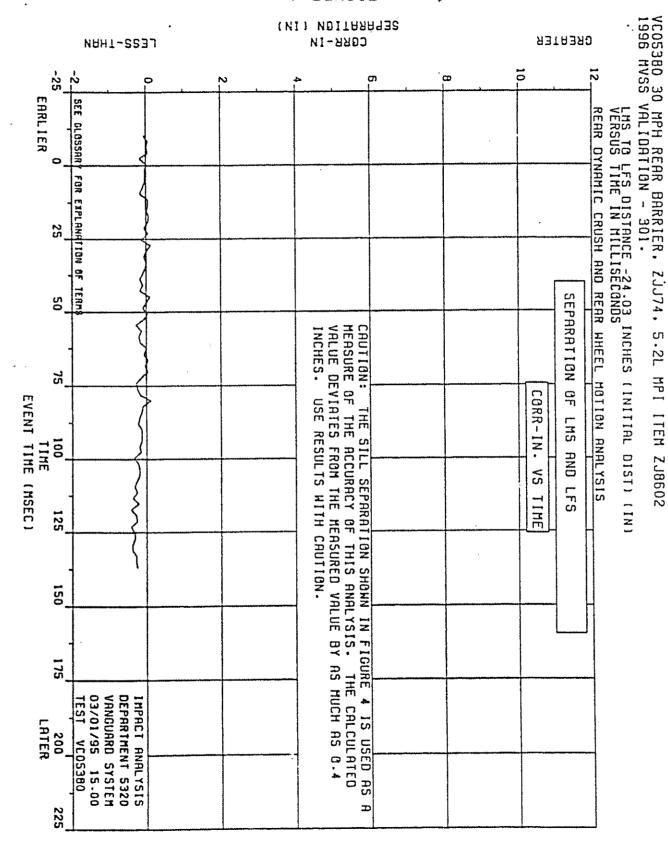


FIGURE 4



THE REPORT OF THE PARTY OF THE

