

637588

REPORT NUMBER: 214-CAL-05-02

**SAFETY COMPLIANCE TESTING FOR FMVSS 214
SIDE IMPACT PROTECTION
INDICANT**

FORD MOTOR CO
2005 FORD MUSTANG
TWO-DOOR COUPE

NHTSA NUMBER: CS0202

ADVANCED INFORMATION ENGINEERING SERVICES TEST NUMBER: 8675-F214-21

GENERAL DYNAMICS
ADVANCED INFORMATION ENGINEERING SERVICES
TRANSPORTATION SCIENCES CENTER
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November 30, 2004

FINAL REPORT

U. S. DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration
Enforcement
Office of Vehicle Safety Compliance
400 Seventh Street, SW
Room 6111 (NVS-220)
Washington, DC 20590

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| 15. Supplementary Notes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16. Abstract A 55/28 kph 90° Side Impact (Moving Deformable Barrier) Inducant Test was conducted on the subject Ford Mustang Two-Door Coupe. This test was performed at the New Car Assessment Program (NCAP) target test velocity of 62.0 kph, which is 8 kph faster than the target velocity required by the Office of Vehicle Safety Compliance's Laboratory Test Procedure (TP-214D-06, dated July 26, 2001). This test was conducted at the Advanced Information Engineering Services Crash Test Facility in Buffalo, New York, on November 30, 2004. The impact velocity of the Moving Deformable Barrier (MDB) was 61.80 kph, and the ambient temperature at the struck (driver's) side of the target vehicle at the time of impact was 21°C. The target vehicle post-test maximum crush was 176 mm at level 3. The test or target vehicle's performance is given below: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="0" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;"></th> <th style="width: 15%; text-align: center; border-bottom: 1px solid black;">Front SID H3</th> <th style="width: 10%;"></th> <th style="width: 15%; text-align: center; border-bottom: 1px solid black;">Rear SID H3</th> <th style="width: 10%;"></th> </tr> </thead> <tbody> <tr> <td>Left Upper Rib Acceleration:</td> <td style="text-align: center; border-bottom: 1px solid black;">58.1</td> <td style="text-align: center;">g's</td> <td style="text-align: center; border-bottom: 1px solid black;">ND</td> <td style="text-align: center;">g's</td> </tr> <tr> <td>Left Lower Rib Acceleration:</td> <td style="text-align: center; border-bottom: 1px solid black;">48.5</td> <td style="text-align: center;">g's</td> <td style="text-align: center; border-bottom: 1px solid black;">67.5</td> <td style="text-align: center;">g's</td> </tr> <tr> <td>Lower Spine Acceleration:</td> <td style="text-align: center; border-bottom: 1px solid black;">63.2</td> <td style="text-align: center;">g's</td> <td style="text-align: center; border-bottom: 1px solid black;">70.6</td> <td style="text-align: center;">g's</td> </tr> <tr> <td>Thoracic Trauma Index (TTI):</td> <td style="text-align: center; border-bottom: 1px solid black;">61</td> <td style="text-align: center;">g's</td> <td style="text-align: center; border-bottom: 1px solid black;">ND</td> <td style="text-align: center;">g's</td> </tr> <tr> <td>Pelvis Acceleration (PEV):</td> <td style="text-align: center; border-bottom: 1px solid black;">45</td> <td style="text-align: center;">g's</td> <td style="text-align: center; border-bottom: 1px solid black;">49</td> <td style="text-align: center;">g's</td> </tr> </tbody> </table> | | | | | | | Front SID H3 | | Rear SID H3 | | Left Upper Rib Acceleration: | 58.1 | g's | ND | g's | Left Lower Rib Acceleration: | 48.5 | g's | 67.5 | g's | Lower Spine Acceleration: | 63.2 | g's | 70.6 | g's | Thoracic Trauma Index (TTI): | 61 | g's | ND | g's | Pelvis Acceleration (PEV): | 45 | g's | 49 | g's |
| | Front SID H3 | | Rear SID H3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Left Upper Rib Acceleration: | 58.1 | g's | ND | g's | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Left Lower Rib Acceleration: | 48.5 | g's | 67.5 | g's | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lower Spine Acceleration: | 63.2 | g's | 70.6 | g's | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Thoracic Trauma Index (TTI): | 61 | g's | ND | g's | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pelvis Acceleration (PEV): | 45 | g's | 49 | g's | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| The two doors on the struck side of the vehicle did not separate from the body at the hinges or latches and the opposite doors did not open during the side impact event. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 17. Key Words Compliance Testing Side Impact Protection FMVSS 214 Side Impact Dummy (SID) | | | | 18. Distribution Statement Copies of this report are available from: National Highway Traffic Safety Administration Technical Reference Division (TRD) Room 5108 (NPO-230) 400 Seventh St., S.W. Washington, D.C. 20590 Telephone No. (202) 366-4946 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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SECTION 1

PURPOSE AND TEST PROCEDURE

This side impact test is part of the FMVSS 214 Side Impact Protection Compliance Test Program sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract No. DTNH22-02-D-01114. The purpose of this indicant test was to evaluate side impact protection in a 2005 Ford Mustang Two-Door Coupe when tested at the New Car Assessment Program (NCAP) target test velocity of 62.0 kph, which is 8 kph faster than the target velocity required by the Office of Vehicle Safety Compliance's Laboratory Test Procedure (TP-214D-05, dated July 26, 2001).

SECTION 2

SUMMARY OF SIDE IMPACT TEST

This Side Impact Protection Indicant Test was performed at the New Car Assessment Program (NCAP) target test velocity of 62.0 kph, which is 8 kph faster than the target velocity required by the Office of Vehicle Safety Compliance's Laboratory Test Procedure (TP-214D-06, dated July 26, 2001).

A 2005 Ford Mustang Two-Door Coupe was impacted on the left or driver's side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the monorail at a velocity of 61.80 kph (38.4 mph). The target vehicle was stationary and was positioned at an angle of 63° to the line of forward motion. The side impact test was conducted by the Advanced Information Engineering Services Transportation Sciences Center in Buffalo, New York on November 30, 2004. Pre- and post-test photographs of the test vehicle, the moving deformable barrier (MDB), and the Side Impact Hybrid III Dummies (SID H3s) are included in Appendix A.

Two restrained Side Impact Hybrid III Dummies (SID H3s) were placed in the driver (Pos. #1) and left rear (Pos. #4) designated seating positions according to the instructions specified in the OCWS Side Impact Laboratory Test Procedure which is dated July, 1997. The side impact test was documented by one real-time camera and 9 high-speed cameras. Camera locations and other pertinent camera information are included in this report.

The SID H3s were instrumented with the following accelerometers:

1. Left Upper Rib (LUR) uniaxial and redundant accelerometer (Y-direction)
2. Left Lower Rib (LLR) uniaxial and redundant accelerometer (Y-direction)
3. Lower Thoracic Spine (T₁₂) uniaxial and redundant accelerometer (Y-direction)
4. Pelvic (PEV) section uniaxial and redundant accelerometer (Y-direction)
5. Head triaxial accelerometers (X-, Y- and Z-direction)
6. Upper neck force and moment (X-, Y and Z-direction) load cells

A summary of the Side Impact Hybrid III Dummy (SID H3) configuration and verification test data can be found in Appendix C. A total of 60 channels of data were recorded. Appendix B contains the vehicle, MDB and dummy response data traces.

The following table summarizes the results of the test.

| Injury Criteria | Front SID H3 | Rear SID H3 |
|-----------------|--------------|-------------|
| TTI (g) | 61 | ND |
| PEV (g) | 45 | 49 |

AIR BAG DEPLOYMENT STATUS

| | DRIVER | FRONT PASSENGER | REAR PASSENGER |
|------------------|--------|-----------------|----------------|
| Front Air Bag | No | No | N/A |
| Knee Bolster Bag | N/A | N/A | N/A |
| Side Air Bag | N/A | N/A | N/A |
| Side Curtain Bag | N/A | N/A | N/A |

AUTOMATIC DOOR LOCK SUMMARY

| | |
|----------------------------------|----------|
| ADL Equipped Test Vehicle: | Yes |
| ADL Activation Status: | Disabled |
| Struck Side Door Lock Condition: | Unlocked |

SECTION 3

SUMMARY OF TEST RESULTS

DATA SHEET 1

GENERAL TEST AND VEHICLE PARAMETER DATA

TEST VEHICLE INFORMATION:

Year/Make/Model/Body Style: 2005 Ford Mustang Two-Door Coupe
 Vehicle Body Color: Red VIN: 1ZVFT80N955119605
 Vehicle NHTSA No.: C50202 Month & Year of Manufacture: 10/04
 Engine Data: 6 Cylinders; - CID; 4.0 Liters; - cc
 Engine Placement: X Longitudinal; or - Lateral
 Transmission: 5 Speed; - Manual; X Automatic; X Overdrive
 Final Drive: X Rear Wheel Drive; - Front Wheel Drive; - Four Wheel Drive
 Odometer Reading 44 km
 Supplemental Airbag Restraints:
 Front Occupant: X Frontal; - Knee; - Side; - Curtain
 Rear Occupant: - Frontal; - Knee; - Side; - Curtain
 Options:
X ADL; X A/C; X Power Steering; X Power Brakes; X Power Windows

DATA FROM TIRE PLACARD

Recommended Tire Size: P215/65R16
 *Recommended Cold Tire Pressure: 240 kPa FRONT; 240 kPa REAR

DATA FROM TIRE SIDEWALL:

Size of Tires on Test Vehicle: P215/65R16 96T ; Manufacturer: BF Goodrich
 Tire Pressure with Maximum Capacity Vehicle Load: Front: 300 kPa; Rear: 300 kPa
 Treadwear: 620 ; Traction: A ; Temperature: A

VEHICLE CAPACITY DATA:

Number of Occupants: 2 Front; 2 Rear; - 3rd Seat; 4 Total
 Type of Front Seats: X Bucket; - Bench; - Split Bench;
 Type of Rear Seats: X Bucket; - Bench; - Split Bench; X Contoured
 Type of Front Seat Back: - Fixed; X Adjustable with X Lever or - Knob
 Type of Rear Seat Back: X Fixed; - Adjustable with - Lever or - Knob
 Vehicle Max Capacity Loading = 327.0 kg (A)
 No. of Occupants x 68.04 kg. = 272.16 kg (B)
 Vehicle Cargo Capacity = 54.84 kg (A-B)

TEST VEHICLE DELIVERED WEIGHT WITH MAXIMUM FLUIDS:

Left Front = 414.0 kg Left Rear = 352.0 kg
 Right Front = 426.0 kg Right Rear = 347.0 kg
 TOTAL FRONT = 840.0 kg TOTAL REAR = 699.0 kg
 % of Total Weight = 54.6% % % of Total Weight = 45.4 %
 TOTAL WEIGHT = 1539.0 kg

* Tire pressure used in test.

DATA SHEET 1 (continued)

GENERAL TEST VEHICLE PARAMETER DATA

Vehicle: 2005 Ford Mustang Two-Door Coupe

NHTSA No. C50202

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:

| | | | |
|--|---|----------------|------------|
| Total Test Vehicle Delivered Weight with Max. Fluids | = | <u>1539.0</u> | kg (A) |
| Maximum Cargo Carrying Capacity of Test Vehicle | = | <u>54.84</u> | kg (B) |
| Weight of instrumented SID H3 Dummies (2 X 81.2 kg) | = | <u>162.4</u> | kg (C) |
| TEST VEHICLE TARGET WEIGHT: | = | <u>1756.24</u> | kg (A+B+C) |

FULLY LOADED TEST VEHICLE (UDVW + 2 SID H3(s) + CARGO):

| | | | | | | | |
|----------------------------|---|---------------|----|-------------------|---|--------------|----|
| Left Front | = | <u>466.0</u> | kg | Left Rear | = | <u>444.0</u> | kg |
| Right Front | = | <u>420.0</u> | kg | Right Rear | = | <u>429.0</u> | kg |
| TOTAL FRONT | = | <u>886.0</u> | kg | TOTAL REAR | = | <u>873.0</u> | kg |
| % of Total Weight | = | <u>50.4%</u> | % | % of Total Weight | = | <u>49.6%</u> | % |
| TOTAL TEST WEIGHT = | | <u>1759.0</u> | kg | | | | |

AS TESTED WEIGHT OF TEST VEHICLE (2 SID H3(s) + CARGO + EQUIPMENT & INSTRUMENTATION):

| | | | | | | | |
|----------------------------|---|--------------|----|-------------------|---|--------------|----|
| Left Front | = | <u>455.0</u> | kg | Left Rear | = | <u>440.5</u> | kg |
| Right Front | = | <u>426.5</u> | kg | Right Rear | = | <u>429.0</u> | kg |
| TOTAL FRONT | = | <u>881.5</u> | kg | TOTAL REAR | = | <u>869.5</u> | kg |
| % of Total Weight | = | <u>50.3%</u> | % | % of Total Weight | = | <u>49.7%</u> | % |
| TOTAL TEST WEIGHT = | | <u>1751</u> | kg | | | | |

TEST VEHICLE ATTITUDE (all dimensions in millimeters):

AS DELIVERED:

| | | | | | | | |
|------------|------------|-------------|------------|-----------|------------|------------|------------|
| Left Front | <u>746</u> | Right Front | <u>745</u> | Left Rear | <u>767</u> | Right Rear | <u>756</u> |
|------------|------------|-------------|------------|-----------|------------|------------|------------|

FULLY LOADED:

| | | | | | | | |
|------------|------------|-------------|------------|-----------|------------|------------|------------|
| Left Front | <u>730</u> | Right Front | <u>739</u> | Left Rear | <u>726</u> | Right Rear | <u>728</u> |
|------------|------------|-------------|------------|-----------|------------|------------|------------|

READY FOR TEST:

| | | | | | | | |
|------------|------------|-------------|------------|-----------|------------|------------|------------|
| Left Front | <u>736</u> | Right Front | <u>742</u> | Left Rear | <u>726</u> | Right Rear | <u>728</u> |
|------------|------------|-------------|------------|-----------|------------|------------|------------|

Test Vehicle Wheelbase: 2720 millimeters

C.G. = 1350.68 millimeters rearward of front wheel centerline

TOTAL VEHICLE LENGTH:

| | | |
|--------------|-------------|-------------|
| Right Side = | <u>4625</u> | millimeters |
| Left Side = | <u>4625</u> | millimeters |
| Centerline = | <u>4755</u> | millimeters |

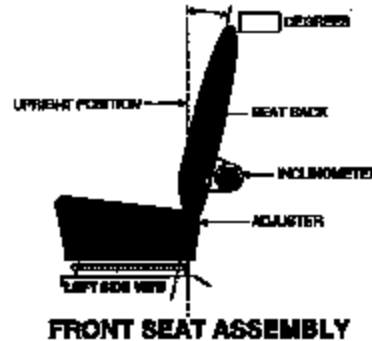
DATA SHEET 1 (continued)

GENERAL TEST VEHICLE PARAMETER DATA

Vehicle: 2005 Ford Mustang Two-Door Coupe

NHTSA No. C50202

Nominal Design Riding Position for adjustable driver and passenger seat backs. Please describe how to position the inclinometer to measure the seat back angle. Include description of the location of the adjustment latch detent, if applicable.



FRONT SEAT CUSHION PLACEMENT: Placed in mid-position of total seat cushion displacement (130 of 260 mm)

Total Length of Adjustment Travel: 260 millimeters

Total Number of Adjustment Positions or Detents: 24

FRONT SEAT BACK ADJUSTMENT POSITION: Set to 13° from level sill on the head restraint post.

Seat Back Torsion Angle: 25.9 degrees

SECOND POSITION SEAT:

Total Length of Fore/Aft Adjustment Travel: 0 millimeters

Seat Back Adjustment Position: fixed

ADJUSTABLE STEERING COLUMN POSITION: Placed in mid-tilt position (22°)

WINDOW POSITIONS: Left Front: Closed Left Rear: Fixed
Right Front: Open Right Rear: Removed

Note: Windows will be in closed position on struck side of test vehicle and in open position on opposite side.

AUTOMATIC DOOR LOCKS: Is test vehicle equipped with ADLs? X Yes - No

Does vehicle owner's manual describe how to deactivate ADLs? X Yes - No - N/A

Comments: Automatic door locks can be disabled. The vehicle was tested with the doors in the unlocked condition.

AMOUNT OF STODDARD SOLVENT IN FUEL TANK:

61.7 liters (Fuel Tank Usable Capacity)

57.92 liters used for test (92%-94% of Fuel Tank Usable Capacity)

LOCATION OF IMPACT POINT ON TEST VEHICLE SIDE TO BE IMPACTED:

Wheelbase = 2720 millimeters

Impact Point is 420 millimeters rearward of front axle centerline
(which is 940 millimeters forward of the wheelbase midpoint)

Actual Impact Point is 411 millimeters rearward of front axle centerline

DATA SHEET 2

TEST VEHICLE SUMMARY OF RESULTS

VEHICLE IDENTIFICATION:

Vehicle Year/Make/Model: 2005 Ford Mustang

Body Style: Two-Door Coupe

VIN: 1ZVFT80N955119605

NHTSA No.: C50202

Test Date: November 30, 2004

Overall Length = 4755 millimeters; Overall Width = 1810 millimeters

VEHICLE TEST WEIGHT (Pre-Test):

Left Front = 455.0 kg Left Rear = 440.5 kg

Right Front = 426.5 kg Right Rear = 429.0 kg

TOTAL FRONT = 881.5 kg TOTAL REAR = 869.5 kg

TOTAL VEHICLE WEIGHT 1751.0 kg

Wheelbase = 2720 millimeters

Longitudinal C.G. from Center of Front Axle = 1350.68 millimeters

Impact Angle with Respect to Impactor = 90 degrees

ACTUAL IMPACT POINT

Actual Impact Point is 9 mm forward of nominal impact ref. line (Lateral)

Actual Impact Point is 4 mm above nominal impact point (Vertical)

MAXIMUM EXTERIOR STATIC CRUSH:

1. LEVEL 1 (217 mm above ground) = 24 millimeters

2. LEVEL 2 (457 mm above ground) = 148 millimeters

3. LEVEL 3 (609 mm above ground) = 176 millimeters

4. LEVEL 4 (879 mm above ground) = 133 millimeters

5. LEVEL 5 (1294 mm above ground) = 9 millimeters

Maximum Post-Test Intrusion = 176 millimeters

OCCUPANTS:

Front Passenger:

Rear Passenger:

Dummy Identification SID H3/905

SID H3/906

Restraints Used Three point safety belt with torso belt pretensioner and force limiter.

Three point safety belt.

INSTRUMENTATION:

Number of Vehicle Data Channels: = 19

Number of Cameras: Onboard = 3

 Offboard = 6

 TOTAL = 9

DATA SHEET 3

MOVING DEFORMABLE BARRIER (MDB) SUMMARY

Vehicle: 2005 Ford Mustang Two-Door Coupe

NHTSA No. C50202

MDB FACE MANUFACTURER AND SERIAL NUMBER:

Plascore Inc. 061B0604-4 047A0504

POSITION OF IMPACT (MDB) ON MONORAIL:

Crabbed 27° to left

MDB DETAILS:

| | | | |
|---|---|-------------|-------------|
| Overall Width of Framework Carriage | = | <u>1250</u> | millimeters |
| Overall Length of MDB (incl. honeycomb impact face) | = | <u>4120</u> | millimeters |
| Wheelbase of Framework Carriage | = | <u>2590</u> | millimeters |
| Tread of Framework Carriage (Front & Rear) | = | <u>1875</u> | millimeters |
| C.G. Location Rearward of Front Axle | = | <u>1104</u> | millimeters |

MDB WEIGHT:

| | | | | | | | |
|--|---|---------------|---------|------------|---|--------------|----|
| Left Front | = | <u>409.5</u> | kg | Left Rear | = | <u>281.5</u> | kg |
| Right Front | = | <u>372.5</u> | kg | Right Rear | = | <u>299.0</u> | kg |
| TOTAL FRONT | = | <u>782.0</u> | kg | TOTAL REAR | = | <u>580.5</u> | kg |
| TOTAL MDB WEIGHT | = | <u>1362.5</u> | kg | | | | |
| Impact Angle (MDB C/L to Target Vehicle C/L) | = | <u>90</u> | degrees | | | | |
| Impact Speed | = | <u>61.80</u> | kph | | | | |

MAXIMUM STATIC CRUSH OF HONEYCOMB IMPACT FACE:

| | | | |
|------------------------------------|---|------------|-------------|
| 1. Row A at Center of Bumper Level | = | <u>247</u> | millimeters |
| 2. Row B at Top of Bumper Level | = | <u>199</u> | millimeters |
| 3. Row C at Mid Level | = | <u>161</u> | millimeters |
| 4. Row D at Top of Stack Level | = | <u>169</u> | millimeters |

INSTRUMENTATION:

Number of MDB Data Channels = 5

DATA SHEET 4

POST-TEST OBSERVATIONS

Vehicle: 2005 Ford Mustang Two-Door Coupe

NHTSA No. C50202

TEST DUMMY INFORMATION AND CONTACT POINTS:

| DESCRIPTION | FRONT SEAT | REAR SEAT |
|----------------------|---|--|
| ATD Type/Serial No. | SID H3/905 | SID H3/906 |
| Head Contact: | The side of the face to the shoulder and the side and top of the head to the top of the door trim panel | Side and top of the head to the C-pillar and side header intersection. |
| Upper Torso Contact: | Door Trim Panel | Interior Trim Panel |
| Lower Torso Contact: | Door Trim Panel | Interior Trim Panel |
| Left Knee Contact: | Door Trim Panel | Interior Trim Panel |
| Right Knee Contact: | Left Knee | Left Knee |

POST TEST DOOR OPENING AND SEAT TRACK INFORMATION

| DESCRIPTION | FRONT | REAR |
|--------------------|--|------|
| Left Side Doors | Closed, latched and inoperable without tools | N/A |
| Right Side Doors | Closed, latched and operable without tools | N/A |
| Hatch/Other Door | N/A | N/A |
| Seat Movement (mm) | 0 | N/A |
| Seat Back Failure | None | None |

POST TEST STRUCTURAL OBSERVATIONS

| <u>CRITICAL AREAS OF PERFORMANCE</u> | |
|--------------------------------------|---|
| Pillar Performance | The A- and B-pillars were moved inboard during the event with no visible tears or separations |
| Sill Separation | The sill was moved inboard with no visible tears or separations |
| Windshield Damage | The windshield was cracked along the left A-Pillar during the event |
| Window Damage | The front left side window shattered during the event |
| Other Notable Effects | None |

AIR BAG DEPLOYMENT STATUS:

| | DRIVER | FRONT PASSENGER | REAR PASSENGER |
|------------------|--------|-----------------|----------------|
| Front Air Bag | No | No | N/A |
| Knee Bolster Bag | N/A | N/A | N/A |
| Side Air Bag | N/A | N/A | N/A |
| Side Curtain Bag | N/A | N/A | N/A |

MDB LEFT EDGE IMPACT DATA

| Measured Parameter | Units | Requirement | Value |
|--------------------|-------|-------------|--------------|
| Horizontal Offset | mm | ± 50 mm | 9 mm forward |
| Vertical Offset | mm | ± 20 mm | 4 mm up |

SECTION 4

OCCUPANT AND VEHICLE INFORMATION

DATA SHEET 5

SID H3 INSTRUMENTATION DATA

Vehicle: 2005 Ford Mustang Two-Door Coupe

NHTSA No. C50202

| | | Front Dummy ID# 905 | | | | Rear Dummy ID# 906 | | | |
|------------------------------|-------------|---------------------|-------------|----------------|-------------|--------------------|-------------------|--------------------|-------------------|
| | | Pos. Direction | | Neg. Direction | | Pos. Direction | | Neg. Direction | |
| | | Max (g) | Time (msec) | Max (g) | Time (msec) | Max (g) | Time (msec) | Max (g) | Time (msec) |
| HEAD ACCELERATIONS: | | | | | | | | | |
| Longitudinal | X | 0.3 | 17.5 | -24.9 | 77.8 | 5.9 ¹ | 74.7 ¹ | -10.3 ¹ | 64.3 ¹ |
| Lateral | Y | 27.6 | 75.0 | -4.1 | 174.7 | 117.8 | 57.4 | -13.7 | 79.3 |
| Vertical | Z | 42.5 | 66.1 | -0.5 | 13.8 | 19.1 | 56.3 | -27.7 | 68.0 |
| Resultant | R | 45.9 | 66.3 | 0.0 | -5.7 | 118.2 | 57.4 | 0.0 | -12.1 |
| HIC | | 282.3 | | | | 579.5 | | | |
| NECK FORCES: | | | | | | | | | |
| Longitudinal | X | † | † | † | † | 140.2 | 151.4 | -855.4 | 85.8 |
| Lateral | Y | ‡ | ‡ | ‡ | ‡ | 193.3 | 152.5 | -1111.6 | 60.0 |
| Vertical | Z | † | † | † | † | 227.6 | 123.3 | -1867.8 | 59.4 |
| Resultant | R | † | † | † | † | 2175.5 | 59.4 | 0.1 | -14.6 |
| NECK MOMENTS: | | | | | | | | | |
| | X | 45.4 | 49.2 | -67.0 | 76.2 | 88.6 | 69.7 | -16.0 | 157.0 |
| | Y | ‡ | ‡ | ‡ | ‡ | 32.8 | 87.5 | -19.8 | 71.4 |
| | Z | † | † | † | † | 8.1 | 126.9 | -11.7 | 70.5 |
| | Resultant R | † | † | † | † | 91.4 | 69.7 | 0.0 | -6.2 |
| RIB ACCELERATIONS: | | | | | | | | | |
| Upper Rib Lateral | Y | 58.1 | 37.5 | -6.8 | 76.8 | ND | ND | ND | ND |
| Upper Rib Lateral | Y(R) | 57.9 | 37.5 | -5.9 | 76.8 | ND | ND | ND | ND |
| Lower Rib Lateral | Y | 48.5 | 37.5 | -9.1 | 76.2 | 67.5 | 55.0 | -12.1 | 85.6 |
| Lower Rib Lateral | Y(R) | 49.2 | 37.5 | -9.0 | 76.2 | 70.2 | 55.0 | -11.1 | 86.2 |
| SPINE ACCELERATIONS: | | | | | | | | | |
| Lower Lateral | Y | 63.2 | 41.9 | -12.5 | 65.7 | 70.6 | 58.7 | -17.9 | 91.2 |
| Lower Lateral | Y(R) | 63.4 | 41.9 | -12.5 | 65.7 | 70.6 | 58.7 | -17.0 | 91.2 |
| PELVIC ACCELERATIONS: | | | | | | | | | |
| Lateral | Y | 44.8 | 38.7 | -6.5 | 61.2 | 49.3 | 53.7 | -7.4 | 190.0 |
| Lateral | Y(R) | 45.3 | 38.7 | § | § | 48.6 | 53.7 | -7.5 | 81.9 |

REFERENCE: Positive Direction: Longitudinal (X) = forward; Lateral (Y) = to right; Vertical (Z) = down

Note: Rib, Spine and Pelvis data has been FIR filtered, Y(R) denotes redundant Y direction accelerometer.

Head Accelerations and Neck Forces are filtered at SAE Class 1000, Neck Moments are filtered at SAE Class 600.

¹Data is questionable after 132 ms.

† - Noise in Data

‡ - Channel Failed

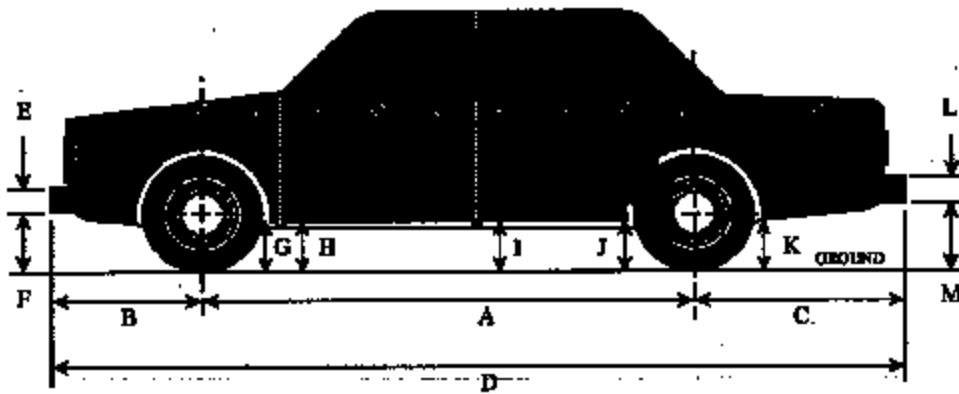
§ - Data is invalid after 96 ms.

DATA SHEET 6

VEHICLE SIDE MEASUREMENTS

Vehicle: 2005 Ford Mustang Two-Door Coupe

NHTSA No. C50202



LEFT SIDE VIEW

NOTE: all dimensions are in millimeters with tolerance of ± 3 mm

| | PRE-TEST (as delivered) | PRE-TEST (as tested) | POST-TEST (as tested) | Δ CHANGE |
|----|----------------------------|-------------------------|--------------------------|-----------------|
| A | 2720 | 2720 | 2720 | 0 |
| B | 925 | - | 925 | 0 |
| C | 1110 | - | 1110 | 0 |
| D | 4755 | - | 4755 | 0 |
| E | 335 | - | 335 | 0 |
| F | 215 | 192 | 237 | 45 |
| G | 148 | 126 | 152 | 26 |
| H | 157 | 133 | 153 | 20 |
| I | 167 | 134 | 149 | 15 |
| J1 | 165 | 129 | 141 | 12 |
| J2 | 169 | 133 | 145 | 12 |
| K | 300 | 259 | 261 | 2 |
| L | 330 | - | 330 | 0 |
| M | 345 | 300 | 302 | 2 |
| N | 685 | - | 658 | -27 |
| O | 515 | - | 513 | -2 |
| P | 783 | - | 775 | -8 |
| Q | 388 | - | 367 | -21 |
| R | 4625 | - | 4625 | 0 |
| S | 4625 | - | 4625 | 0 |
| T | 1810 | - | 1760 | -50 |

D = Length at Centerline

E&L = Bumper Thickness

R = Right Side Length

S = Left Side Length

T = Width at B-Pillar

J1 = To Pinch Weld

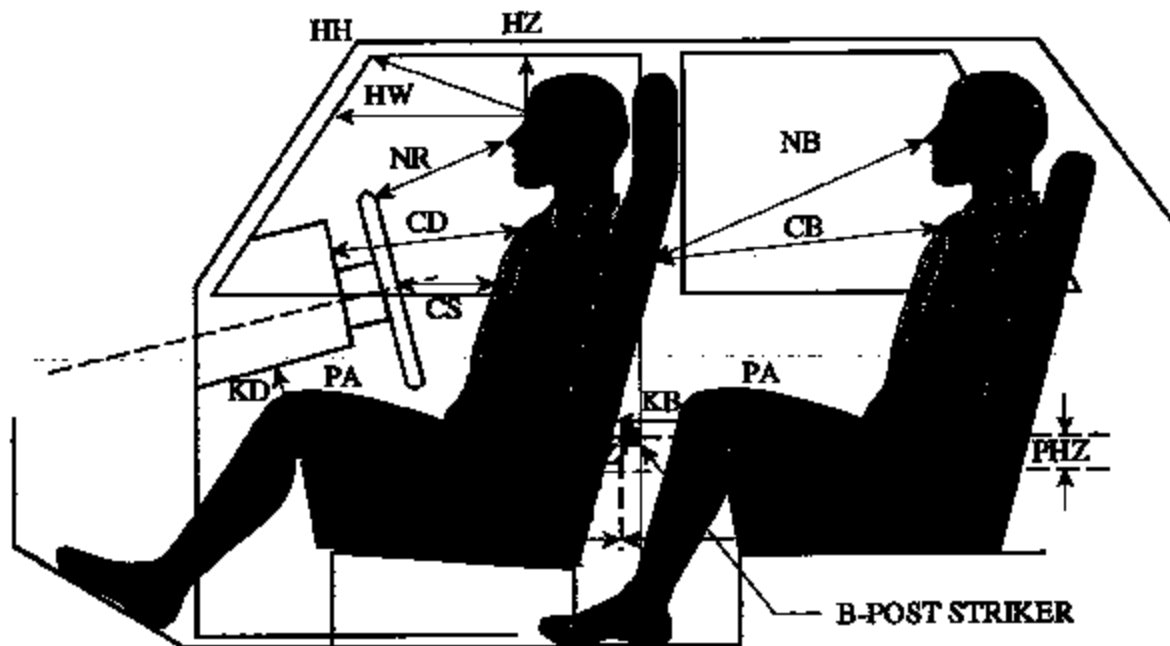
J2 = To Sill

DATA SHEET 7

SID H3 LONGITUDINAL CLEARANCE DIMENSIONS

Vehicle: 2005 Ford Mustang Two-Door Coupe

NHTSA No. C50202



LEFT SIDE VIEW

NOTE: 2-DOOR VEHICLE SHOWN.
REAR DUMMY PHX & PHZ
MEASUREMENTS FOR A 4-DOOR
VEHICLE WOULD USE THE C-POST
STRIKER AS A REFERENCE POINT

NOTE: All dimensions are in millimeters with tolerance of ± 3 mm

| | DRIVER ID# 905 | LEFT REAR PASS. ID# 906 |
|---------------------|----------------|-------------------------|
| HH | 385 | N/A |
| HW | 632 | N/A |
| HZ | 171 | 115 |
| NR/NB | 430 | 506 |
| CD/CB | 541 | 403 |
| CS | 311 | N/A |
| KDL(KDA°)/KBL(KDA°) | 142 / (40 °) | 97 / (34 °) |
| KDR(KBA°)/KBR(KBA°) | 126 / (55 °) | 104 / (26 °) |
| PA° | 24.4 ° | 24.2 ° |
| PHX | 486 | -335 |
| PHZ | 222 | 195 |

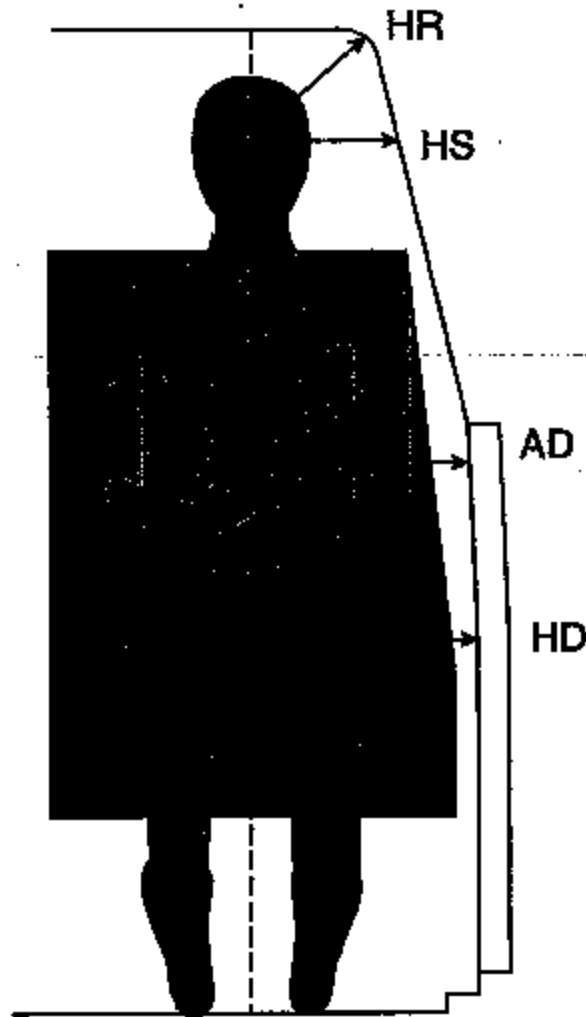
Note: 2-door vehicle shown. Rear dummy PHX & PHZ measurements for 4-door vehicle would use the C-post striker as a reference point.

DATA SHEET 8

SID H3 LATERAL CLEARANCE DIMENSIONS

Vehicle: 2005 Ford Mustang Two-Door Coupe

NHTSA No. C50202



NOTE: All dimensions are in millimeters with tolerance of ± 3 mm

| | DRIVER ID # 905 | | LEFT REAR PASS. ID # 906 | |
|-----|-----------------|-----------|--------------------------|------------|
| HR | 168 | | 149 | |
| HS | 338 | | 287 (C-Pillar) | |
| AD* | LOWER: 120 | UPPER: 92 | LOWER: 145 | UPPER: 133 |
| HD | 146 | | 137 | |

* Lower measurement is taken laterally at the center of the lower rib accelerometer height from the SID H3 arm segment to the closest part of the vehicle side.

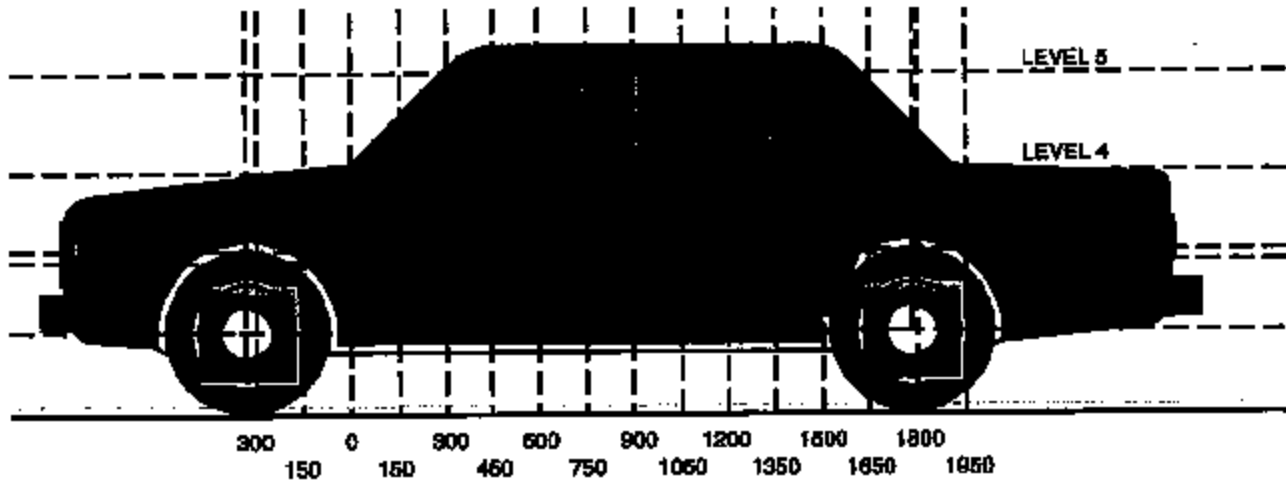
Upper measurement is taken laterally at the center of the upper rib accelerometer height from the SID H3 arm segment to the closest part of the vehicle side.

DATA SHEET 9

VEHICLE SIDE MEASUREMENTS

Vehicle: 2005 Ford Mustang Two-Door Coupe

NHTSA No. C50202



LEFT SIDE VIEW

NOTE: All measurements are in millimeters (mm)

- LEVEL 5 - WINDOW TOP
- LEVEL 4 - WINDOW SILL
- LEVEL 3 - MID-DOOR
- LEVEL 2 - OCCUPANT H-POINT
- LEVEL 1 - AXLE CENTERLINE HEIGHT OR SILL TOP HEIGHT

MEASUREMENTS ARE TAKEN WHEN THE VEHICLE IS IN THE "AS TESTED" CONFIGURATION.
 Measurements Along the Vertical 750 mm Line Shown Above:

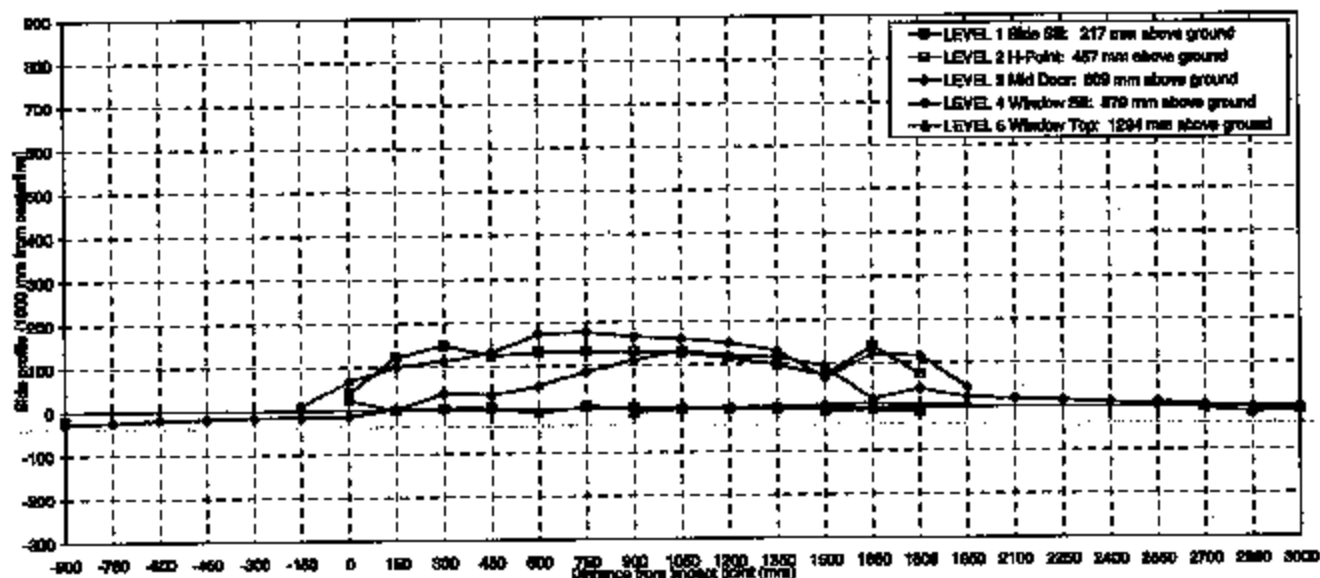
| | | | |
|--|---|-------------|-------------|
| Level 5 @ Window Top | = | <u>1294</u> | millimeters |
| Level 4 @ Window Sill | = | <u>879</u> | millimeters |
| Level 3 @ Mid Door | = | <u>609</u> | millimeters |
| Level 2 @ Occupant H-Point | = | <u>457</u> | millimeters |
| Level 1 @ Axle Centerline Height (or Sill Top Height) | = | <u>217</u> | millimeters |

DATA SHEET 10

VEHICLE EXTERIOR CRUSH PROFILES - ALL LEVELS

Vehicle: 2005 Ford Mustang Two-Door Coupe

NHTSA No. C50202



NOTE: All dimensions are in millimeters with a tolerance of ±1 mm

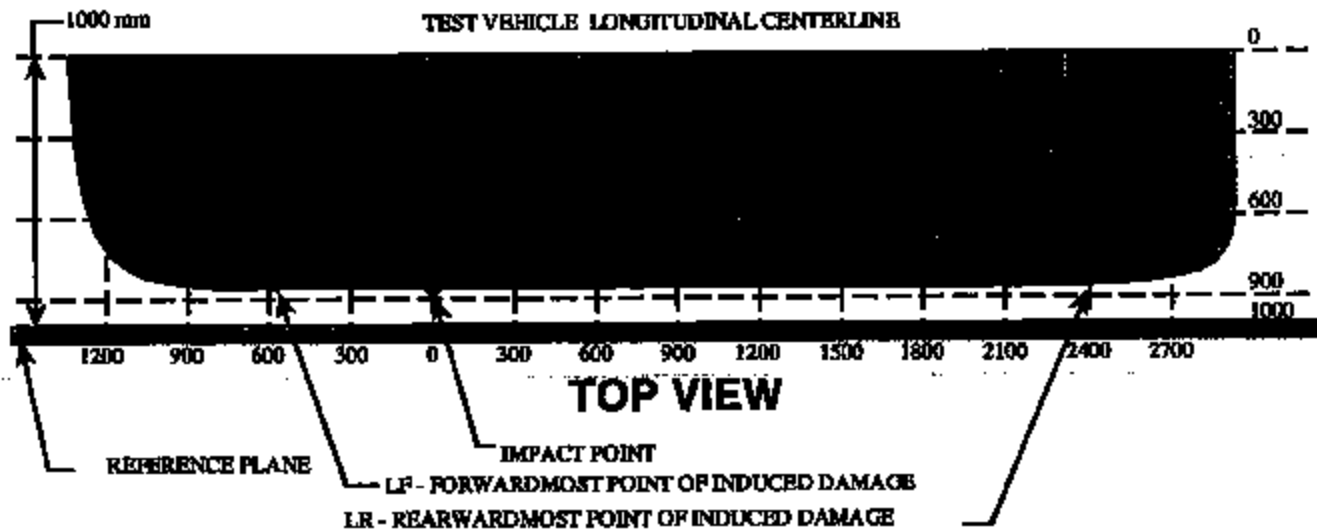
| LEVEL | HEIGHT (mm) | | DISTANCE IN MILLIMETERS (mm) FROM IMPACT POINT | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------------|-------------|-------|--|------|------|------|------|------|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----|--|
| | | | -900 | -750 | -600 | -450 | -300 | -150 | 150 | 300 | 450 | 600 | 750 | 900 | 1050 | 1200 | 1350 | 1500 | 1650 | 1800 | 1950 | 2100 | 2250 | 2400 | 2550 | 2700 | 2850 | 3000 | | |
| LEVEL 1 SIDE SR | 217 | FRONT | - | - | - | - | - | - | 138 | 137 | 137 | 139 | 138 | 142 | 143 | 143 | 143 | 144 | 144 | 144 | 146 | 142 | 142 | - | - | - | - | - | - | |
| | | POST | - | - | - | - | - | - | 138 | 141 | 141 | 130 | 144 | 144 | 142 | 143 | 143 | 143 | 143 | 143 | 142 | 142 | - | - | - | - | - | - | - | |
| | | CRUSH | N/A | N/A | N/A | N/A | N/A | N/A | 0 | 4 | 4 | -9 | 5 | 3 | -3 | -2 | -3 | -7 | -7 | -7 | -10 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | |
| LEVEL 2 H POINT | 457 | FRONT | 156 | - | - | - | - | - | 107 | 107 | 106 | 103 | 106 | 106 | 103 | 103 | 102 | 102 | 96 | 95 | 95 | - | - | - | - | - | 207 | 151 | 189 | |
| | | POST | 153 | - | - | - | - | - | 229 | 225 | 230 | 237 | 239 | 236 | 224 | 218 | 200 | 170 | 234 | 170 | - | - | - | - | - | 305 | 137 | 160 | 160 | |
| | | CRUSH | -23 | N/A | N/A | N/A | N/A | N/A | 222 | 148 | 126 | 132 | 135 | 132 | 130 | 115 | 96 | 74 | 139 | 75 | N/A | N/A | N/A | N/A | N/A | 76 | -4 | -4 | -6 | |
| LEVEL 3 MID DOOR | 609 | FRONT | 154 | 90 | - | - | - | 73 | 89 | 88 | 87 | 86 | 87 | 87 | 88 | 91 | 93 | 98 | 99 | 87 | 70 | - | - | - | 76 | 114 | 139 | 150 | | |
| | | POST | 125 | 66 | - | - | - | 87 | 189 | 300 | 219 | 259 | 263 | 233 | 249 | 241 | 225 | 166 | 221 | 264 | 115 | - | - | - | 85 | 117 | 136 | 130 | | |
| | | CRUSH | -39 | -34 | N/A | N/A | N/A | 12 | 100 | 112 | 132 | 173 | 176 | 165 | 163 | 150 | 130 | 68 | 122 | 117 | 45 | N/A | N/A | N/A | 9 | 3 | -3 | -2 | | |
| LEVEL 4 WINDOW SR | 879 | FRONT | - | 454 | 349 | 236 | 212 | 181 | 159 | 148 | 143 | 137 | 128 | 127 | 124 | 122 | 122 | 124 | 124 | 123 | 125 | 132 | 130 | 138 | 145 | 153 | 163 | 176 | | |
| | | POST | - | 480 | 398 | 230 | 197 | 167 | 162 | 186 | 177 | 191 | 214 | 236 | 257 | 242 | 235 | 217 | 142 | 167 | 149 | 150 | 146 | 147 | 146 | 156 | 163 | 168 | | |
| | | CRUSH | N/A | -84 | -39 | -17 | -15 | -14 | 3 | 38 | 34 | 54 | 96 | 111 | 133 | 130 | 117 | 95 | 31 | 43 | 21 | 18 | 14 | 9 | 3 | 0 | -2 | -10 | | |
| LEVEL 5 WINDOW TOP | 1294 | FRONT | - | - | - | - | - | - | - | - | - | - | - | 475 | 364 | 363 | 365 | 365 | 373 | 386 | 525 | - | - | - | - | - | - | - | | |
| | | POST | - | - | - | - | - | - | - | - | - | - | - | - | 467 | 362 | 367 | 367 | 373 | 383 | 399 | 532 | - | - | - | - | - | - | - | |
| | | CRUSH | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | -9 | -3 | 2 | 2 | 6 | 9 | 3 | 7 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | |

DATA SHEET 11

VEHICLE DAMAGE PROFILE DISTANCES

Vehicle: 2005 Ford Mustang Two-Door Coupe

NHTSA No. C50202



MEASUREMENT CONVENTIONS:

Forward of the impact point (towards front of vehicle) is considered negative (-).
Rearward of the impact point (toward rear of vehicle) is considered positive (+).

NOTE: All dimensions are in millimeters with tolerance of ± 3 mm.

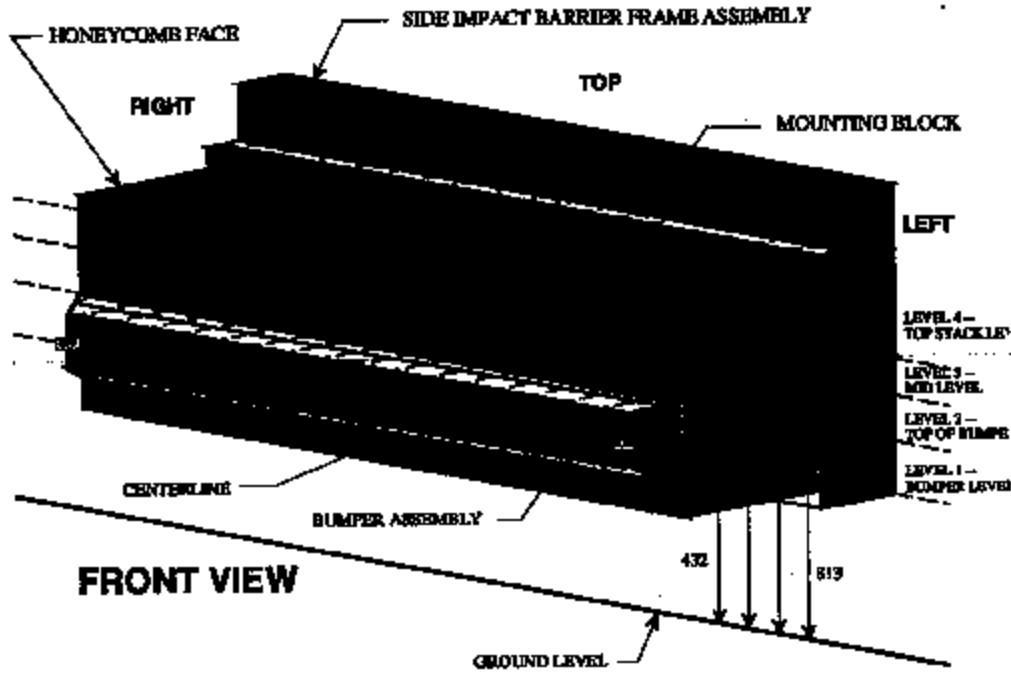
| DPD MEASUREMENTS | POST TEST (mm) | PRETEST (mm) | STATIC CRUSH (mm) |
|------------------|----------------|--------------|-------------------|
| 1 (LR = 2750 mm) | 158 | 158 | 0 |
| 2 2168 | 148 | 132 | 16 |
| 3 1586 | 207 | 95 | 112 |
| 4 1004 | 250 | 88 | 162 |
| 5 422 | 235 | 106 | 129 |
| 6 (LF = -160 mm) | 169 | 183 | -14 |

DATA SHEET 12

EXTERIOR STATIC CRUSH FOR IMPACTOR FACE

Vehicle: 2005 Ford Mustang Two-Door Coupe

NHTSA No. C50202



NOTE: Dimensions are shown in millimeters, mm

NOTE: All dimensions are in millimeters with a tolerance of ±3 mm

| LEVEL | HEIGHT AT CL. (mm)* | | DISTANCE RIGHT OF CENTER (mm) | | | | | | | | | DISTANCE LEFT OF CENTER (mm) | | | | | | | |
|--------------------------|---------------------|-------|-------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|------------------------------|-----|-----|-----|-----|-----|-----|--|
| | | | 800 | 700 | 600 | 500 | 400 | 300 | 200 | 100 | 100 | 200 | 300 | 400 | 500 | 600 | 700 | 800 | |
| LEVEL 4 TOP STACK | 813 | PRE | 619 | 619 | 619 | 619 | 619 | 619 | 619 | 619 | 619 | 619 | 619 | 619 | 619 | 619 | 619 | 619 | |
| | | POST | 766 | 781 | 740 | 703 | 639 | 641 | 641 | 648 | 670 | 683 | 701 | 724 | 756 | 764 | 775 | 788 | |
| | | CRUSH | 147 | 162 | 121 | 86 | 40 | 22 | 22 | 29 | 51 | 64 | 82 | 105 | 137 | 143 | 156 | 169 | |
| LEVEL 3 MID LEVEL | 686 | PRE | 619 | 619 | 619 | 619 | 619 | 619 | 619 | 619 | 619 | 619 | 619 | 619 | 619 | 619 | 619 | 619 | |
| | | POST | 758 | 780 | 743 | 699 | 676 | 661 | 659 | 649 | 647 | 656 | 674 | 704 | 738 | 748 | 749 | 753 | |
| | | CRUSH | 139 | 161 | 124 | 80 | 57 | 42 | 34 | 30 | 28 | 37 | 55 | 85 | 119 | 129 | 130 | 136 | |
| LEVEL 2 TOP BUMPER | 533 | PRE | 619 | 619 | 619 | 619 | 619 | 619 | 619 | 619 | 619 | 619 | 619 | 619 | 619 | 619 | 619 | 619 | |
| | | POST | 809 | 818 | 798 | 773 | 753 | 739 | 732 | 726 | 727 | 729 | 730 | 736 | 740 | 742 | 743 | 741 | |
| | | CRUSH | 190 | 199 | 179 | 154 | 134 | 120 | 113 | 107 | 106 | 110 | 111 | 117 | 121 | 123 | 124 | 122 | |
| LEVEL 1 MID BUMPER | 432 | PRE | 533 | 519 | 518 | 518 | 518 | 518 | 518 | 518 | 518 | 518 | 518 | 518 | 518 | 519 | 535 | | |
| | | POST | 768 | 766 | 760 | 740 | 713 | 698 | 690 | 681 | 681 | 683 | 684 | 693 | 704 | 696 | 694 | 709 | |
| | | CRUSH | 233 | 247 | 242 | 222 | 197 | 180 | 172 | 163 | 163 | 165 | 166 | 175 | 186 | 178 | 173 | 174 | |

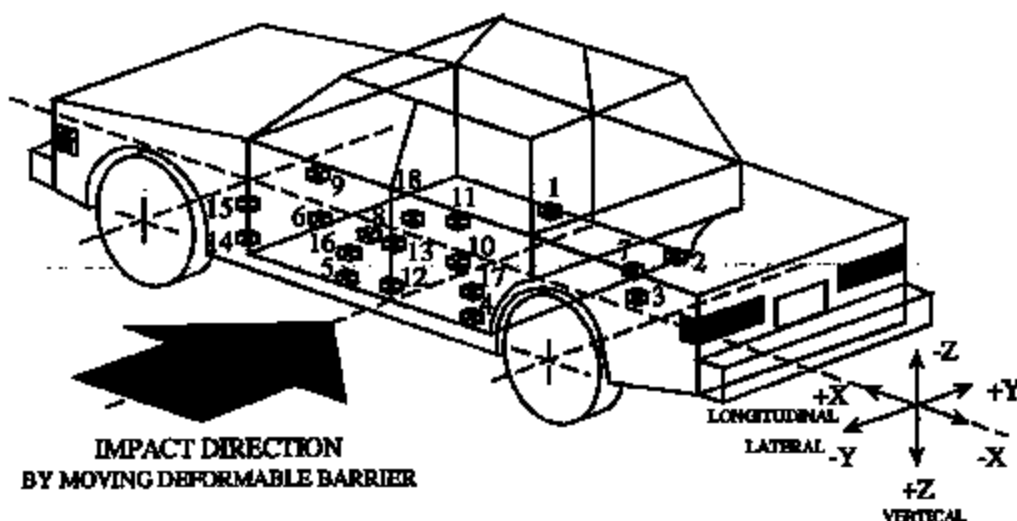
*Heights measured above ground level.

DATA SHEET 13

TEST VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Vehicle: 2005 Ford Mustang Two-Door Coupe

NHTSA No. CS0202



- 1-Right Side Sill @ Front Seat
- 2-Right Side Sill @ Rear Seat
- 3-Rear Floorpan Above Axle
- 4-Left Side Sill @ Rear Seat
- 5-Left Side Sill @ Front Seat
- 6-Left Front Door on Centerline
- 7-Right Rear Occupant Compartment
- 8-Midrear of Left Front Door
- 9-Left Front Door Upper Centerline

- 10-Midrear of Left Rear Door
- 11-Left Rear Door Upper Centerline
- 12-Left Lower B-Pillar
- 13-Left Middle B-Pillar
- 14-Left Lower A-Pillar
- 15-Left Middle A-Pillar
- 16-Front Seat Track
- 17-Rear Seat Track
- 18-Vehicle CG

DATA SHEET 13 (continued)

VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Vehicle: 2005 Ford Mustang Two-Door Coupe

NHTSA No. C50202

| Accel. No. | Location | Coordinates (mm)±3 mm | | | | Long. (x) | | Lat. (y) | | Vert. (z) | | Resultant | |
|------------|----------------------------------|-----------------------|------|------|------|-----------|-------------|----------|-------------|-----------|-------------|-----------|-------------|
| | | X* | Y* | Z* | | Max (g) | Time (msec) | Max (g) | Time (msec) | Max (g) | Time (msec) | Max (g) | Time (msec) |
| | | | | | | | | | | | | | |
| 1 | Right Side Sill at Front Seat | 2867 | 678 | -308 | pos. | 1.9 | 56.3 | 29.5 | 11.2 | 6.2 | 23.6 | 29.8 | 11.2 |
| | | | | | neg. | -7.5 | 15.7 | -2.5 | 97.4 | -5.3 | 13.7 | 0.0 | -12.3 |
| 2 | Right Side Sill at Rear Seat | 1909 | 667 | -231 | pos. | 2.1 | 55.8 | 30.6 | 10.1 | 6.6 | 31.6 | 30.9 | 10.1 |
| | | | | | neg. | -8.1 | 15.4 | -2.6 | 115.7 | -5.2 | 58.7 | 0.0 | -3.5 |
| 3 | Rear Floorpan Above Axle | 1207 | 21 | -554 | pos. | 1.9 | 86.9 | 32.0 | 11.0 | 8.2 | 21.1 | 32.1 | 11.0 |
| | | | | | neg. | -5.9 | 29.6 | -3.3 | 100.0 | -9.3 | 16.9 | 0.0 | -13.7 |
| 4 | Left Side Sill at Rear Seat | 1918 | -658 | -248 | pos. | - | - | 32.2 | 7.7 | - | - | - | - |
| | | | | | neg. | - | - | -5.1 | 12.5 | - | - | - | - |
| 5 | Left Side Sill at Front Seat | 2780 | -648 | -255 | pos. | - | - | 52.6 | 5.2 | - | - | - | - |
| | | | | | neg. | - | - | -14.7 | 16.7 | - | - | - | - |
| 6 | Left Front Door on Centerline | - | - | - | pos. | - | - | - | - | - | - | - | - |
| | | | | | neg. | - | - | - | - | - | - | - | - |
| 7 | Right Rear Occupant Compartment | 1882 | 407 | -165 | pos. | - | - | 31.1 | 10.1 | - | - | - | - |
| | | | | | neg. | - | - | -2.7 | 53.9 | - | - | - | - |
| 8 | Midrear of Left Front Door | - | - | - | pos. | - | - | - | - | - | - | - | - |
| | | | | | neg. | - | - | - | - | - | - | - | - |
| 9 | Left Front Door Upper Centerline | - | - | - | pos. | - | - | - | - | - | - | - | - |
| | | | | | neg. | - | - | - | - | - | - | - | - |
| 10 | Midrear of Left Rear Door | - | - | - | Pos. | - | - | - | - | - | - | - | - |
| | | | | | neg. | - | - | - | - | - | - | - | - |
| 11 | Left Rear Door Upper Centerline | - | - | - | pos. | - | - | - | - | - | - | - | - |
| | | | | | neg. | - | - | - | - | - | - | - | - |

*Reference: X - Rear Bumper (+ Forward)

Y - Vehicle Centerline (+ To Right) Z - Ground Level (+ Down)

**Accelerometer was not requested by COTR.

4-11

8675-F214-21

DATA SHEET 13 (continued)

VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Vehicle: 2005 Ford Mustang Two-Door Coupe

NHTSA No. C50202

| Accel. No. | Location | Coordinates (mm)±3 mm | | | | Long. (x) | | Lat. (y) | | Vert. (z) | | Resultant | |
|------------|----------------------|-----------------------|------|------|------|-----------|-------------|----------|-------------|-----------|-------------|-----------|-------------|
| | | X* | Y* | Z* | | pos. | Time (msec) | Max (g) | Time (msec) | Max (g) | Time (msec) | Max (g) | Time (msec) |
| | | | | | | | | | | | | | |
| 12 | Left Lower B-Pillar | 1899 | -655 | -326 | pos. | - | - | § | § | - | - | - | - |
| | | | | | neg. | - | - | § | § | - | - | - | - |
| 13 | Left Middle B-Pillar | 1623 | -690 | -932 | pos. | - | - | 50.0 | 9.6 | - | - | - | - |
| | | | | | neg. | - | - | -28.2 | 50.9 | - | - | - | - |
| 14 | Left Lower A-Pillar | 3078 | -686 | -421 | pos. | - | - | § | § | - | - | - | - |
| | | | | | neg. | - | - | § | § | - | - | - | - |
| 15 | Left Middle A-Pillar | 2934 | -676 | -980 | pos. | - | - | 49.7 | 12.9 | - | - | - | - |
| | | | | | neg. | - | - | -17.0 | 24.6 | - | - | - | - |
| 16 | Front Seat Track | 2148 | -562 | -235 | pos. | - | - | 28.3 | 27.1 | - | - | - | - |
| | | | | | neg. | - | - | -3.0 | 53.5 | - | - | - | - |
| 17 | Rear Seat Track | 1118 | -516 | -643 | pos. | - | - | 30.9 | 29.7 | - | - | - | - |
| | | | | | neg. | - | - | -9.3 | 103.9 | - | - | - | - |
| 18 | Vehicle CG | 2436 | 43 | -509 | pos. | 12.6 | 22.7 | 46.7 | 14.7 | 17.9 | 25.3 | 49.2 | 14.6 |
| | | | | | neg. | -18.9 | 10.8 | -18.1 | 76.2 | -15.0 | 14.3 | 0.0 | -5.2 |

*Reference: X - Rear Bumper (+ Forward)

Y - Vehicle Centerline (+ To Right) Z - Ground Level (+ Down)

§ - Transducer dislodged at approximately 5 ms.

4-12

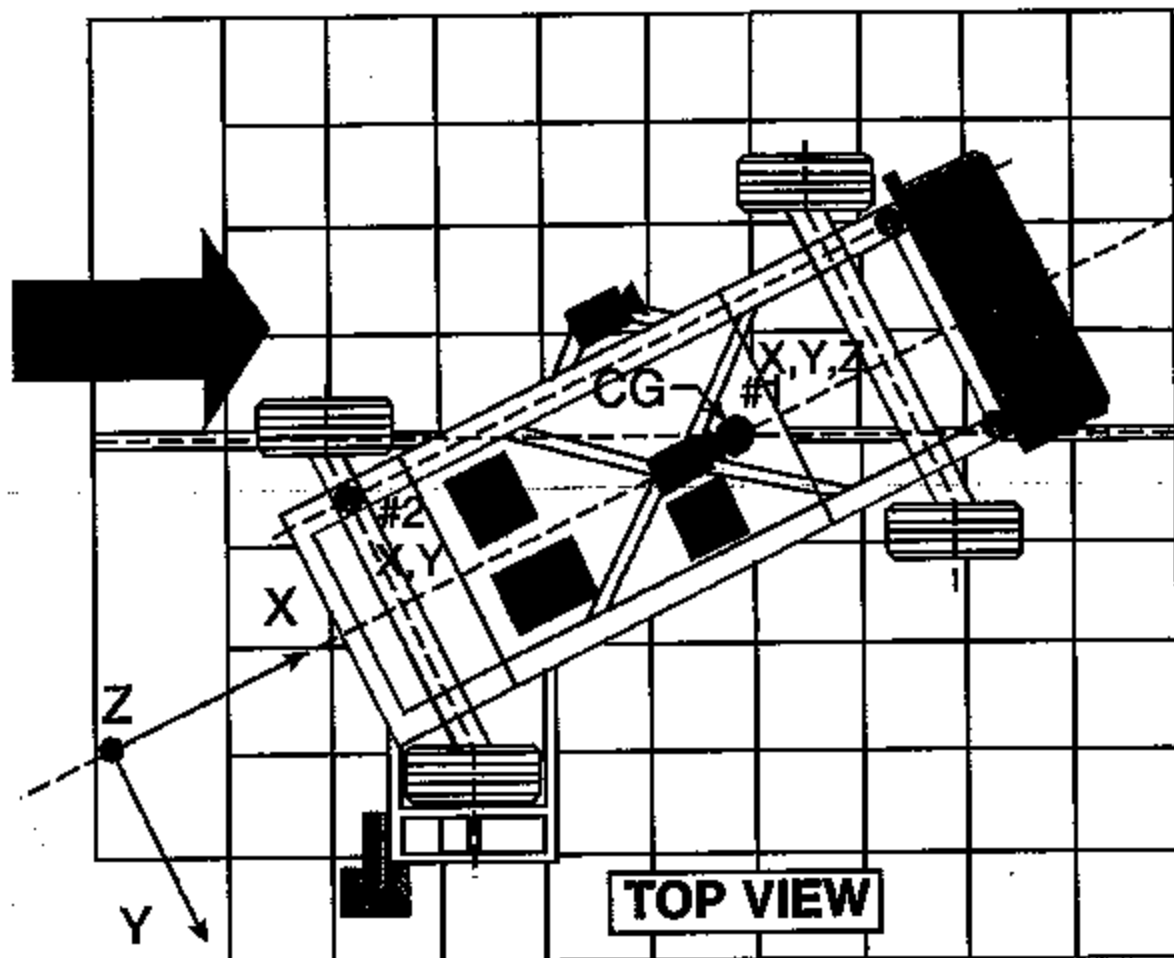
8675-F214-21

DATA SHEET 14.

MDB ACCELEROMETER LOCATIONS AND DATA SUMMARY

Vehicle: 2005 Ford Mustang Two-Door Coupe

NHTSA No. C50202



| Accel. No. | Location | Coordinates (millimeters) | | | Pos. Direct. | | Neg. Direct. | |
|------------|-------------------|---------------------------|------|------|--------------|-------------|--------------|-------------|
| | | X* | Y* | Z* | Max (g) | Time (msec) | Max (g) | Time (msec) |
| 1 | Longitudinal... X | 1859 | 0 | -330 | 1.3 | 97.7 | -23.9 | 41.2 |
| | Lateral..... Y | | | | 2.1 | 60.8 | -7.2 | 26.2 |
| | Vertical..... Z | | | | 15.3 | 64.1 | -15.3 | 36.1 |
| | Resultant..... R | | | | 27.0 | 47.7 | 0.1 | -8.0 |
| 2 | Longitudinal... X | 386 | -660 | -660 | 2.3 | 90.7 | -26.8 | 43.6 |
| | Lateral..... Y | | | | 4.0 | 24.6 | -2.7 | 59.9 |

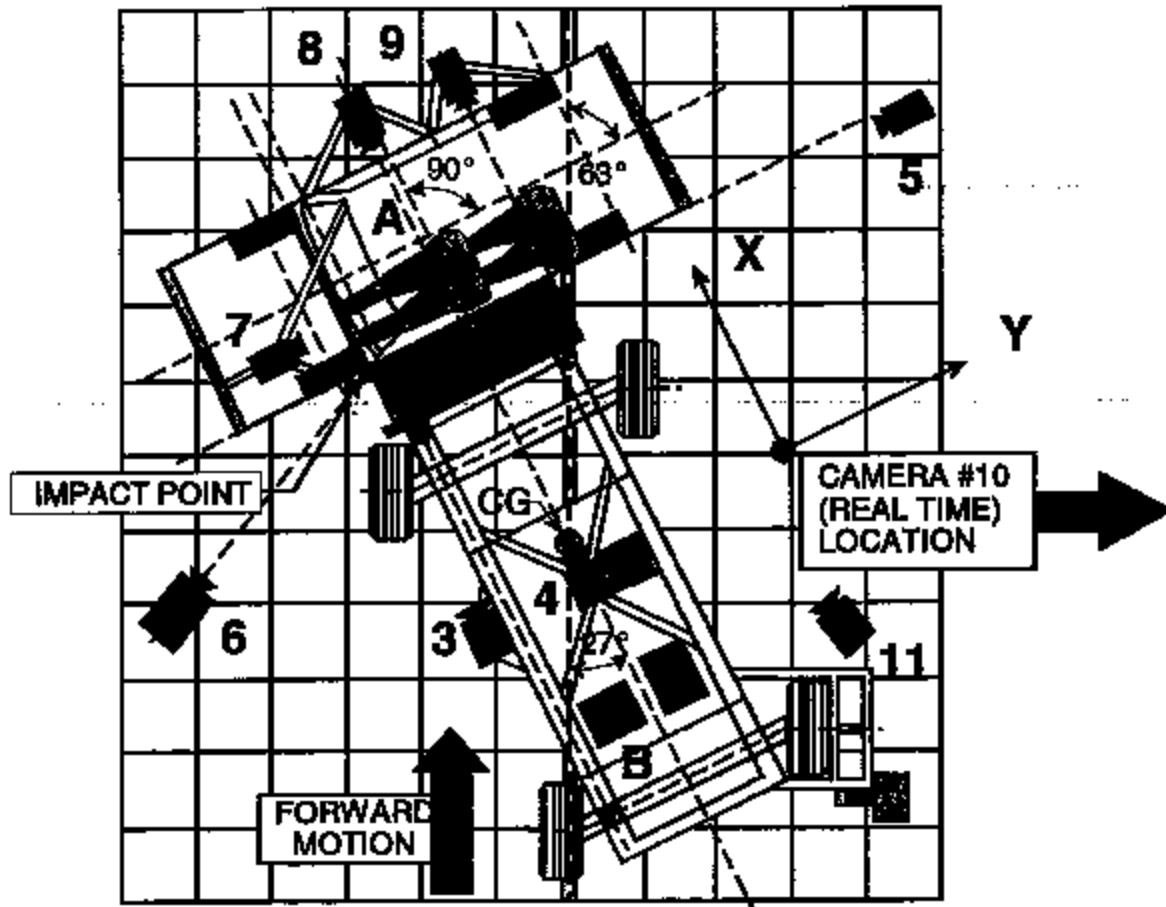
*Reference: X = Rear Bumper (+ Forward)
 Y = Vehicle Centerline (+ To Right)
 Z = Ground Level (+ Down)
 All measurements accurate to within ±3 mm.

DATA SHEET 15

HIGH SPEED CAMERA LOCATIONS AND DATA SUMMARY

Vehicle: 2005 Ford Mustang Two-Door Coupe

NHTSA No. C50202



| Camera No. | View | Coordinates (millimeters) | | | Angle (deg.) | Lens (mm) | Film Speed (fps) |
|------------|--|---------------------------|-------|-------|--------------|-----------|------------------|
| | | X* | Y* | Z* | | | |
| 1 | Overhead view of test vehicle | 75 | 816 | -4880 | -90 | 8 | 1000 |
| 2 | Overhead closeup view of impact plane | 193 | 845 | -4880 | -90 | 12.5 | 1000 |
| 3 | MDB onboard closeup view of impact point | -1470 | 0 | -847 | 0 | 13 | 1000 |
| 4 | MDB onboard view of driver dummy | -1140 | 838 | -1586 | -17 | 7.5 | 1000 |
| 5 | Right side ground level overall view | -50 | 10080 | -938 | -2 | 50 | 1000 |
| 6 | Left side ground level overall view | -2069 | -1748 | -1250 | -8 | 28 | 1000 |
| 7 | Test vehicle onboard driver front view | 577 | -164 | -1281 | -12 | 25 | 1000 |
| 8 | Test vehicle onboard driver side view | 1666 | 1070 | -1063 | -10 | 12.5 | 1000 |
| 9 | Test vehicle onboard passenger side view | 1626 | 2012 | -1122 | -15 | 12.5 | 1000 |
| 10 | Real time film coverage of test | - | - | - | - | - | 30 |

* Reference (from point of impact); all measurements accurate to within ± 6 mm.

X = (Impact Point) + Forward
 Y = (Impact Point) + To Right
 Z = (Ground Level) + Down

SECTION 5

FUEL SYSTEM INTEGRITY

DATA SHEET 16

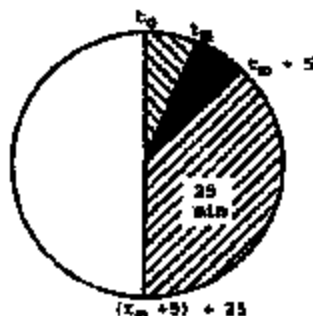
FMVSS 301 FUEL SYSTEM INTEGRITY DATA

NHTSA No.: C50202 TEST DATE: November 30, 2004
 Vehicle Mfr./Make/Model: Ford Motor Co 2005 Ford Mustang Two-Door Coupe

TEST VEHICLE IMPACT TYPE:

- Frontal (48.28 kph)
- Oblique (48.28 kph) with ° barrier face first
 contacting the side
 (driver/passenger)
- Rear Moving Barrier (48.28 kph)
- Lateral Moving Barrier (32.19 kph)
- X Side Impact Moving Deformable Barrier (62.0 kph)
 contacting the driver side side
 (driver/passenger)

FUEL SPILLAGE MEASUREMENT:



1. From impact until vehicle motion ceases
2. For five minute period after vehicle motion ceases
3. For next 25 minutes

| ACTUAL | MAX ALLOWED |
|--------|-------------|
| 0 g | 28 g |
| 0 g | 142 g |
| 0 g | 28 g/1 min. |

SOLVENT SPILLAGE DETAILS:

None

DATA SHEET 17
ROLLOVER DATA

Vehicle: 2005 Ford Mustang Two-Door Coupe

NHTSA No.: C50202



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

| Rollover Stage | Rotation Time (spec. 1-3 min) | | | | FMVSS 301 Hold Time | | Total Time | | | | Next Whole Minute Interval | |
|----------------|-------------------------------|---------|---------|---------|---------------------|---------|------------|---------|---------|---------|----------------------------|---------|
| | minutes | seconds | minutes | seconds | minutes | seconds | minutes | seconds | minutes | seconds | minutes | seconds |
| 0° - 90° | 1 | 12 | 5 | 6 | 6 | 12 | 7 | | | | | |
| 90° - 180° | 1 | 08 | 5 | 8 | 6 | 8 | 7 | | | | | |
| 180°-270° | 1 | 03 | 5 | 3 | 6 | 3 | 7 | | | | | |
| 270°-360° | 1 | 09 | 5 | 9 | 6 | 9 | 7 | | | | | |

II. FMVSS 301 REQUIREMENTS: (Maximum allowable solvent spillage):

| First 5 minutes from onset of rotation | 6th min. | 7th min. | 8th min. (if required) |
|--|----------|----------|------------------------|
| 142 g | 28 g | 28 g | 28 g |

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

| Rollover Stage | First 5 minutes from onset of rotation (g) | 6th min. (g) | 7th min. (g) | 8th min. (if required) (g) |
|----------------|--|--------------|--------------|----------------------------|
| 0° - 90° | 0 | 0 | 0 | N/A |
| 90° - 180° | 0 | 0 | 0 | N/A |
| 180°-270° | 0 | 0 | 0 | N/A |
| 270°-360° | 0 | 0 | 0 | N/A |

Note: Record spillage for whole minute intervals only as determined above.

IV. SOLVENT SPILLAGE LOCATION(S):

| Rollover Stage | Spillage Location |
|----------------|-------------------|
| 0° - 90° | None |
| 90° - 180° | None |
| 180°-270° | None |
| 270°-360° | None |

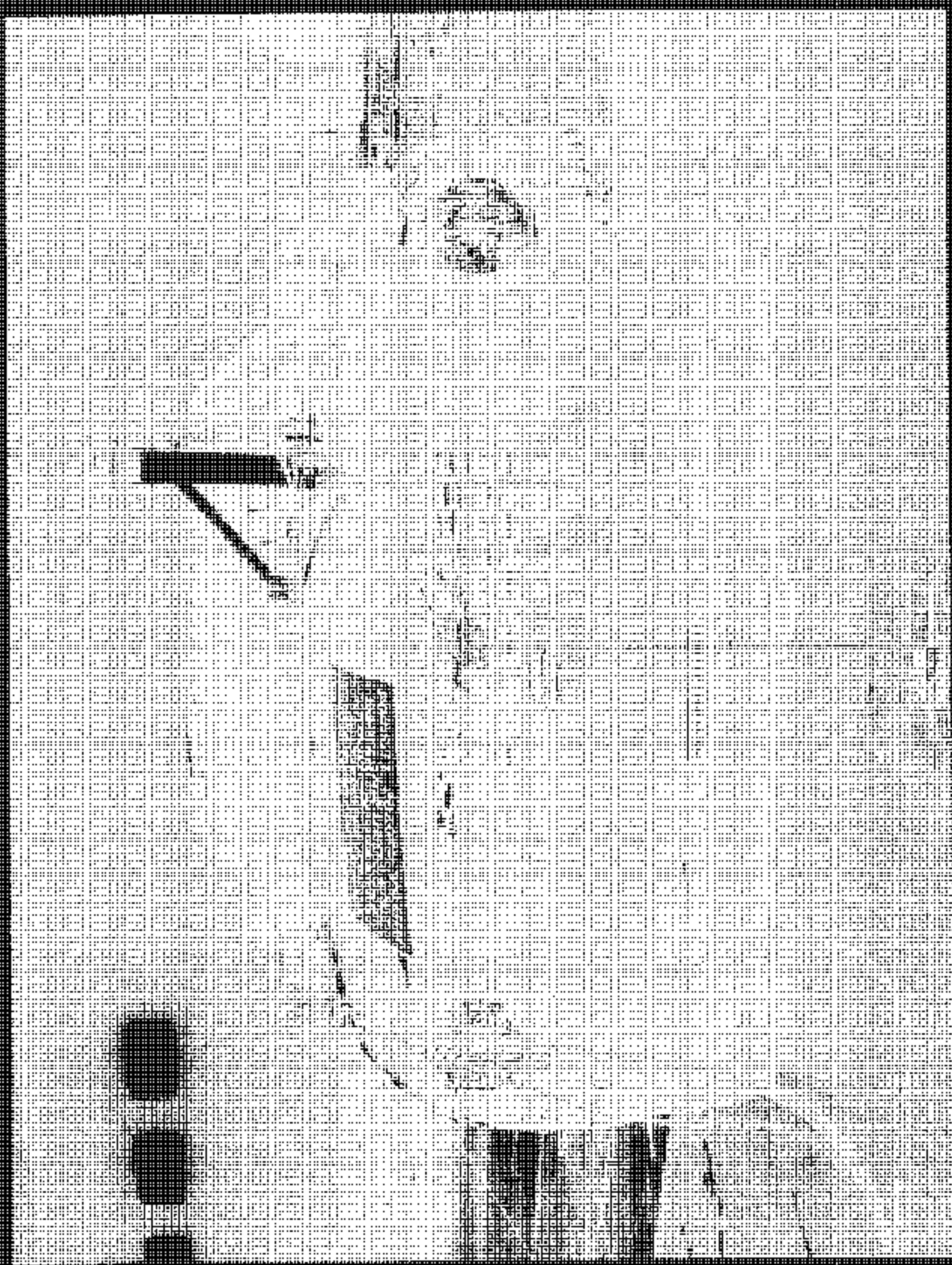
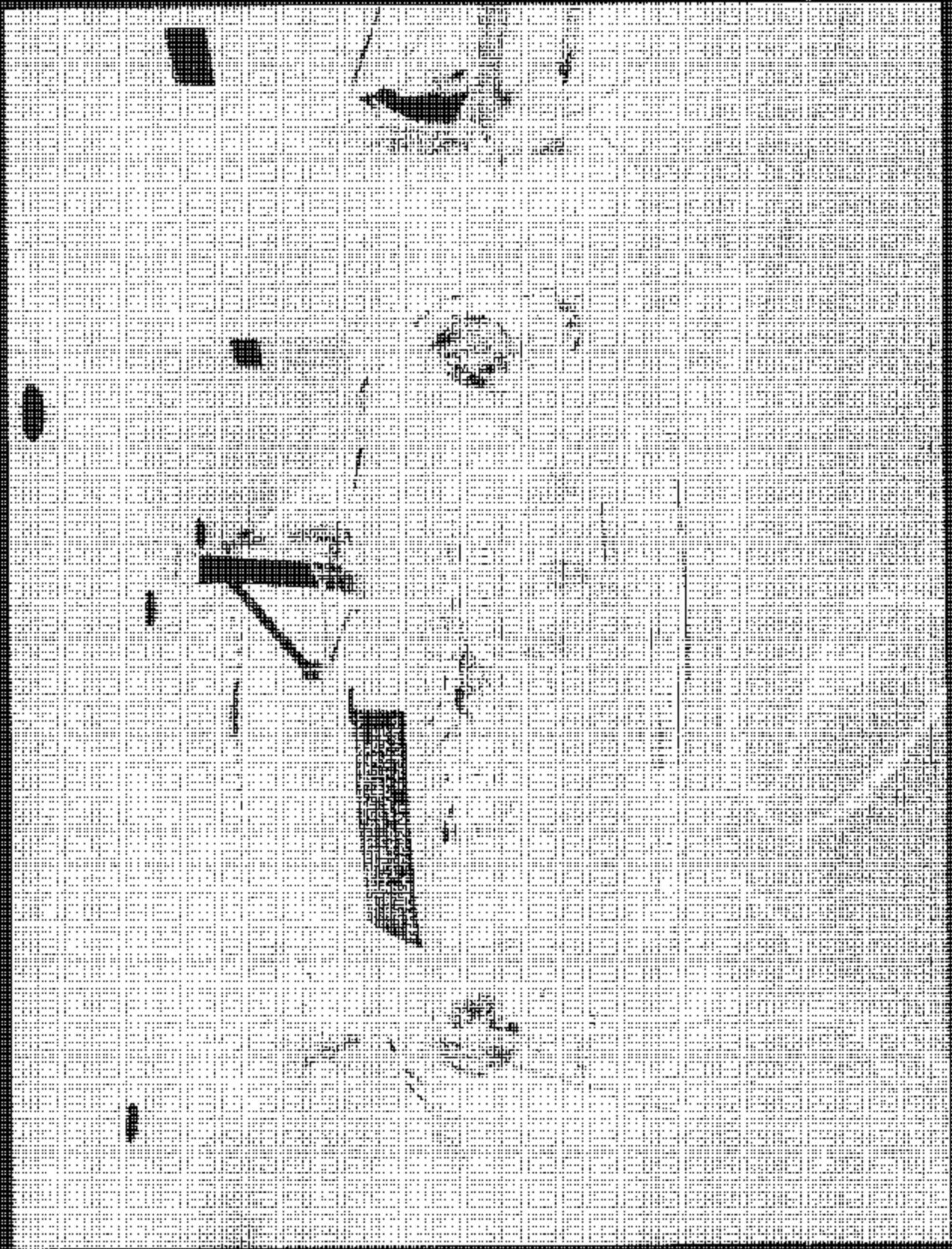


FIGURE 1. PRELIMINARY FRONT VIEW OF F8U-1 PROPELLER

FIG. A.2 POSE-NET FRONTAL VIEW OF TEST VEHICLE



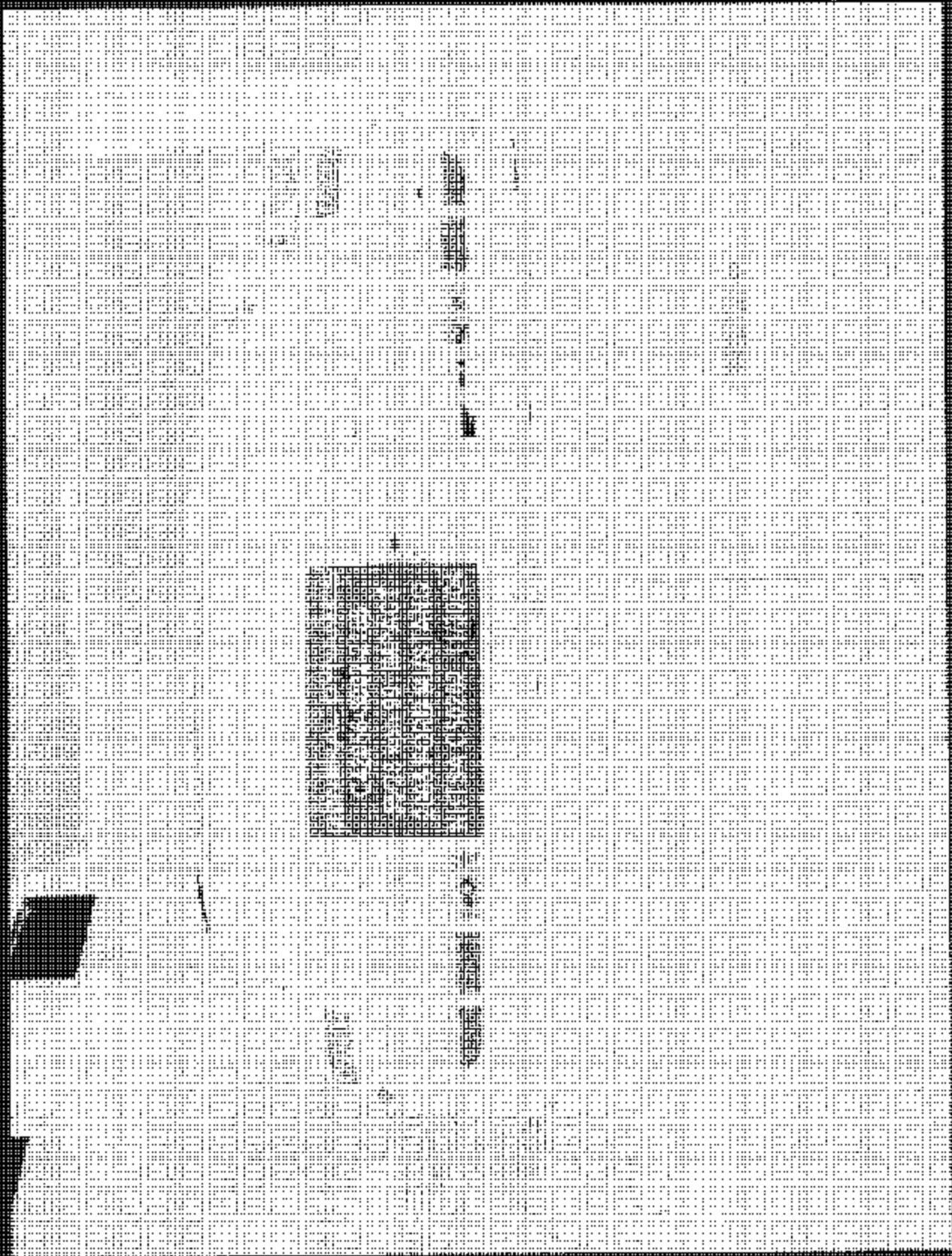
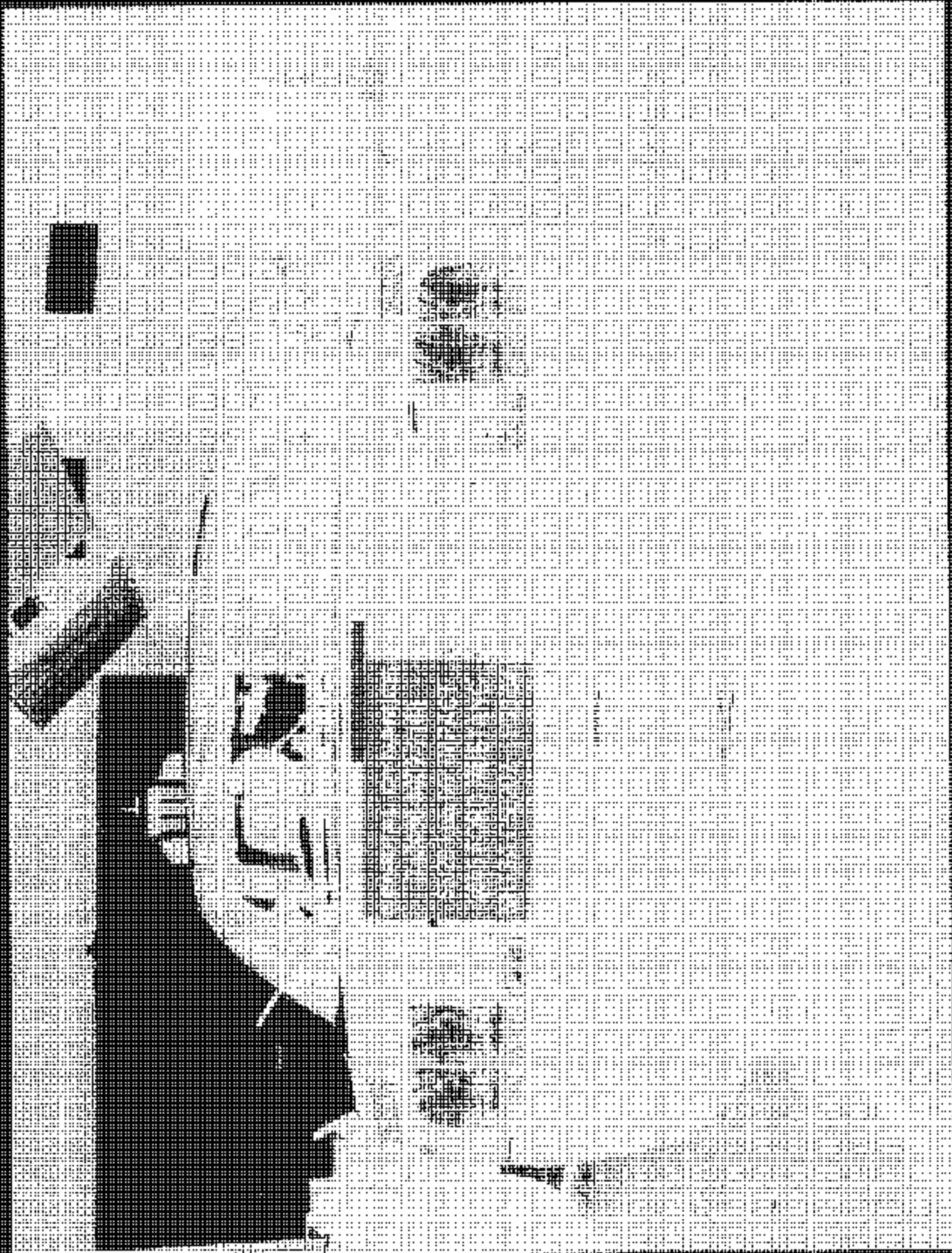


Figure A-3 PRE-TEST REAR VIEW OF TEST VEHICLE



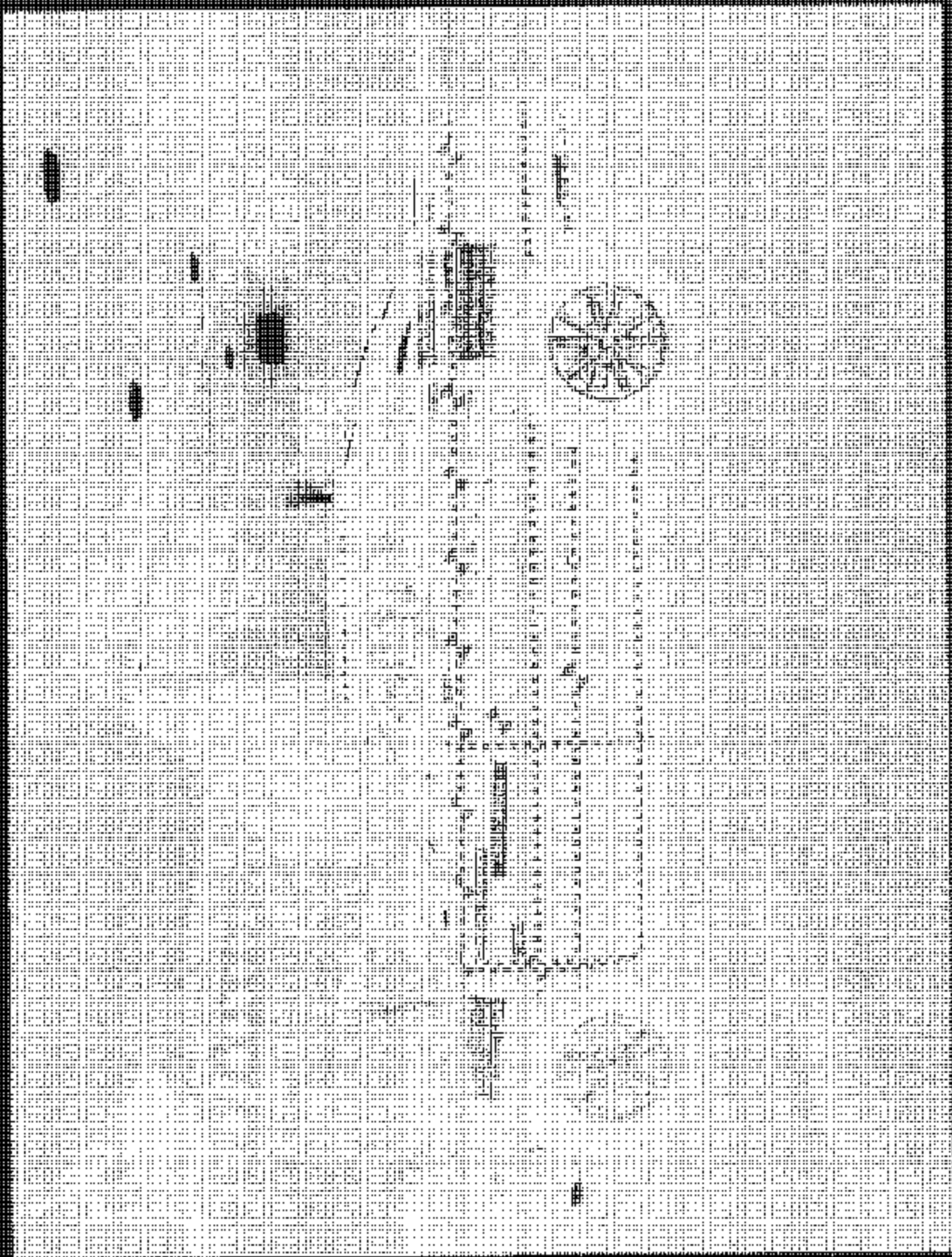


FIGURE 1. PRE-TEST IMPACTED SURFACE VIEW OF TEST VEHICLE

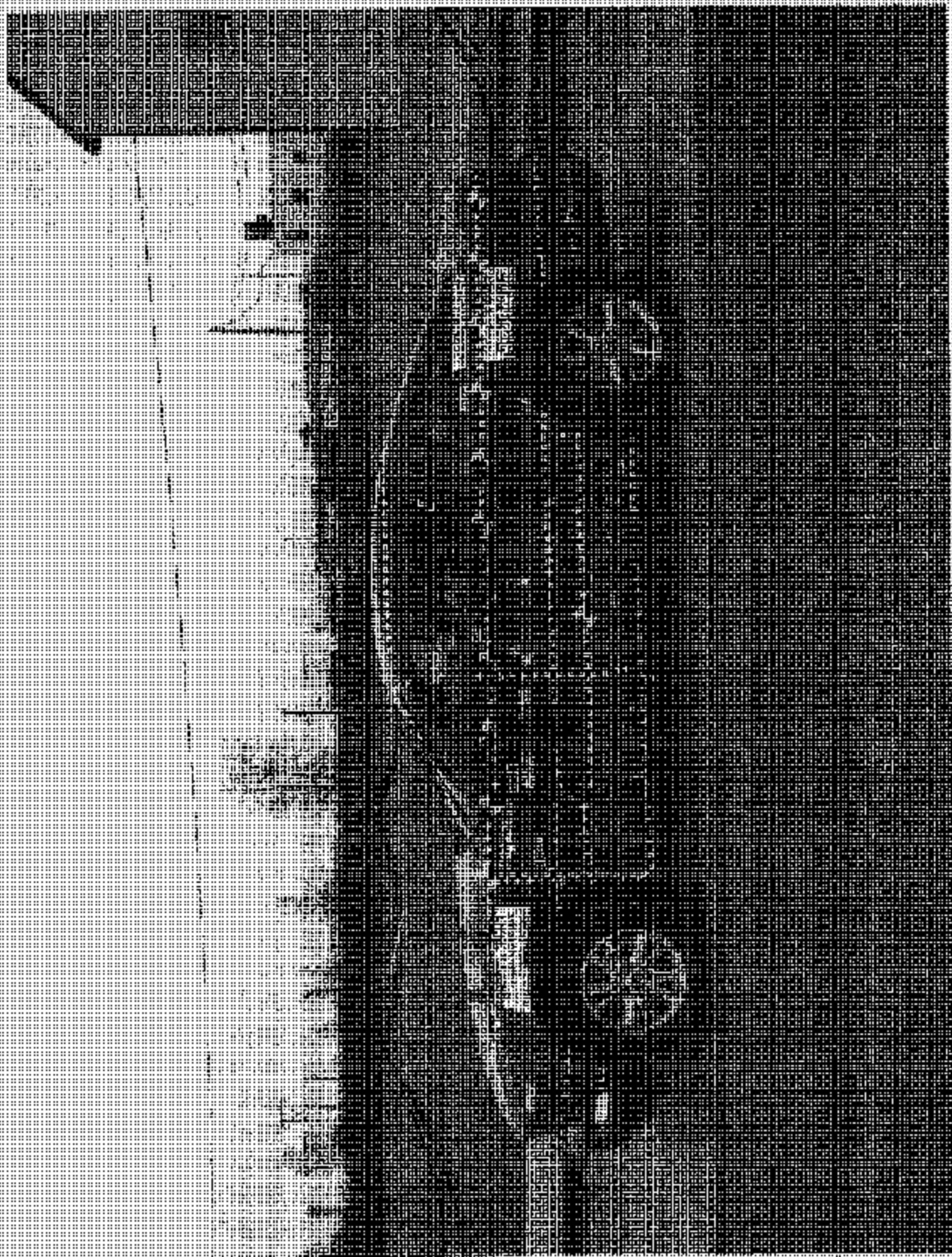


FIGURE 3-5 POST-IMPACT SIDE VIEW OF TEST VEHICLE

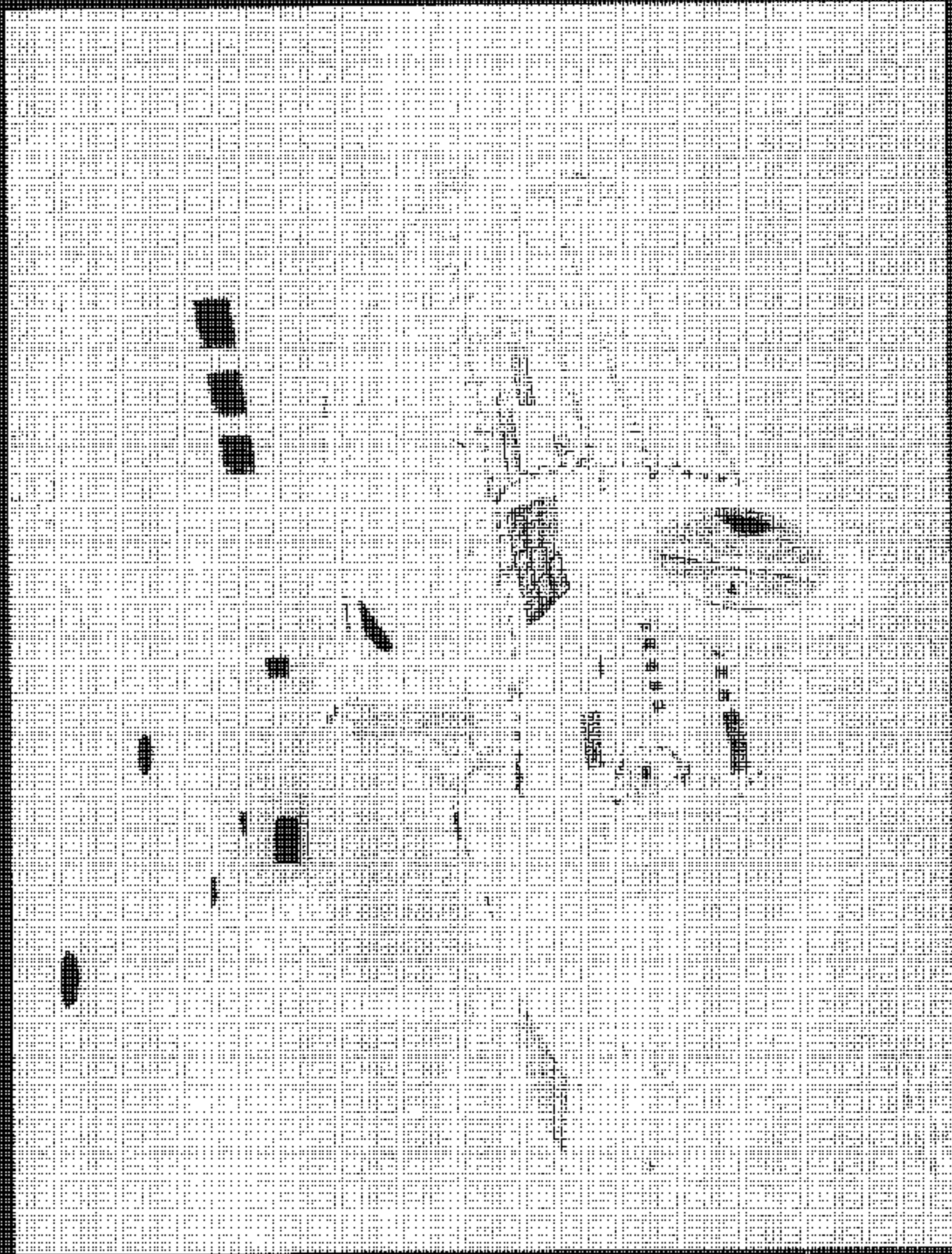


FIGURE 7 PROPOSED FRONT VIEW OF TEST VEHICLE

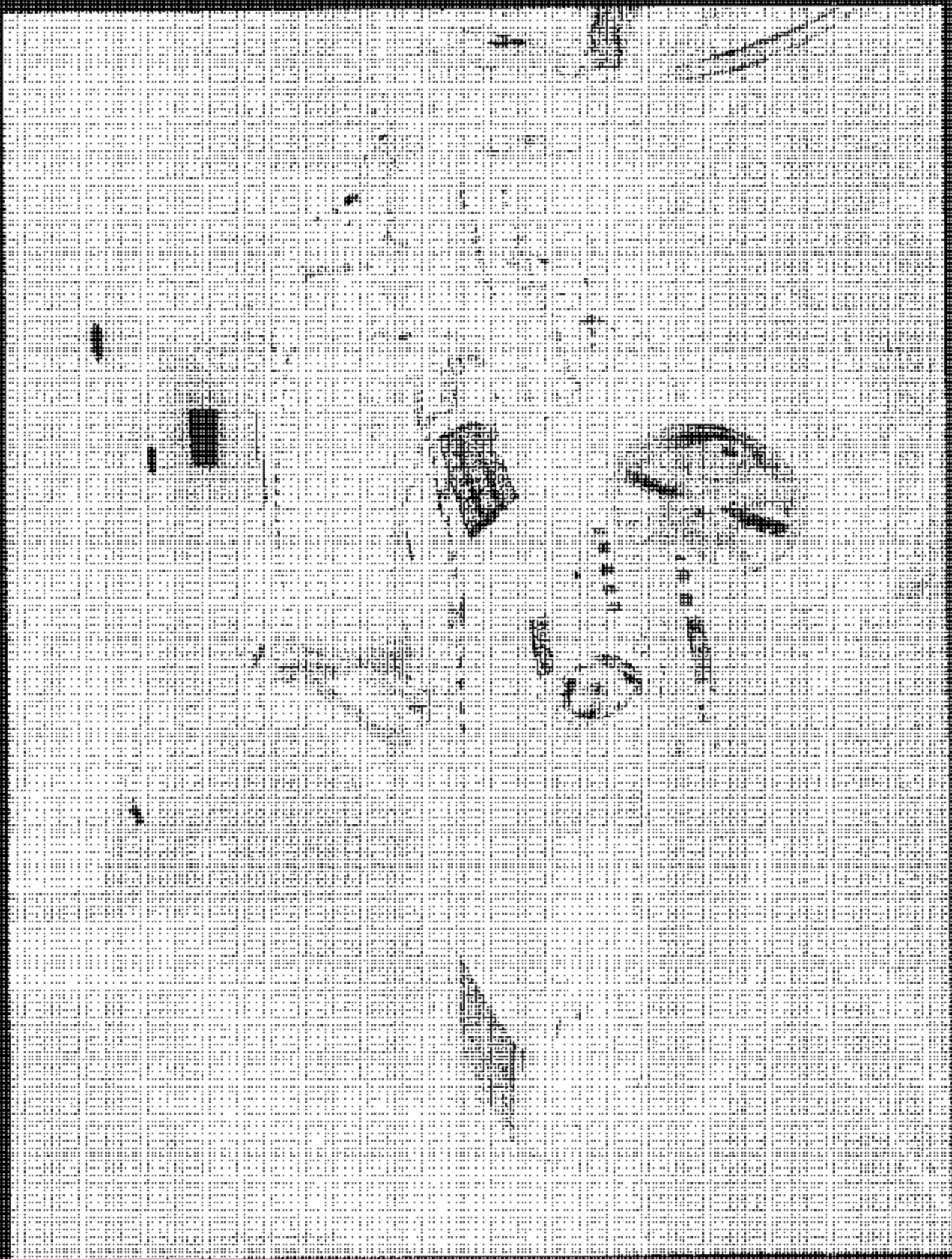


FIGURE A-8.2031-1051 FRONT VIEW OF TEST MEDIUM

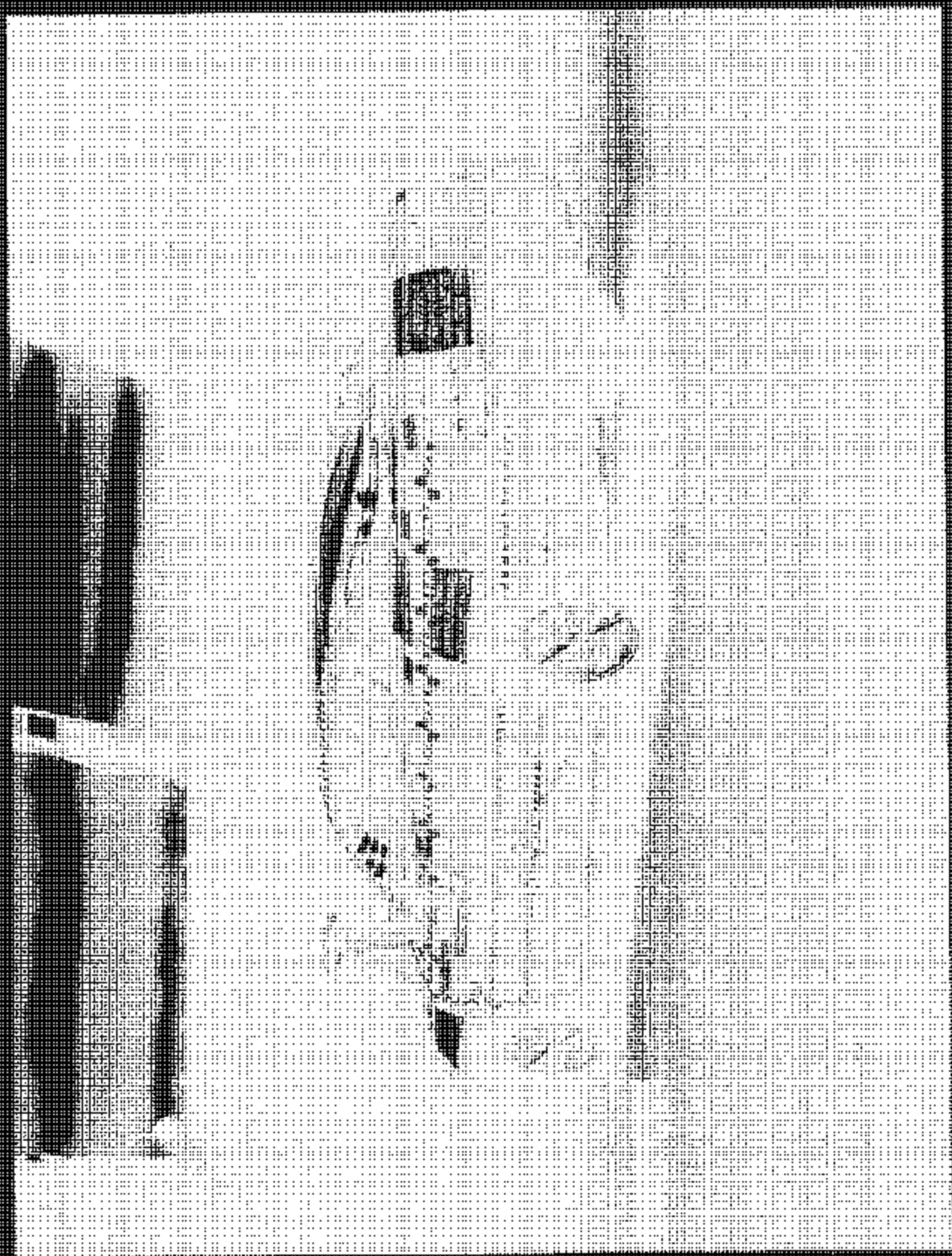


FIGURE 10-15: LEFT REAR VIEW OF TEST VEHICLE

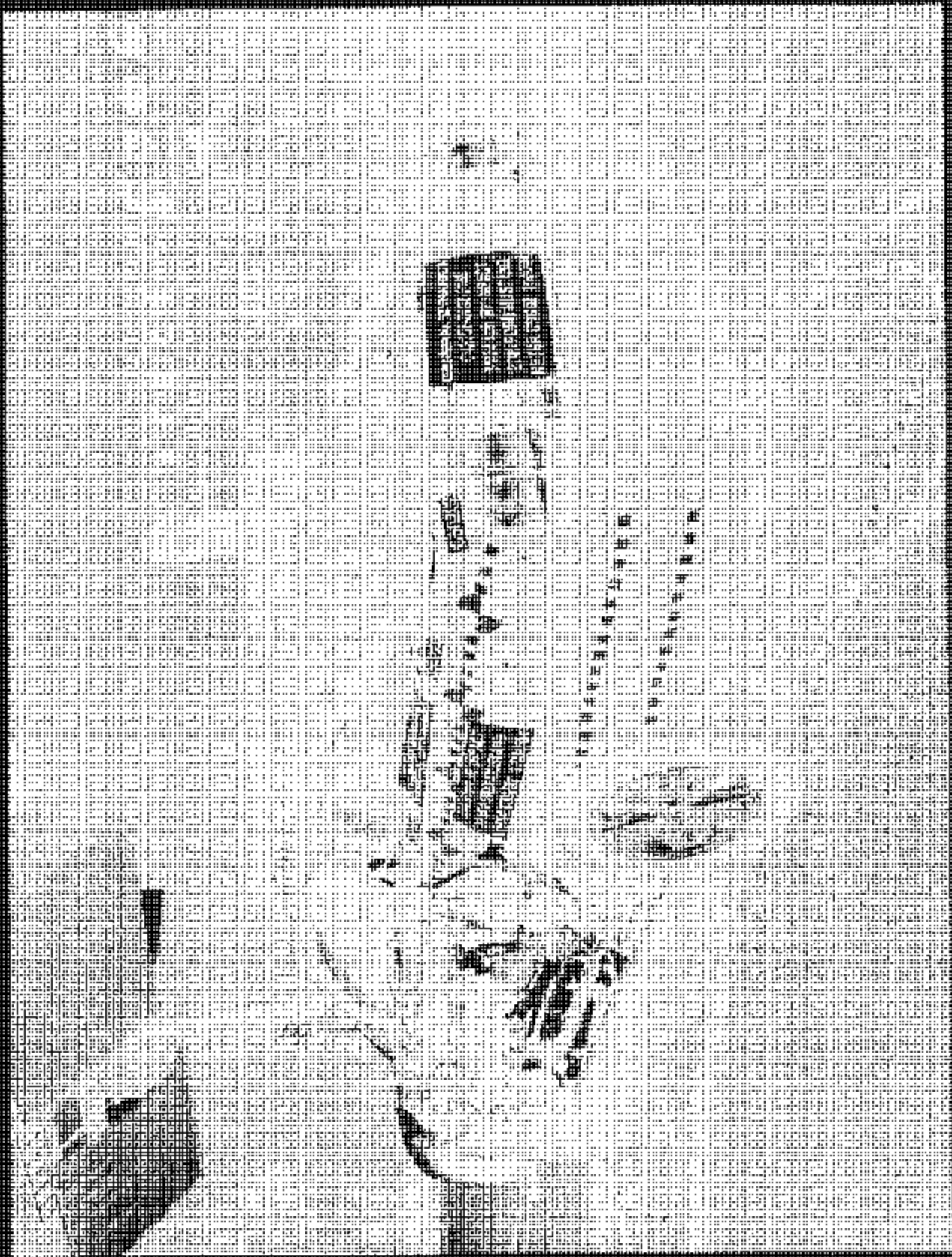


FIGURE A-10. POST-TEST LEFT REAR VIEW OF TEST VEHICLE

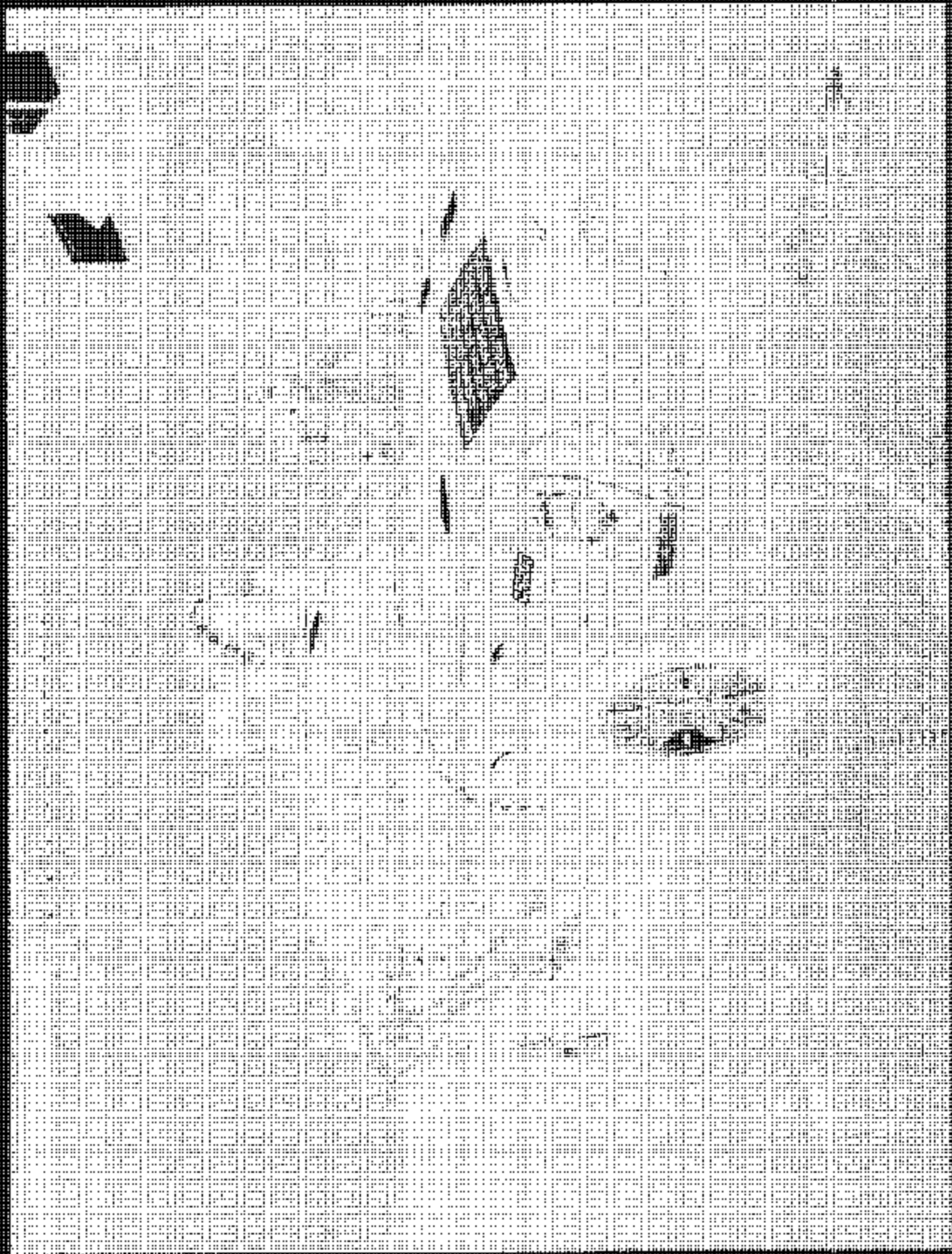
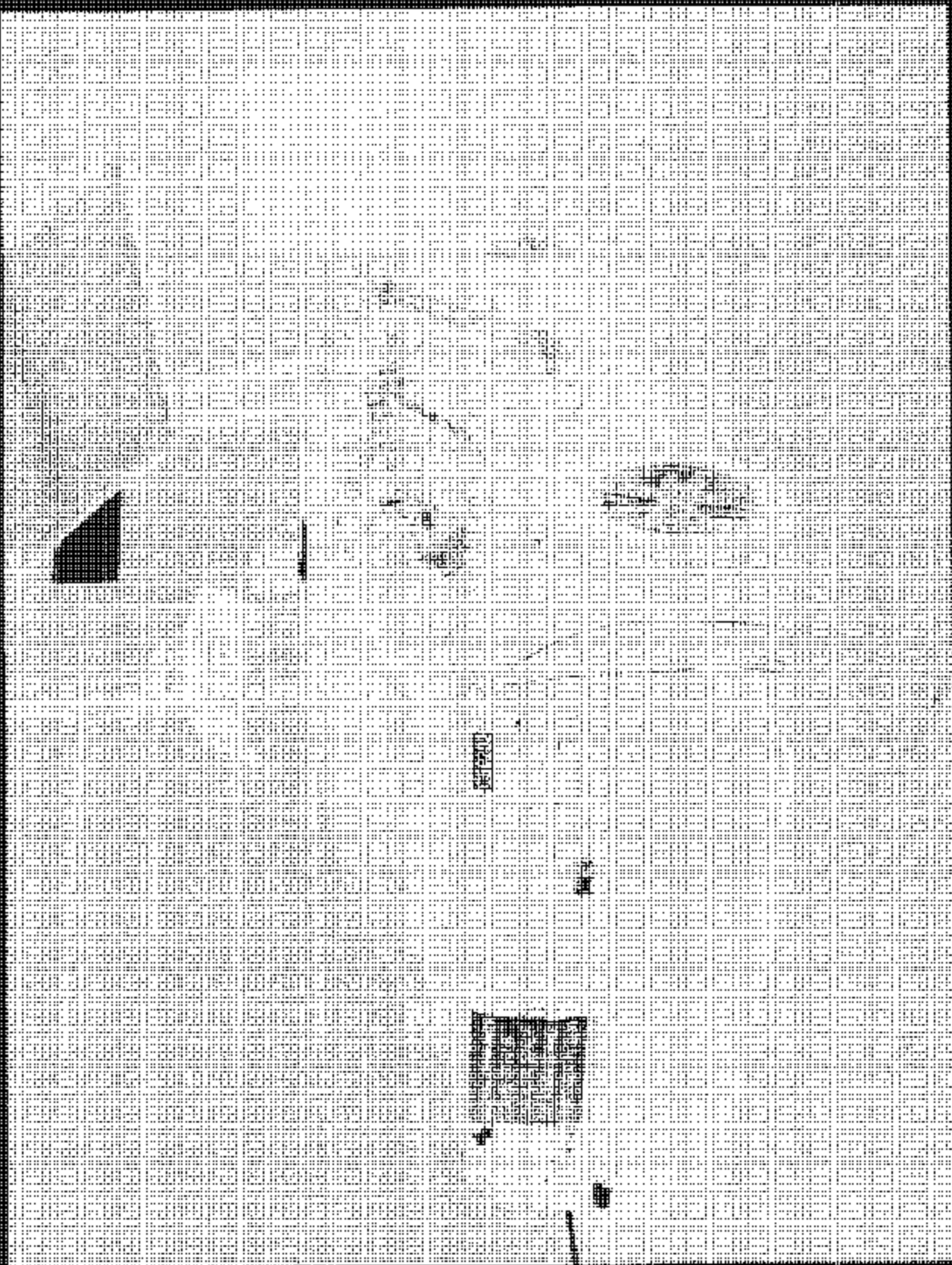


Figure A-11 DIRE-JESJ-031 FRONT VIEW OF TEST VEHICLE

PHOTOGRAPH IS NOT AVAILABLE

Figure A-12 POST-TEST RIGHT FRONT VIEW OF TEST VEHICLE

FIGURE A-13 PRE-TEST RIGHT REAR VIEW OF TEST VEHICLE



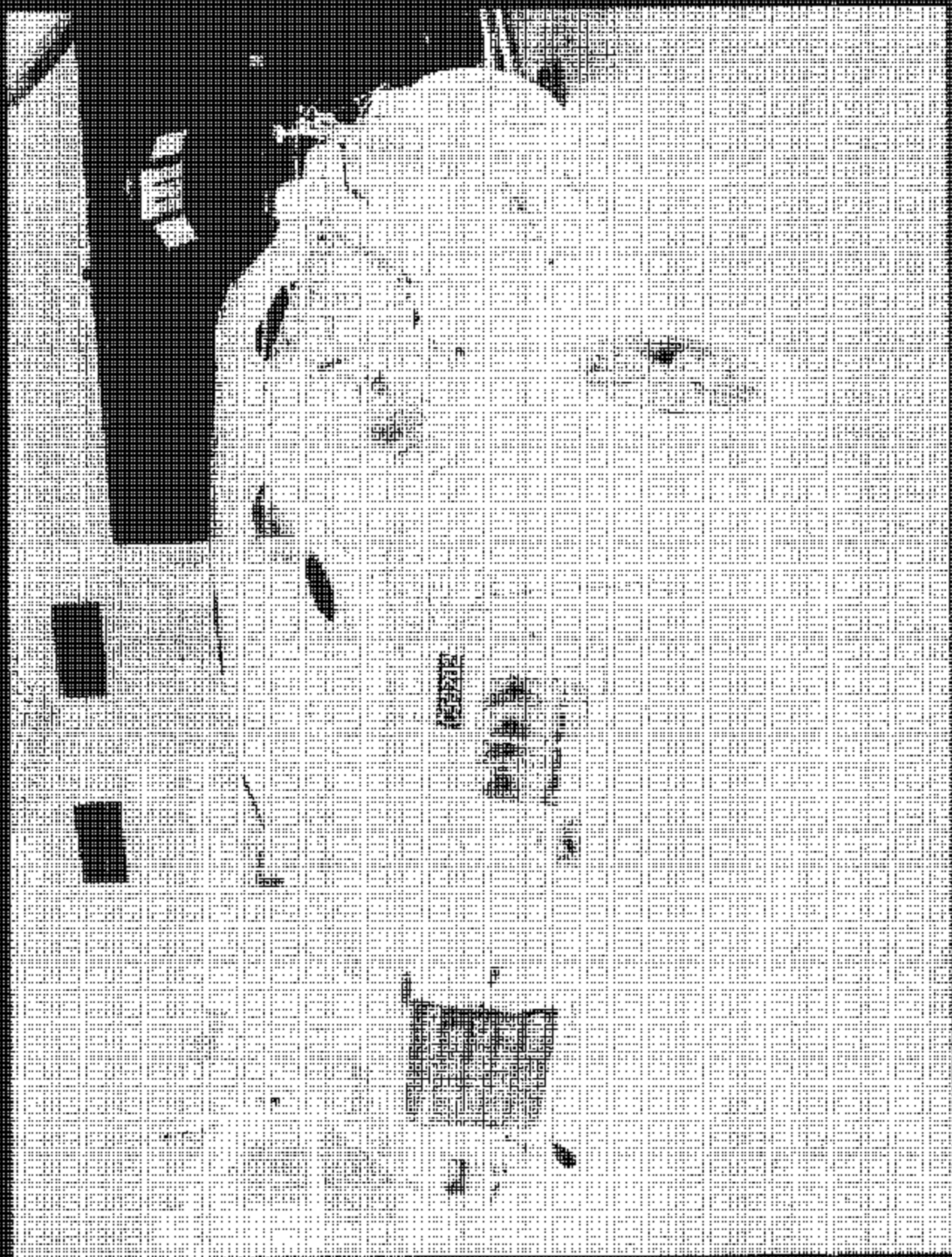


FIGURE 1. POST-TEST REAR VIEW OF TEST VEHICLE

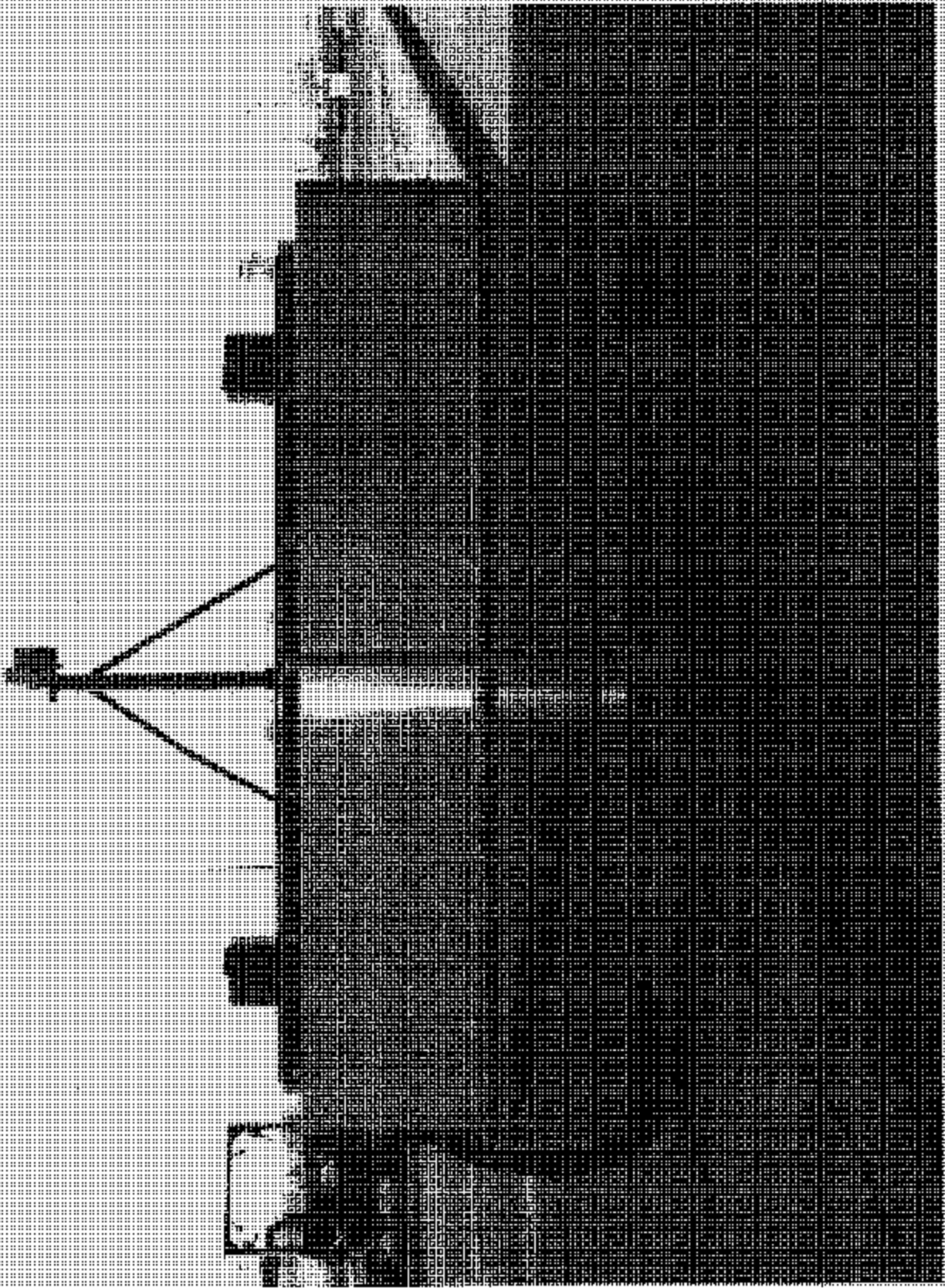


FIGURE A-15 PRE-TEST FRONTAL VIEW OF IMFACTOR FACE

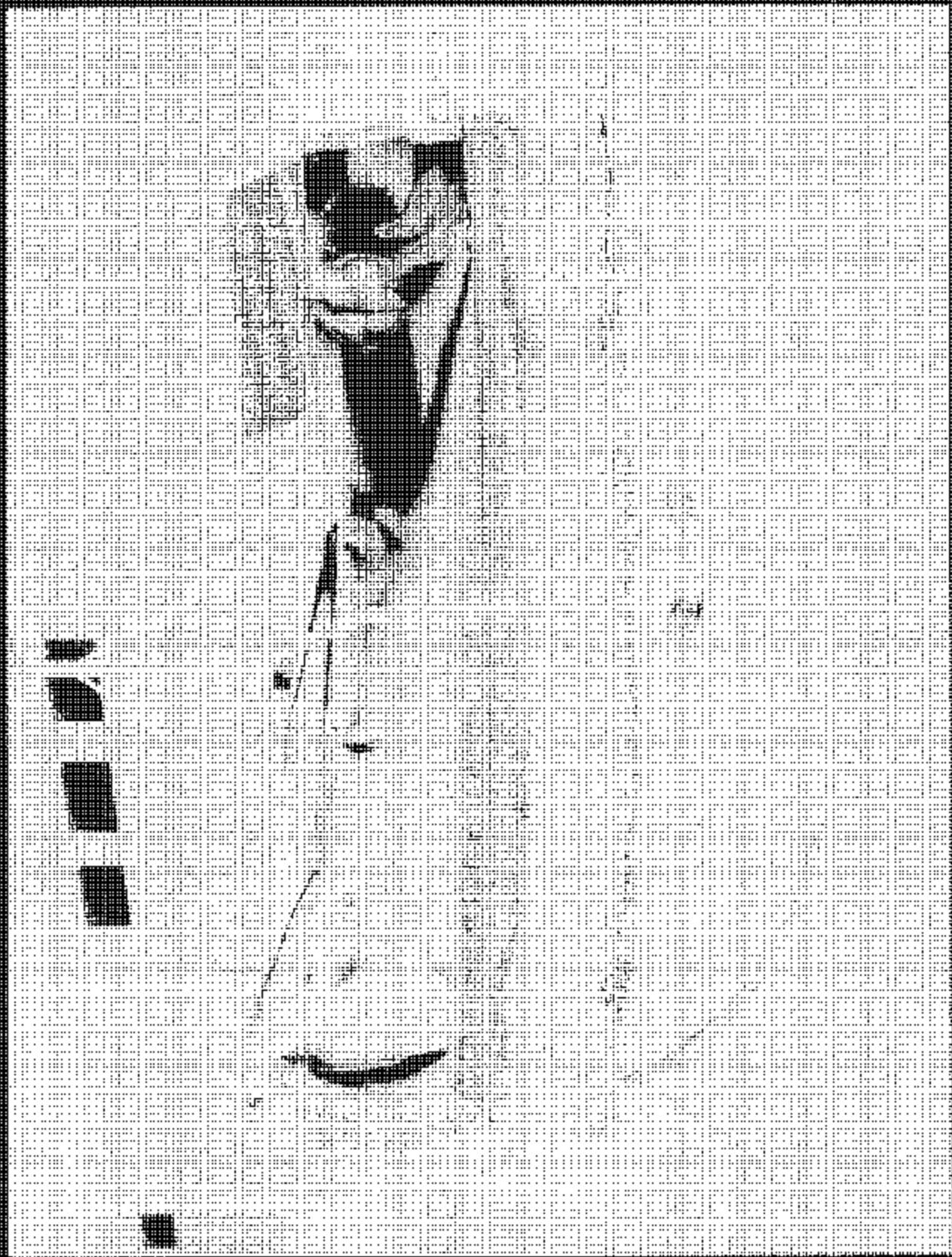
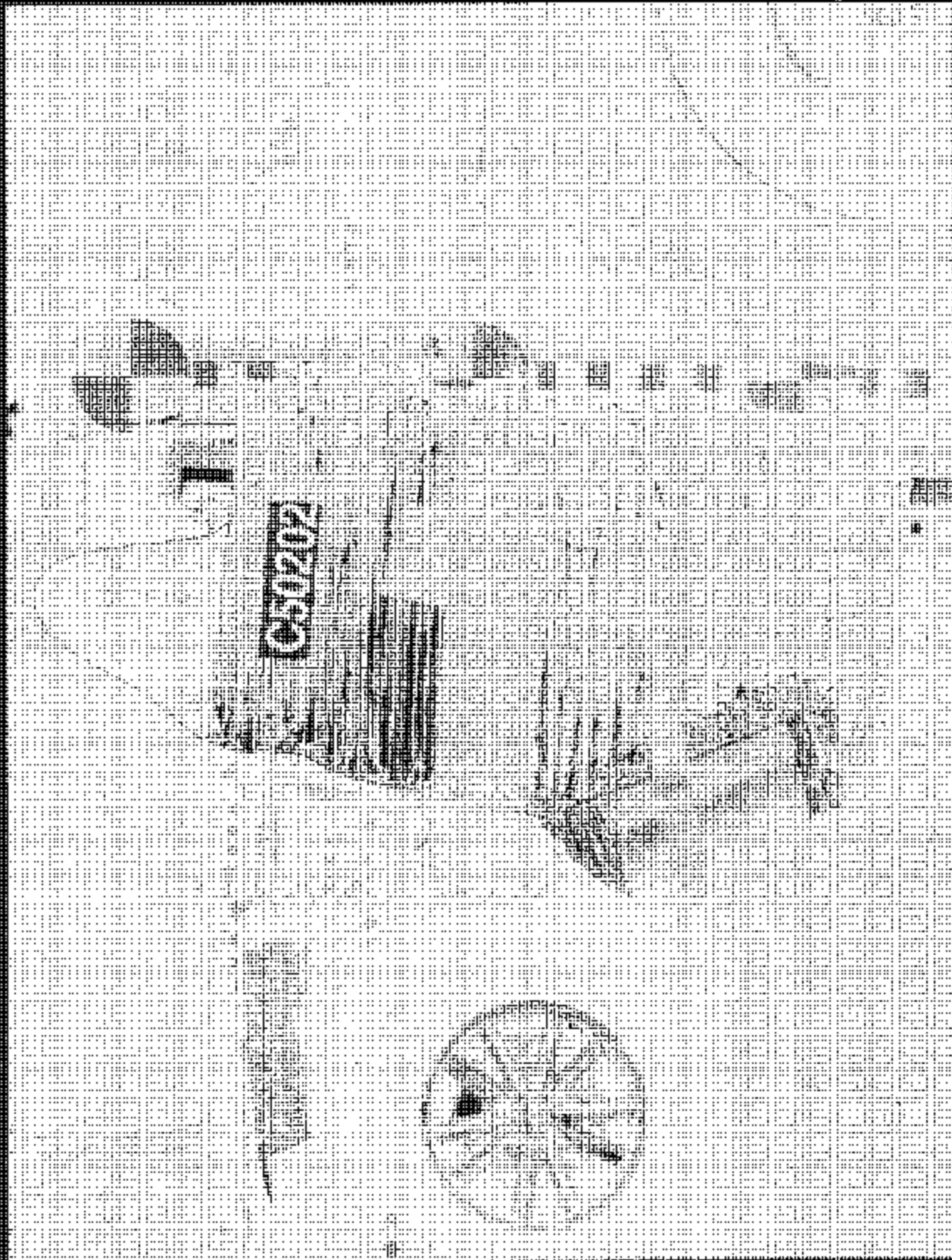


PHOTO IN THE POSTER SESSION PRESENTS A VIEW OF REACTION PAGE



FIGURE A-17 PRE-TEST LEFT SIDE VIEW OF IMPACTOR FACE



BURO-AS. RUS-HERS. (FF-5) U.S. AIR FORCE. (A-20)



FIGURE 19-11 RIGHT-SIDE VIEW OF BRACKET PAGES

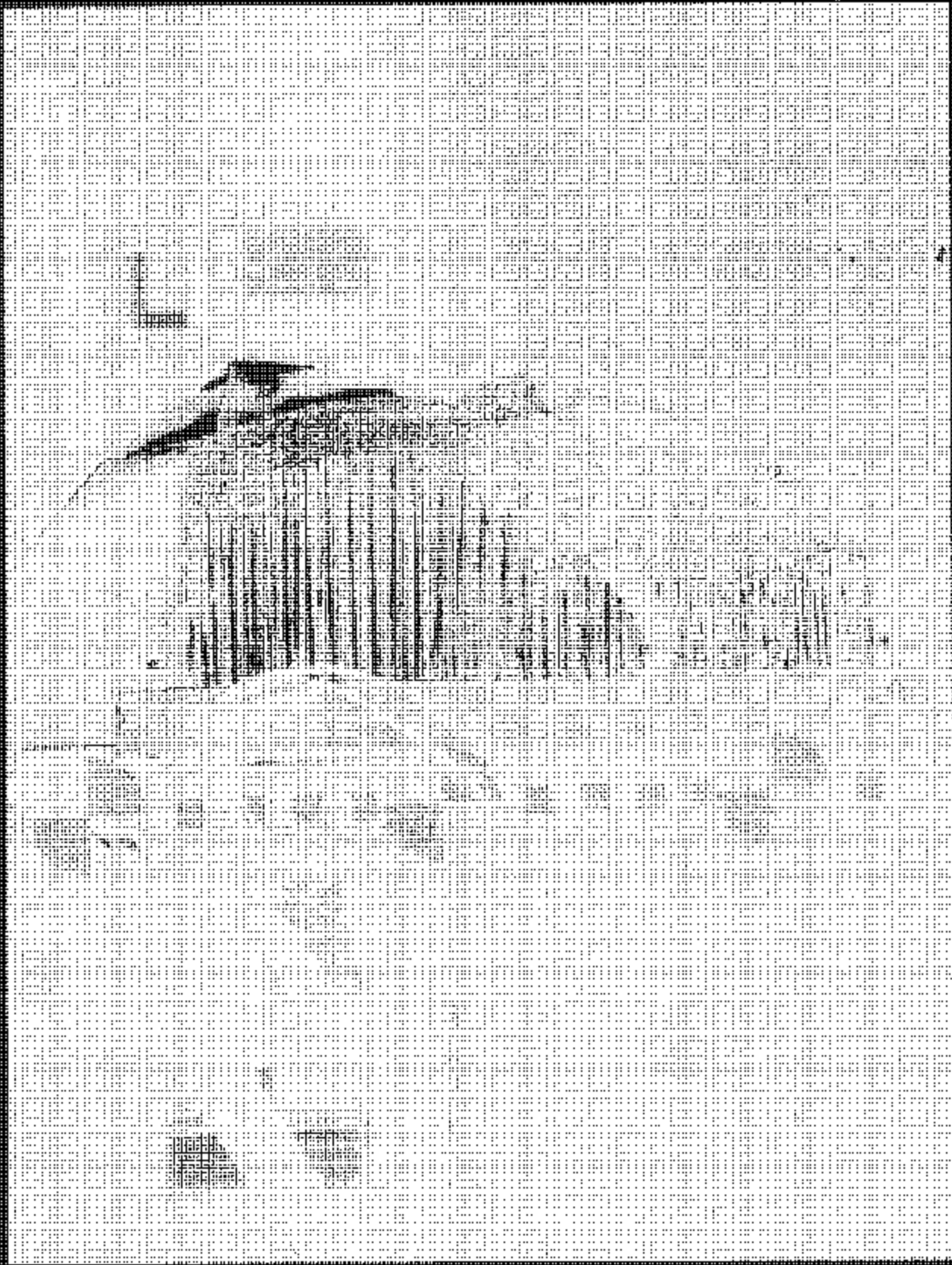


Figure 4-20 POS-LESJ RIGHT SIDE VIEW OF IMPACT RACE

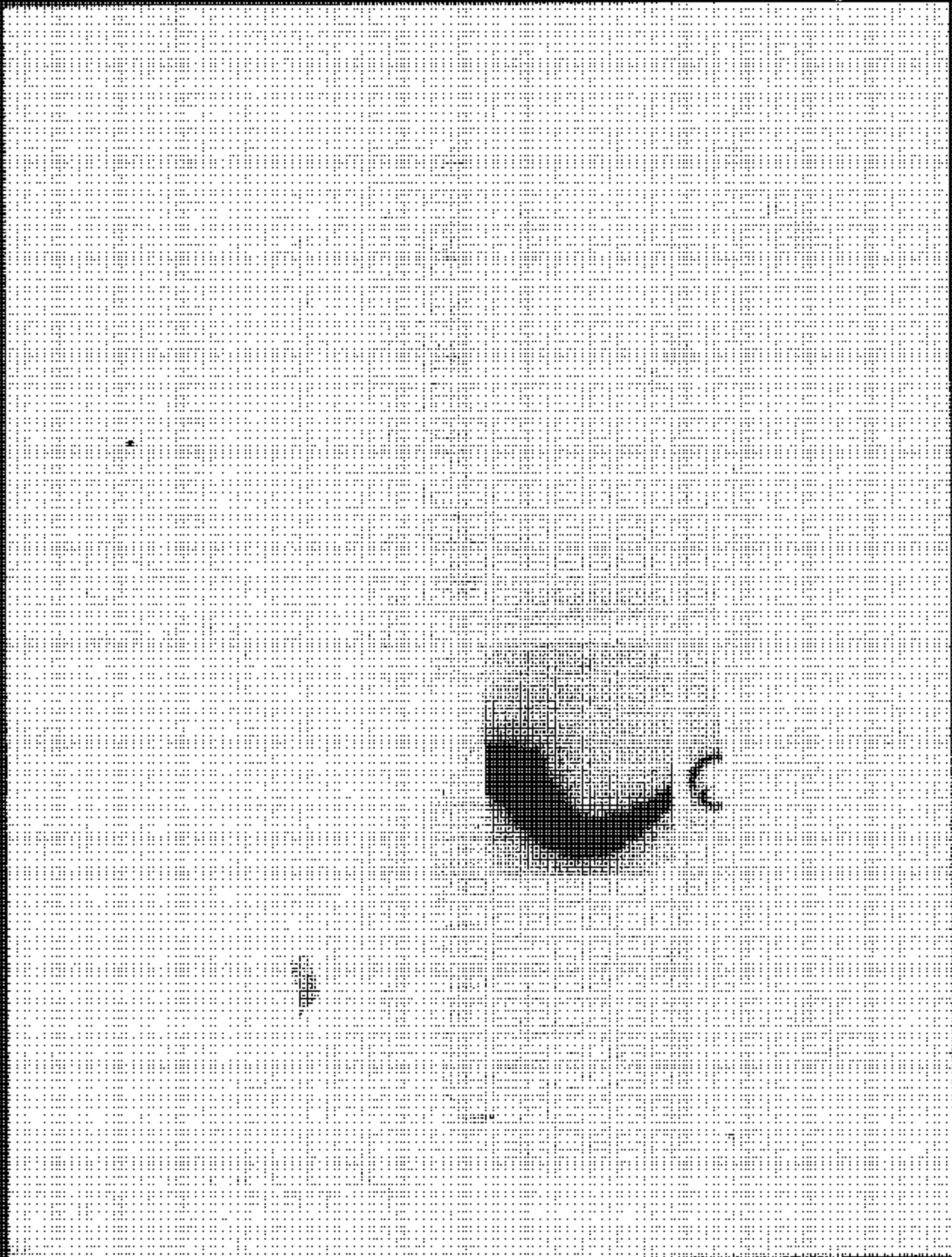
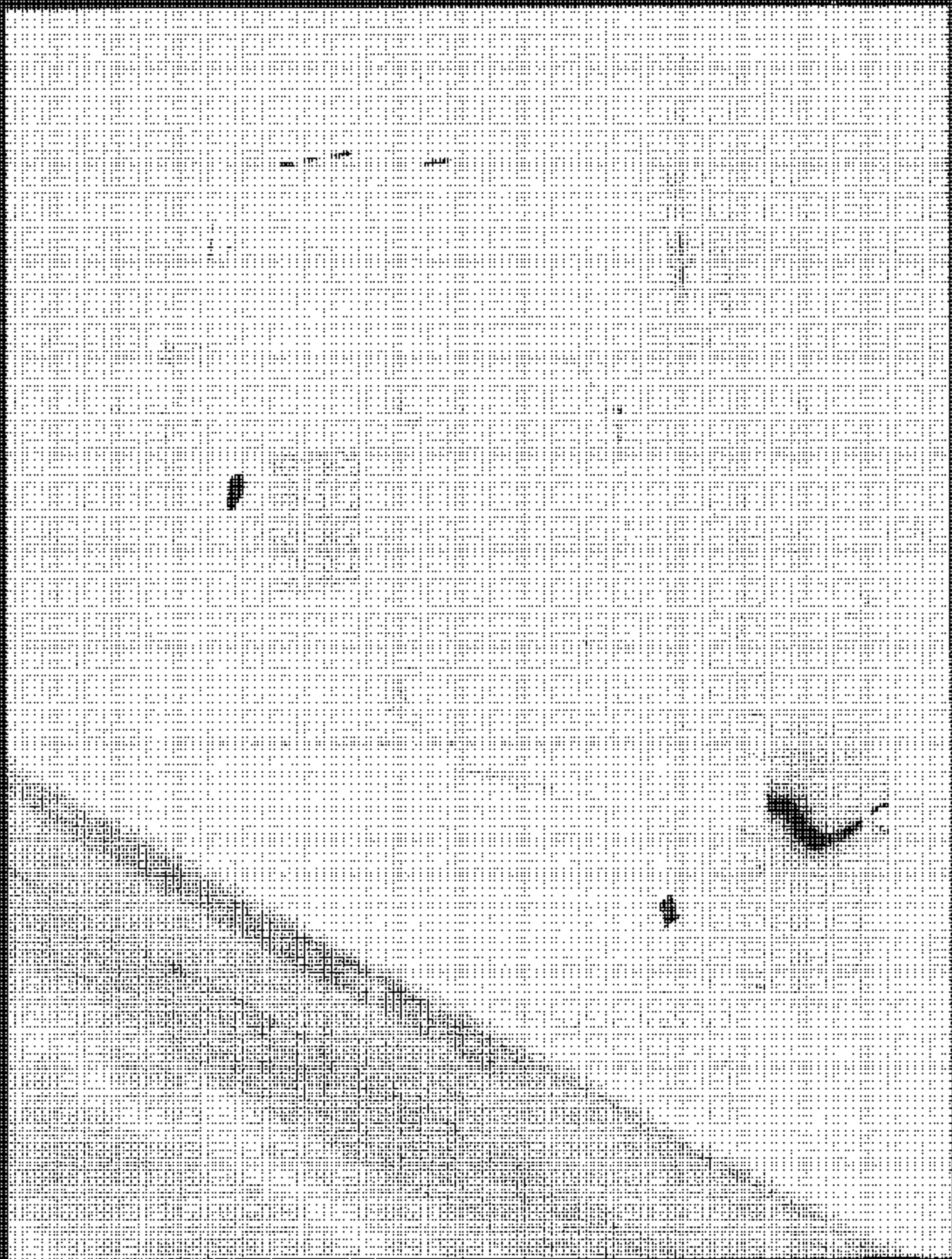


FIGURE A-21 PRE-TEST TOP VIEW OF INDUCTOR FACE



FIGURE 10-20 POST-HOLE TOP VIEW OF IMPACTOR FACE

FIGURE 1. THE TESTS OF HEAT TREAT OF ALUMINUM AND VOICE



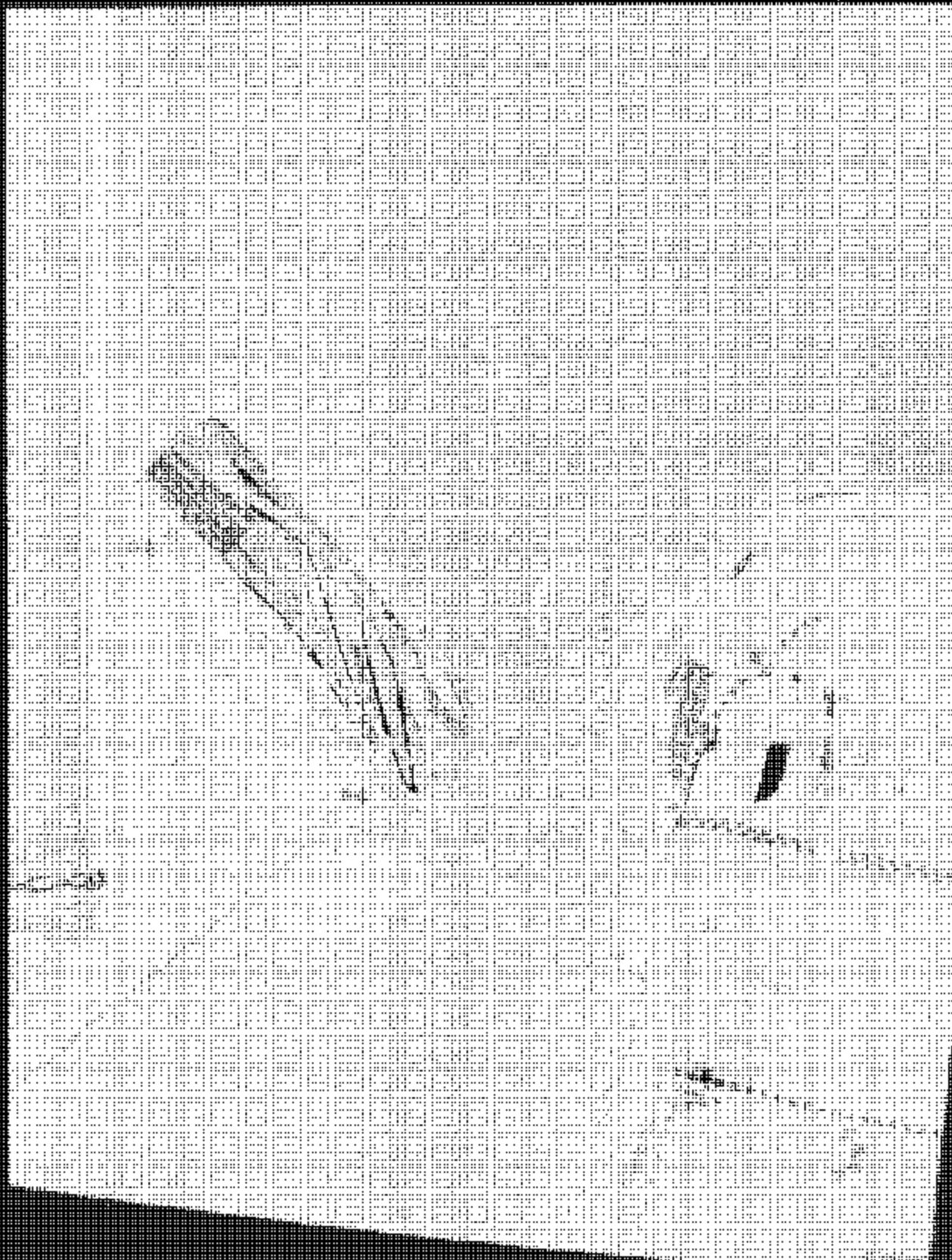
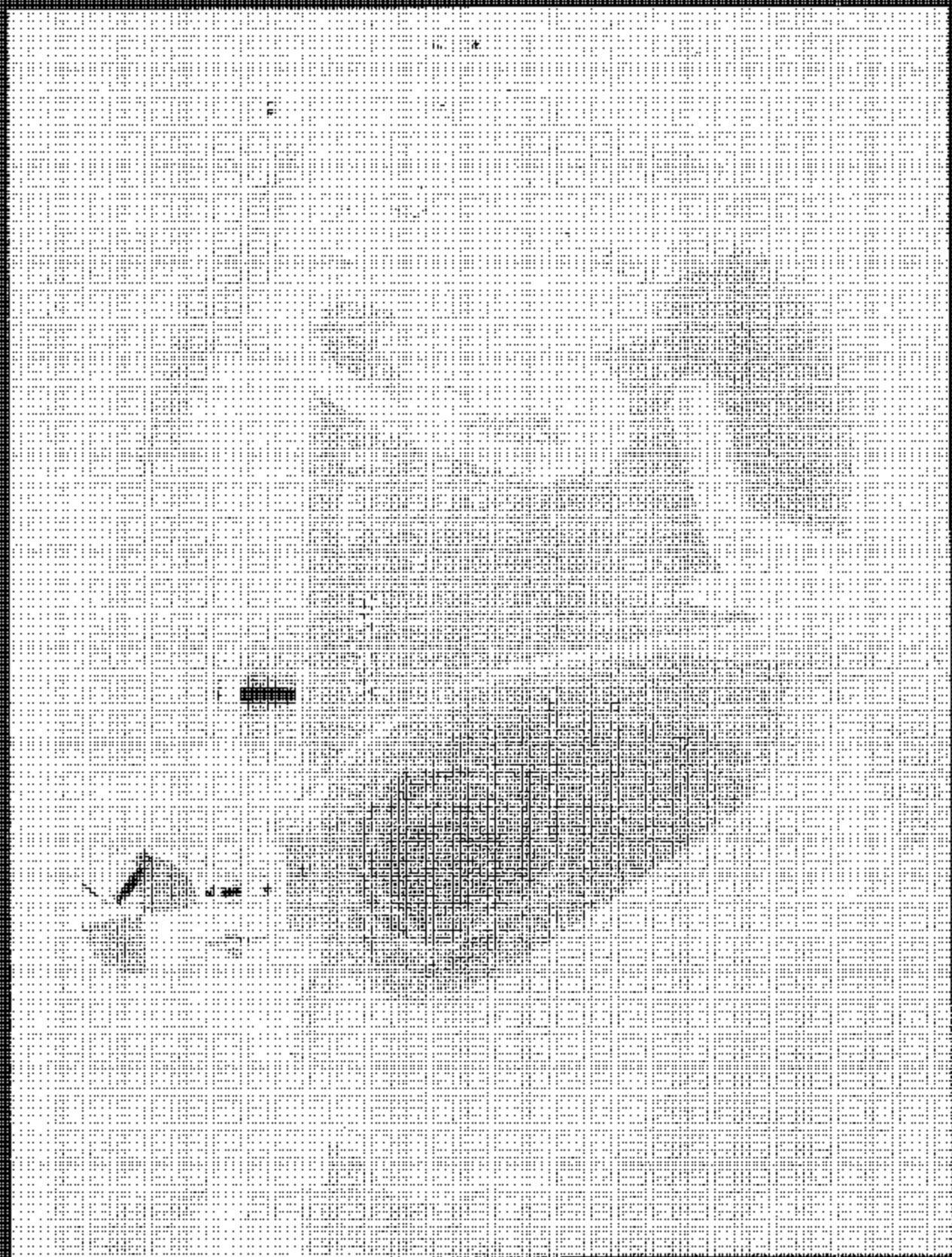


FIGURE 24. FIRST OVERHEAD VIEW OF ADB AND VEHICLE



EXPERIMENT TEST RIG OCCUPANT COMPARTMENT VIEW OF FRONT SIDE



Figure A-20 POSTAL DISTRICT COEFFICIENT COMPARISON VIEW OF FRONT SIDE 115

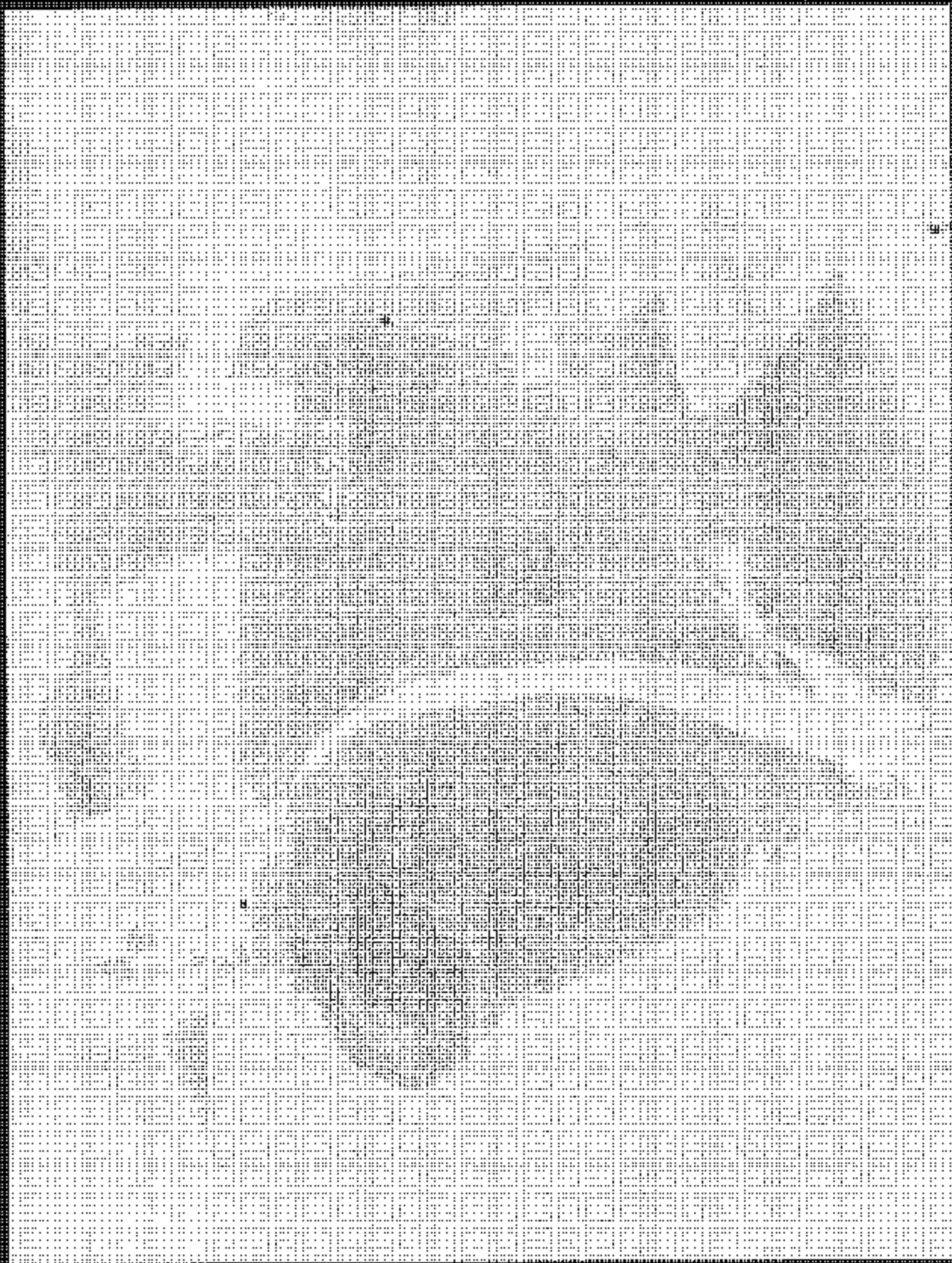


FIGURE A-27 PRE-TEST RIGHT OCCUPANT COMPARTMENT VIEW OF RINK 51141

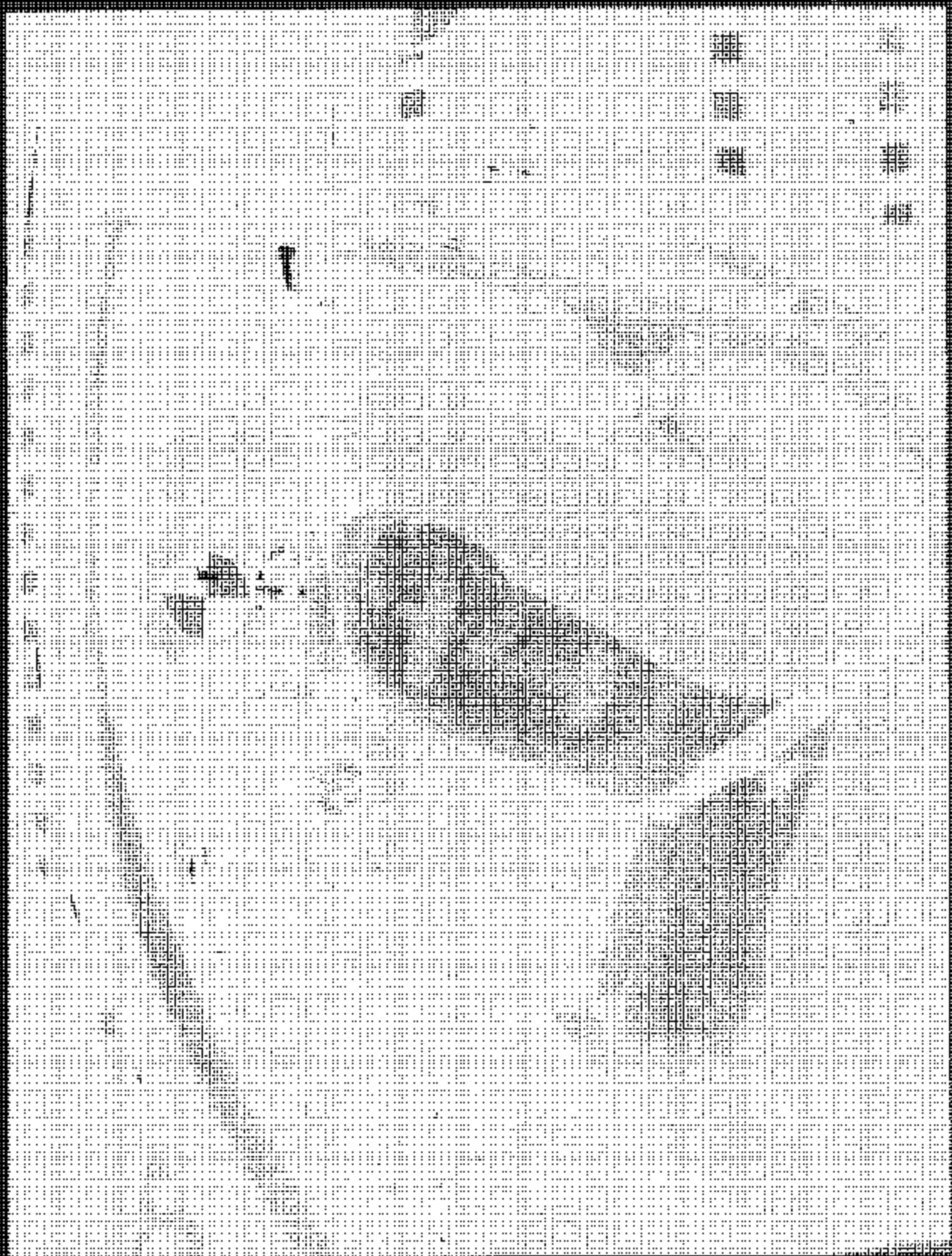


FIGURE 2. AIRCRAFT PHOTOGRAPHY OF FRONTIER AREA

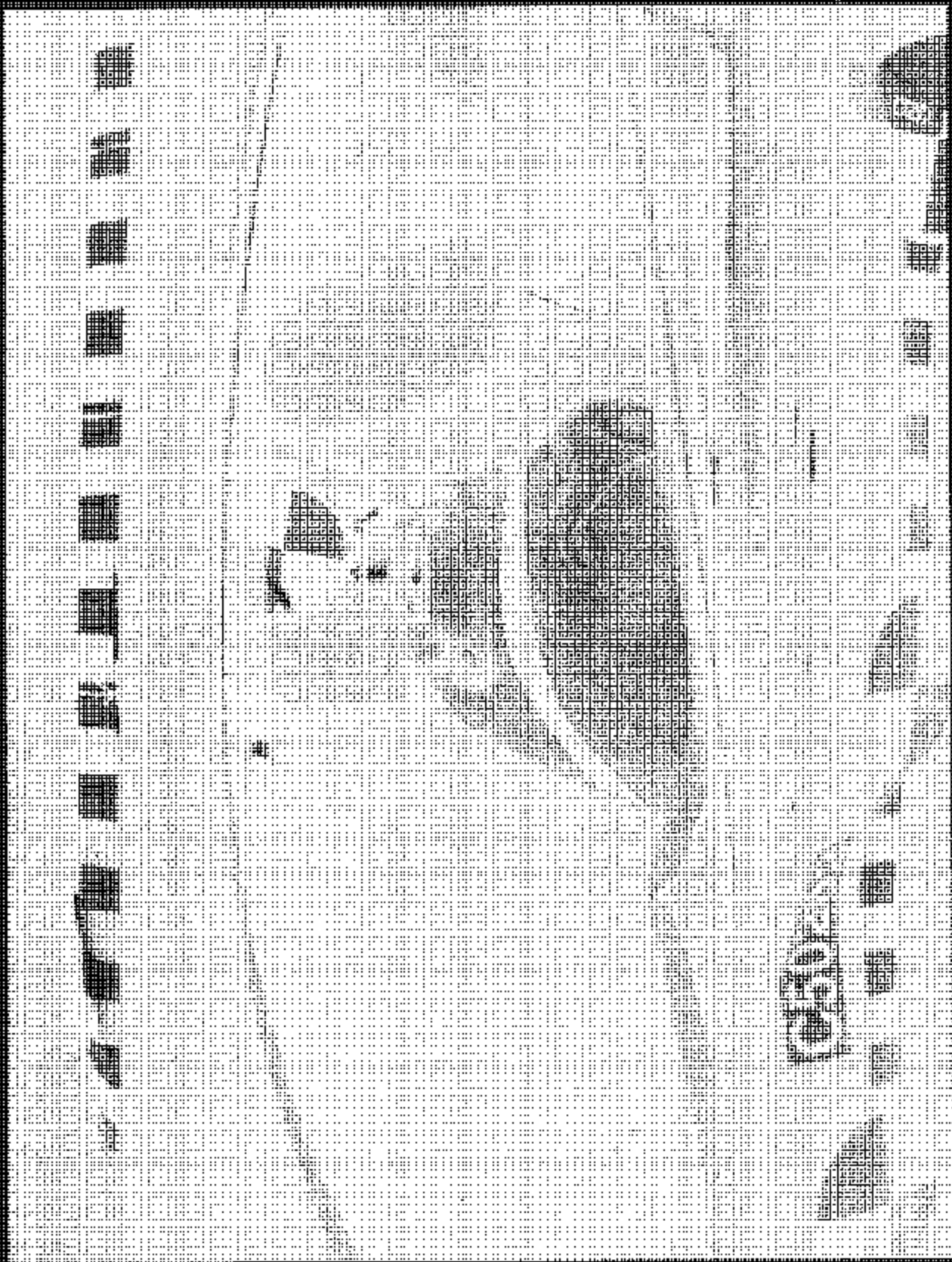


FIG. 1.30. KOSI TEST LET CIRCULAR COMPARTMENT VIEW OF FRONT SIDES

CAIRO
GENERAL

050202

55/28 kph
ADDF EOD

FOR A REFERENCE DOCUMENT FOR PARMENT VIEW OF FERRIDE

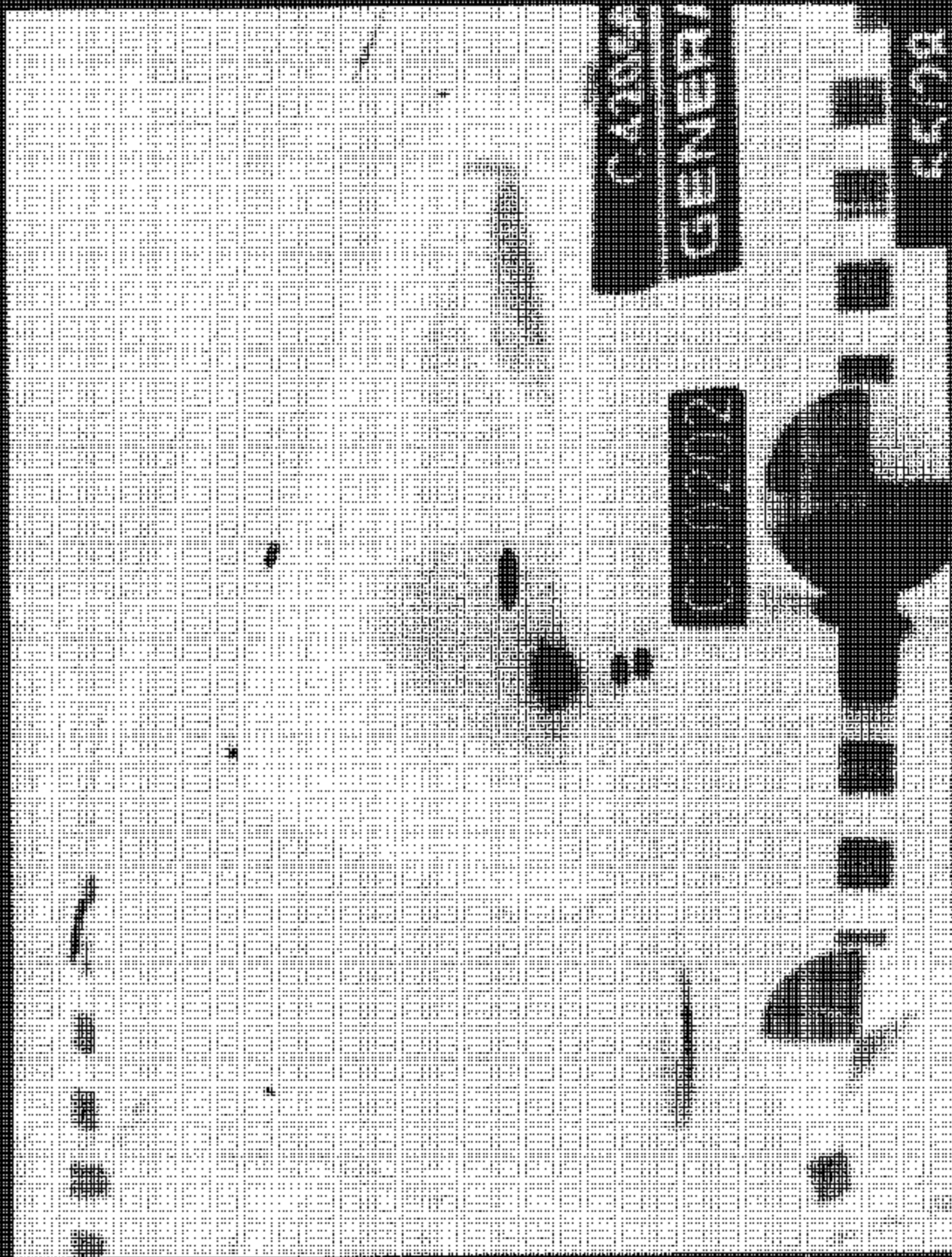


Figure A-22: POST-TEST LEFT OCCUPANT COMPARTMENT VIEW OF REAR SEAT



FIGURE A-33. SERIAL 5111 (MIRKINS) OF FRONT DOOR



Fig. A-34 POST-TEST INTERIOR OF KONTI CORE SHOWING SPLIT AND CLOSURES



FIGURE 3-35 PREDICTED ERROR OF REAR VIEW PANEL

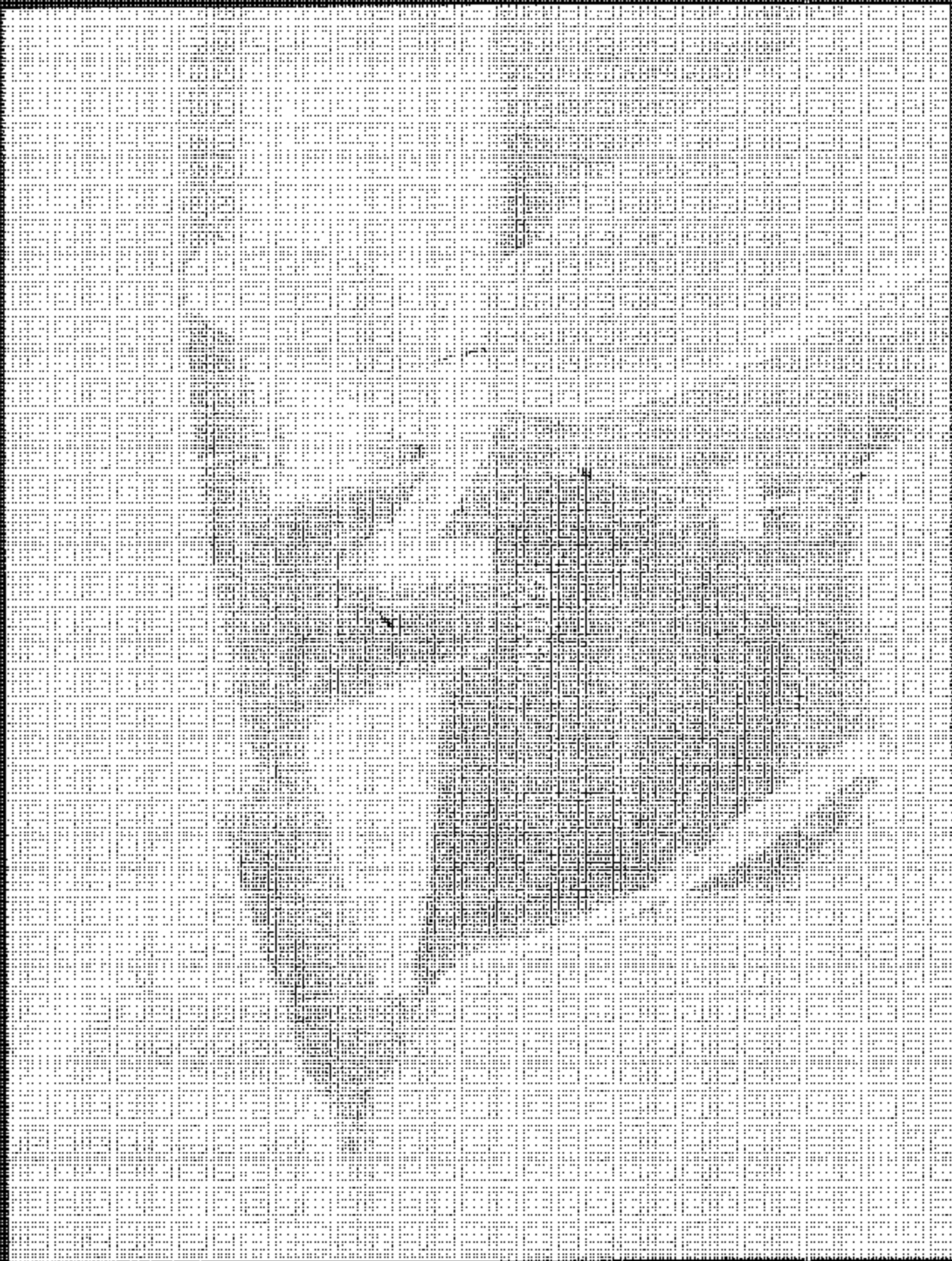


FIGURE 2. POSITIVE INTERIOR OF REAR FRAME PANEL SHOWING SIZES AND IMPACT LOCATIONS

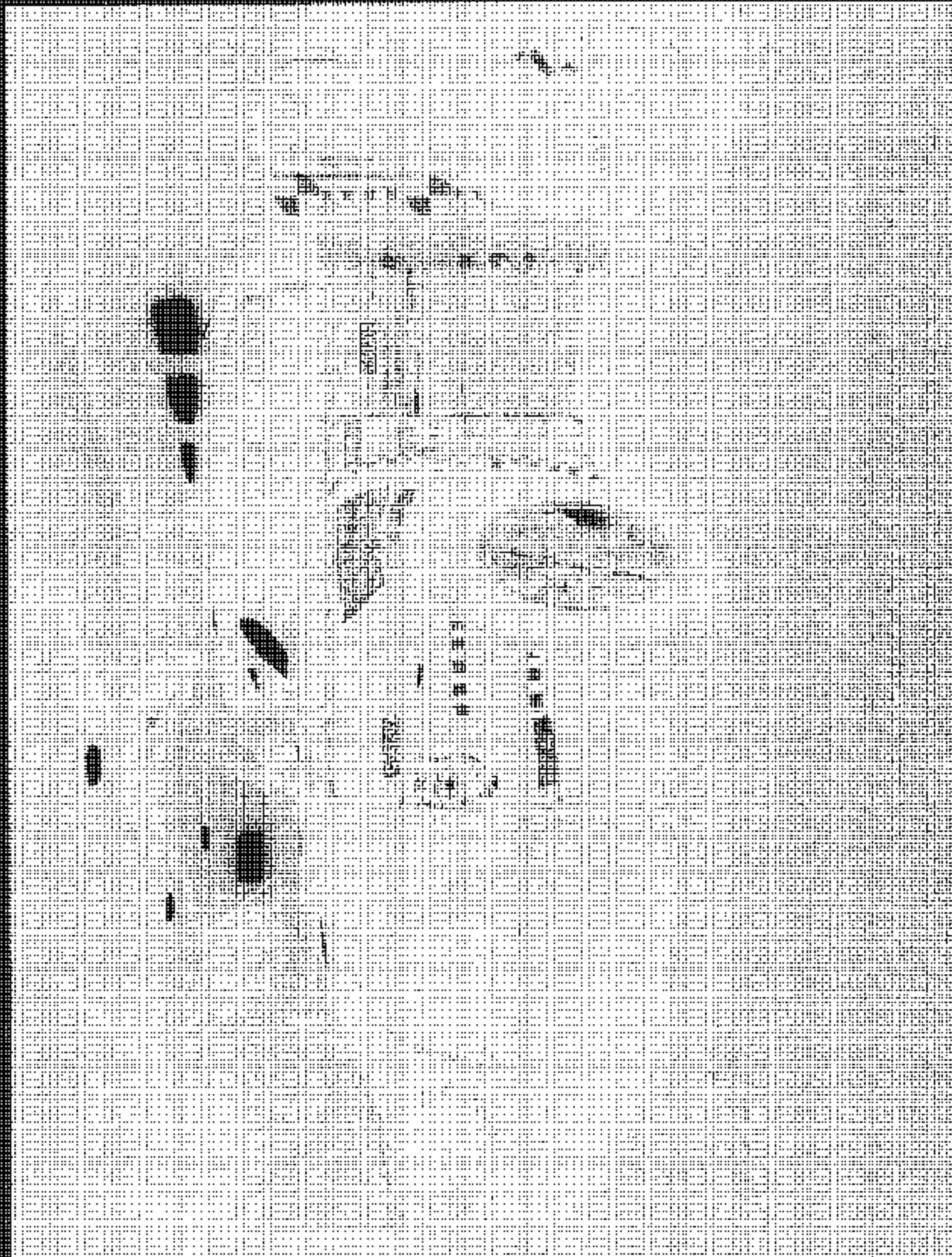


FIGURE 1-37 PIP-TEST TEST SHEET WITH THE PIP-TEST MACHINE DESIGN

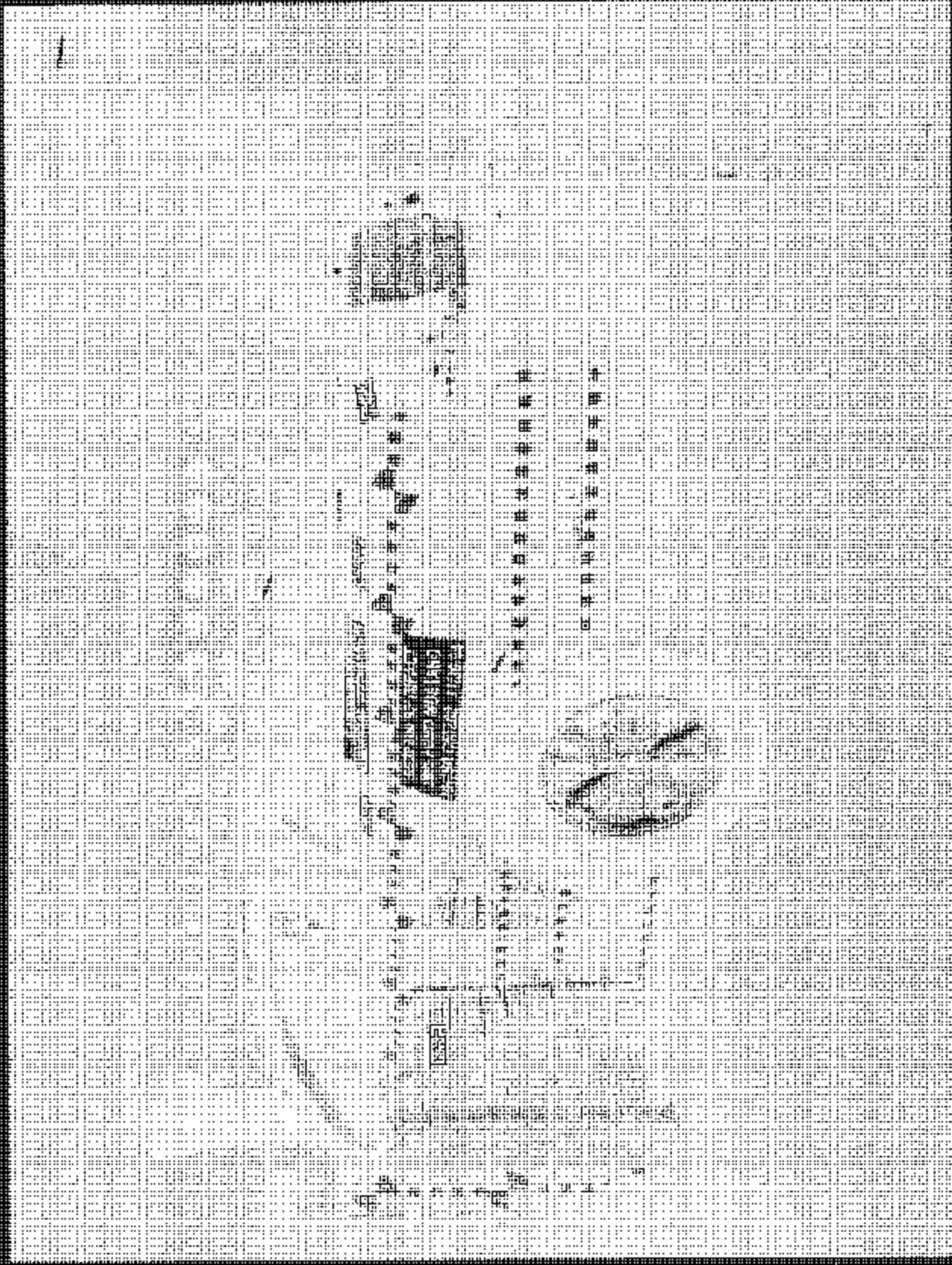
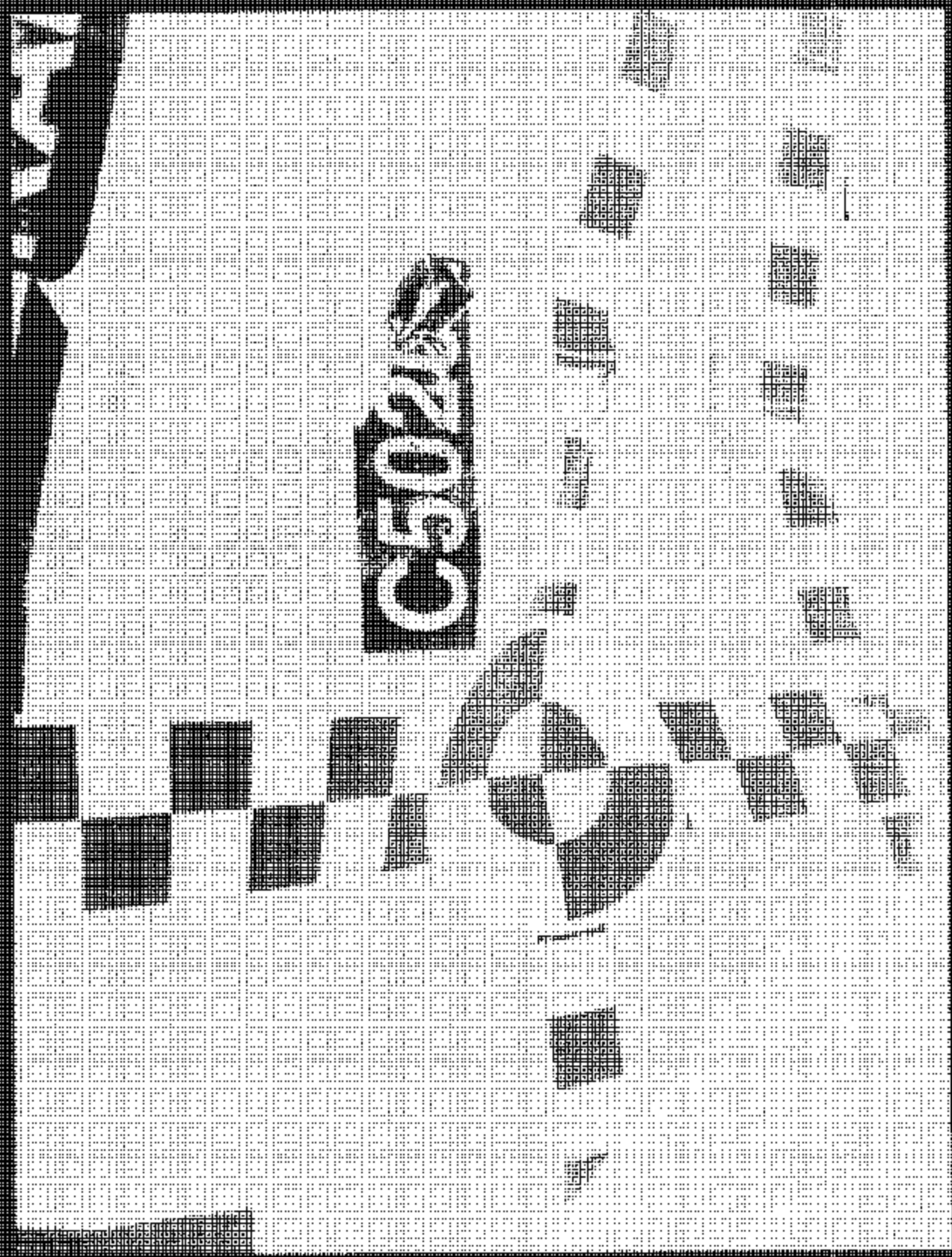


FIGURE 1 AND FIGURE 2 ARE WITH SHEET VIEW OF ADB VIEW IMPACTOR EACH IN POSITION



SHARP AND NEAREST BLOCKS UP WITH ONE IN PLACE POINT TARGET

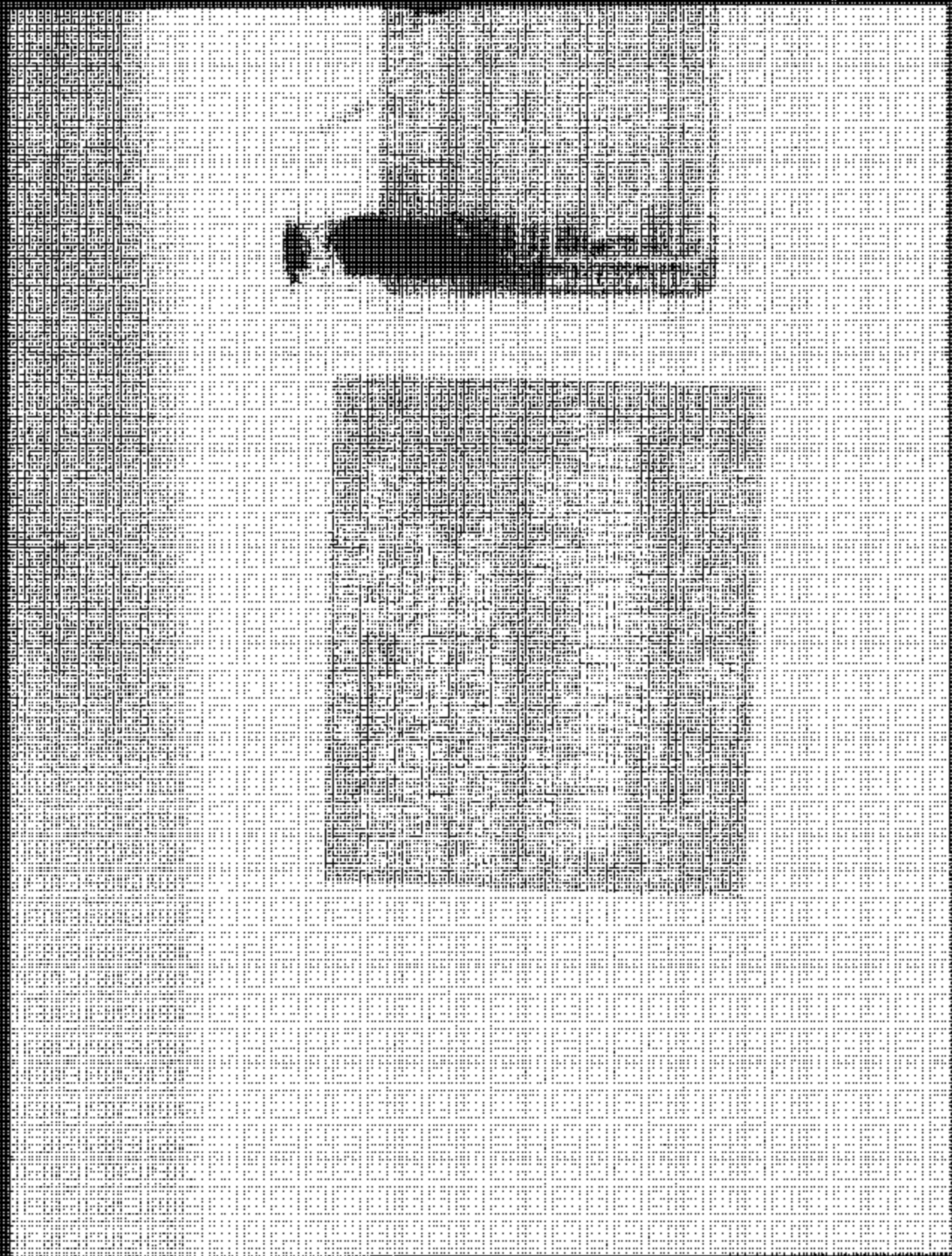


Figure 1. Close-up view of vehicle's generation table.

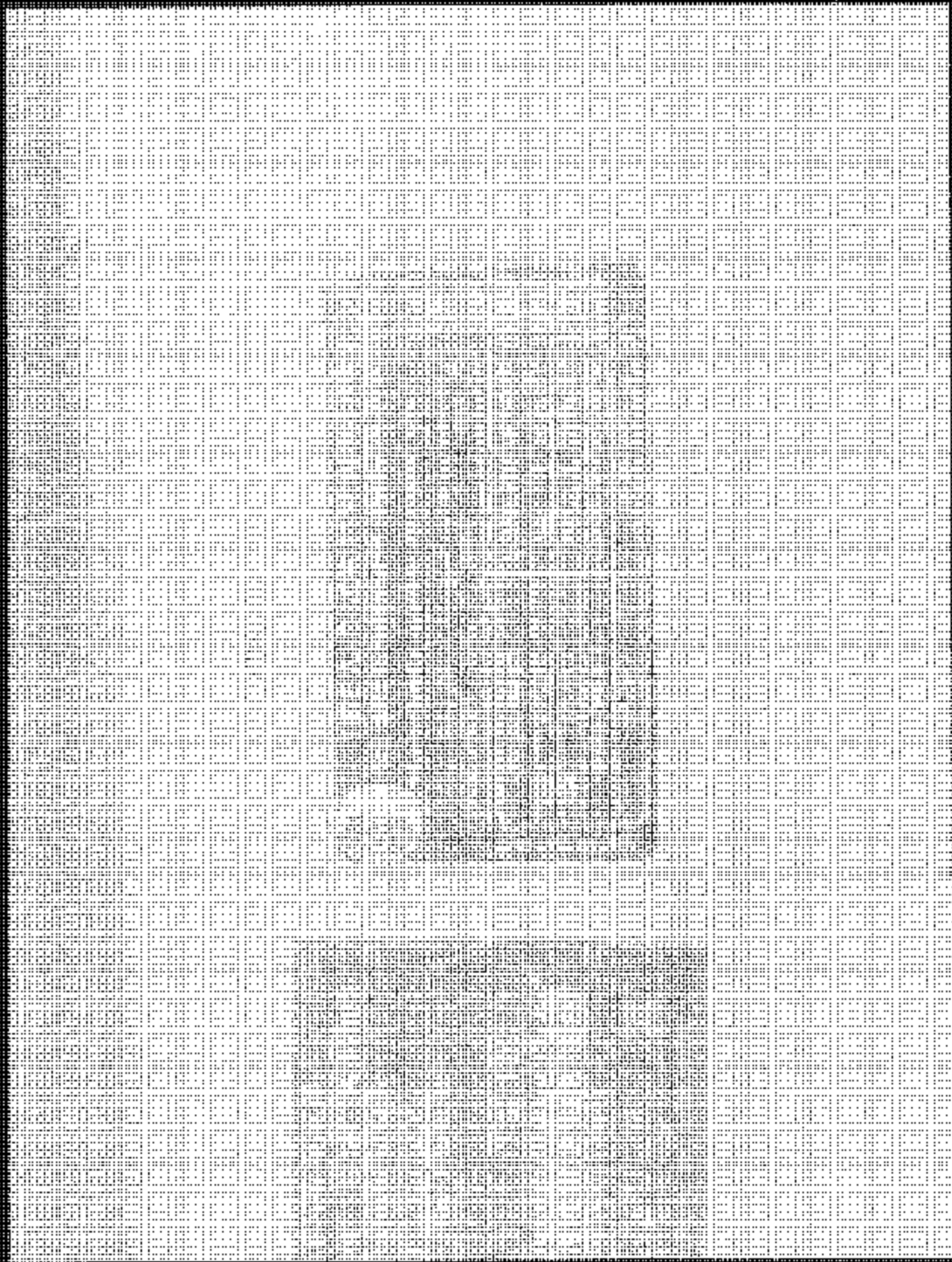


Figure A-11 CLOSE-UP VIEW OF CHARACTERS FROM MICROFILM LABEL



FIGURE 4-42 IMPACT MICRO

| DATE | DESCRIPTION | AMOUNT | BALANCE |
|------------|-----------------|--------|---------|
| 1950-01-01 | OPENING BALANCE | 100.00 | 100.00 |
| 1950-01-15 | PAYROLL | 50.00 | 50.00 |
| 1950-02-01 | RENT | 25.00 | 25.00 |
| 1950-02-15 | UTILITIES | 15.00 | 10.00 |
| 1950-03-01 | SALES | 75.00 | 85.00 |
| 1950-03-15 | PAYROLL | 50.00 | 35.00 |
| 1950-04-01 | RENT | 25.00 | 10.00 |
| 1950-04-15 | UTILITIES | 15.00 | (5.00) |
| 1950-05-01 | SALES | 80.00 | 75.00 |
| 1950-05-15 | PAYROLL | 50.00 | 25.00 |
| 1950-06-01 | RENT | 25.00 | 0.00 |
| 1950-06-15 | UTILITIES | 15.00 | (15.00) |
| 1950-07-01 | SALES | 90.00 | 75.00 |
| 1950-07-15 | PAYROLL | 50.00 | 25.00 |
| 1950-08-01 | RENT | 25.00 | 0.00 |
| 1950-08-15 | UTILITIES | 15.00 | (15.00) |
| 1950-09-01 | SALES | 100.00 | 100.00 |
| 1950-09-15 | PAYROLL | 50.00 | 50.00 |
| 1950-10-01 | RENT | 25.00 | 25.00 |
| 1950-10-15 | UTILITIES | 15.00 | 10.00 |
| 1950-11-01 | SALES | 110.00 | 120.00 |
| 1950-11-15 | PAYROLL | 50.00 | 70.00 |
| 1950-12-01 | RENT | 25.00 | 45.00 |
| 1950-12-15 | UTILITIES | 15.00 | 30.00 |
| 1951-01-01 | CLOSING BALANCE | | 30.00 |

STATE OF CALIFORNIA

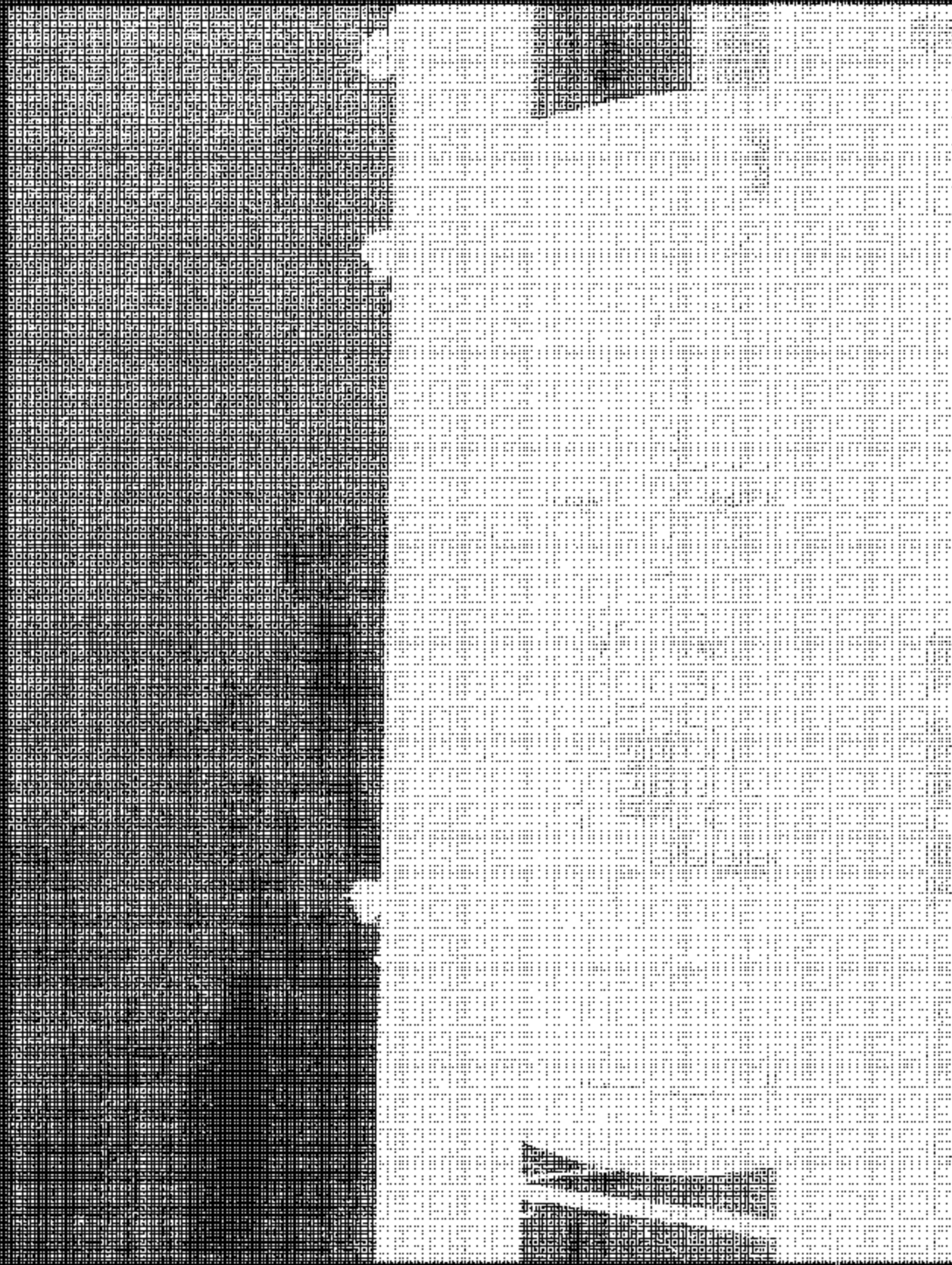


Figure 4-45 RECEIVED RECORDS



SECRET

APPENDIX A

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APPENDIX B

VEHICLE, MDB AND SID HYBRID III RESPONSE DATA

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| 15 | DRIVER UPPER NECK RESULTANT MOMENT VS TIME | B- 20 |
| 16 | DRIVER UPPER RIB (Y) ACCELERATION VS TIME | B- 21 |
| 17 | DRIVER UPPER RIB (Y) VELOCITY VS TIME | B- 22 |
| 18 | DRIVER LOWER RIB (Y) ACCELERATION VS TIME | B- 23 |
| 19 | DRIVER LOWER RIB (Y) VELOCITY VS TIME | B- 24 |
| 20 | DRIVER LOWER SPINE (Y) ACCELERATION VS TIME | B- 25 |
| 21 | DRIVER LOWER SPINE (Y) VELOCITY VS TIME | B- 26 |
| 22 | DRIVER PELVIC (Y) ACCELERATION VS TIME | B- 27 |
| 23 | DRIVER PELVIC (Y) VELOCITY VS TIME | B- 28 |
| 24 | PASSENGER HEAD (X) ACCELERATION VS TIME | B- 29 |
| 25 | PASSENGER HEAD (X) VELOCITY VS TIME | B- 30 |
| 26 | PASSENGER HEAD (Y) ACCELERATION VS TIME | B- 31 |
| 27 | PASSENGER HEAD (Y) VELOCITY VS TIME | B- 32 |
| 28 | PASSENGER HEAD (Z) ACCELERATION VS TIME | B- 33 |
| 29 | PASSENGER HEAD (Z) VELOCITY VS TIME | B- 34 |
| 30 | PASSENGER HEAD RESULTANT ACCELERATION VS TIME | B- 35 |
| 31 | PASSENGER UPPER NECK (X) FORCE VS TIME | B- 36 |
| 32 | PASSENGER UPPER NECK (Y) FORCE VS TIME | B- 37 |
| 33 | PASSENGER UPPER NECK (Z) FORCE VS TIME | B- 38 |
| 34 | PASSENGER UPPER NECK RESULTANT FORCE VS TIME | B- 39 |
| 35 | PASSENGER UPPER NECK (X) MOMENT VS TIME | B- 40 |
| 36 | PASSENGER UPPER NECK (Y) MOMENT VS TIME | B- 41 |
| 37 | PASSENGER UPPER NECK (Z) MOMENT VS TIME | B- 42 |
| 38 | PASSENGER UPPER NECK RESULTANT MOMENT VS TIME | B- 43 |
| 39 | PASSENGER UPPER RIB (Y) ACCELERATION VS TIME | B- 44 |
| 40 | PASSENGER UPPER RIB (Y) VELOCITY VS TIME | B- 45 |
| 41 | PASSENGER LOWER RIB (Y) ACCELERATION VS TIME | B- 46 |
| 42 | PASSENGER LOWER RIB (Y) VELOCITY VS TIME | B- 47 |
| 43 | PASSENGER LOWER SPINE (Y) ACCELERATION VS TIME | B- 48 |
| 44 | PASSENGER LOWER SPINE (Y) VELOCITY VS TIME | B- 49 |
| 45 | PASSENGER PELVIC (Y) ACCELERATION VS TIME | B- 50 |
| 46 | PASSENGER PELVIC (Y) VELOCITY VS TIME | B- 51 |

DRIVER & PASSENGER DUMMY INSTRUMENTATION PLOTS ACCELERATION DATA - FIR FILTERED

| Plot No. | Data Plot Title | Page |
|----------|--|-------|
| 47 | DRIVER UPPER RIB (Y) ACCELERATION VS TIME | B- 52 |
| 48 | DRIVER LOWER RIB (Y) ACCELERATION VS TIME | B- 53 |
| 49 | DRIVER LOWER SPINE (Y) ACCELERATION VS TIME | B- 54 |
| 50 | DRIVER PELVIC (Y) ACCELERATION VS TIME | B- 55 |
| 51 | PASSENGER UPPER RIB (Y) ACCELERATION VS TIME | B- 56 |
| 52 | PASSENGER LOWER RIB (Y) ACCELERATION VS TIME | B- 57 |
| 53 | PASSENGER LOWER SPINE (Y) ACCELERATION VS TIME | B- 58 |
| 54 | PASSENGER PELVIC (Y) ACCELERATION VS TIME | B- 59 |

TEST VEHICLE INSTRUMENTATION PLOTS
ACCELERATION DATA - FILTER CLASS 60
INTEGRATION DATA - FILTER CLASS 180

| <u>Plot No.</u> | <u>Data Plot Title</u> | <u>Page</u> |
|-----------------|--|-------------|
| 55 | RIGHT SIDE SILL AT FRONT SEAT (X) ACCELERATION VS TIME | B- 60 |
| 56 | RIGHT SIDE SILL AT FRONT SEAT (X) VELOCITY VS TIME | B- 61 |
| 57 | RIGHT SIDE SILL AT FRONT SEAT (Y) ACCELERATION VS TIME | B- 62 |
| 58 | RIGHT SIDE SILL AT FRONT SEAT (Y) VELOCITY VS TIME | B- 63 |
| 59 | RIGHT SIDE SILL AT FRONT SEAT (Z) ACCELERATION VS TIME | B- 64 |
| 60 | RIGHT SIDE SILL AT FRONT SEAT (Z) VELOCITY VS TIME | B- 65 |
| 61 | RIGHT SIDE SILL AT FRONT SEAT RESULTANT ACCELERATION VS TIME | B- 66 |
| 62 | RIGHT SIDE SILL AT REAR SEAT (X) ACCELERATION VS TIME | B- 67 |
| 63 | RIGHT SIDE SILL AT REAR SEAT (X) VELOCITY VS TIME | B- 68 |
| 64 | RIGHT SIDE SILL AT REAR SEAT (Y) ACCELERATION VS TIME | B- 69 |
| 65 | RIGHT SIDE SILL AT REAR SEAT (Y) VELOCITY VS TIME | B- 70 |
| 66 | RIGHT SIDE SILL AT REAR SEAT (Z) ACCELERATION VS TIME | B- 71 |
| 67 | RIGHT SIDE SILL AT REAR SEAT (Z) VELOCITY VS TIME | B- 72 |
| 68 | RIGHT SIDE SILL AT REAR SEAT RESULTANT ACCELERATION VS TIME | B- 73 |
| 69 | REAR FLOORPAN ABOVE AXLE (X) ACCELERATION VS TIME | B- 74 |
| 70 | REAR FLOORPAN ABOVE AXLE (X) VELOCITY VS TIME | B- 75 |
| 71 | REAR FLOORPAN ABOVE AXLE (Y) ACCELERATION VS TIME | B- 76 |
| 72 | REAR FLOORPAN ABOVE AXLE (Y) VELOCITY VS TIME | B- 77 |
| 73 | REAR FLOORPAN ABOVE AXLE (Z) ACCELERATION VS TIME | B- 78 |
| 74 | REAR FLOORPAN ABOVE AXLE (Z) VELOCITY VS TIME | B- 79 |
| 75 | REAR FLOORPAN ABOVE AXLE RESULTANT ACCELERATION VS TIME | B- 80 |
| 76 | LEFT SIDE SILL AT REAR SEAT (Y) ACCELERATION VS TIME | B- 81 |
| 77 | LEFT SIDE SILL AT REAR SEAT (Y) VELOCITY VS TIME | B- 82 |
| 78 | LEFT SIDE SILL AT FRONT SEAT (Y) ACCELERATION VS TIME | B- 83 |
| 79 | LEFT SIDE SILL AT FRONT SEAT (Y) VELOCITY VS TIME | B- 84 |
| 80 | RIGHT REAR OCCUPANT COMPARTMENT (Y) ACCELERATION VS TIME | B- 85 |
| 81 | RIGHT REAR OCCUPANT COMPARTMENT (Y) VELOCITY VS TIME | B- 86 |
| 82 | LOWER B-POST (Y) ACCELERATION VS TIME | B- 87 |
| 83 | LOWER B-POST (Y) VELOCITY VS TIME | B- 88 |
| 84 | UPPER B-POST (Y) ACCELERATION VS TIME | B- 89 |
| 85 | UPPER B-POST (Y) VELOCITY VS TIME | B- 90 |
| 86 | LOWER A-POST (Y) ACCELERATION VS TIME | B- 91 |
| 87 | LOWER A-POST (Y) VELOCITY VS TIME | B- 92 |
| 88 | UPPER A-POST (Y) ACCELERATION VS TIME | B- 93 |
| 89 | UPPER A-POST (Y) VELOCITY VS TIME | B- 94 |
| 90 | FRONT SEAT TRACK (Y) ACCELERATION VS TIME | B- 95 |
| 91 | FRONT SEAT TRACK (Y) VELOCITY VS TIME | B- 96 |
| 92 | REAR SEAT TRACK (Y) ACCELERATION VS TIME | B- 97 |
| 93 | REAR SEAT TRACK (Y) VELOCITY VS TIME | B- 98 |

**TEST VEHICLE INSTRUMENTATION PLOTS
ACCELERATION DATA - FILTER CLASS 60
INTEGRATION DATA - FILTER CLASS 180**

| <u>Plot No.</u> | <u>Data Plot Title</u> | <u>Page</u> |
|-----------------|---|-------------|
| 94 | VEHICLE CENTER OF GRAVITY (X) ACCELERATION VS TIME | B- 99 |
| 95 | VEHICLE CENTER OF GRAVITY (X) VELOCITY VS TIME | B- 100 |
| 96 | VEHICLE CENTER OF GRAVITY (Y) ACCELERATION VS TIME | B- 101 |
| 97 | VEHICLE CENTER OF GRAVITY (Y) VELOCITY ACCELERATION VS TIME | B- 102 |
| 98 | VEHICLE CENTER OF GRAVITY (Z) ACCELERATION VS TIME | B- 103 |
| 99 | VEHICLE CENTER OF GRAVITY (Z) VELOCITY VS TIME | B- 104 |
| 100 | VEHICLE CENTER OF GRAVITY RESULTANT ACCELERATION VS TIME | B- 105 |

**MDB INSTRUMENTATION PLOTS
ACCELERATION DATA - FILTER CLASS 60
INTEGRATION DATA - FILTER CLASS 180**

| <u>Plot No.</u> | <u>Data Plot Title</u> | <u>Page</u> |
|-----------------|--|-------------|
| 101 | MDB CENTER OF GRAVITY (X) ACCELERATION VS TIME | B- 106 |
| 102 | MDB CENTER OF GRAVITY (X) VELOCITY VS TIME | B- 107 |
| 103 | MDB CENTER OF GRAVITY (Y) ACCELERATION VS TIME | B- 108 |
| 104 | MDB CENTER OF GRAVITY (Y) VELOCITY VS TIME | B- 109 |
| 105 | MDB CENTER OF GRAVITY (Z) ACCELERATION VS TIME | B- 110 |
| 106 | MDB CENTER OF GRAVITY (Z) VELOCITY VS TIME | B- 111 |
| 107 | MDB CENTER OF GRAVITY RESULTANT ACCELERATION VS TIME | B- 112 |
| 108 | MDB REAR (X) ACCELERATION VS TIME | B- 113 |
| 109 | MDB REAR (X) VELOCITY VS TIME | B- 114 |
| 110 | MDB REAR (Y) ACCELERATION VS TIME | B- 115 |
| 111 | MDB REAR (Y) VELOCITY VS TIME | B- 116 |

**DRIVER & PASSENGER DUMMY INSTRUMENTATION PLOTS (REDUNDANT)
ACCELERATION DATA - FILTER CLASS 1000, LOWER SPINE - FILTER CLASS 180
INTEGRATION DATA - FILTER CLASS 180**

| <u>Plot No.</u> | <u>Data Plot Title</u> | <u>Page</u> |
|-----------------|--|-------------|
| 112 | DRIVER UPPER RIB (Y) ACCELERATION VS TIME | B- 117 |
| 113 | DRIVER UPPER RIB (Y) VELOCITY VS TIME | B- 118 |
| 114 | DRIVER LOWER RIB (Y) ACCELERATION VS TIME | B- 119 |
| 115 | DRIVER LOWER RIB (Y) VELOCITY VS TIME | B- 120 |
| 116 | DRIVER LOWER SPINE (Y) ACCELERATION VS TIME | B- 121 |
| 117 | DRIVER LOWER SPINE (Y) VELOCITY VS TIME | B- 122 |
| 118 | DRIVER PELVIC (Y) ACCELERATION VS TIME | B- 123 |
| 119 | DRIVER PELVIC (Y) VELOCITY VS TIME | B- 124 |
| 120 | PASSENGER UPPER RIB (Y) ACCELERATION VS TIME | B- 125 |
| 121 | PASSENGER UPPER RIB (Y) VELOCITY VS TIME | B- 126 |
| 122 | PASSENGER LOWER RIB (Y) ACCELERATION VS TIME | B- 127 |
| 123 | PASSENGER LOWER RIB (Y) VELOCITY VS TIME | B- 128 |
| 124 | PASSENGER LOWER SPINE (Y) ACCELERATION VS TIME | B- 129 |
| 125 | PASSENGER LOWER SPINE (Y) VELOCITY VS TIME | B- 130 |
| 126 | PASSENGER PELVIC (Y) ACCELERATION VS TIME | B- 131 |
| 127 | PASSENGER PELVIC (Y) VELOCITY VS TIME | B- 132 |

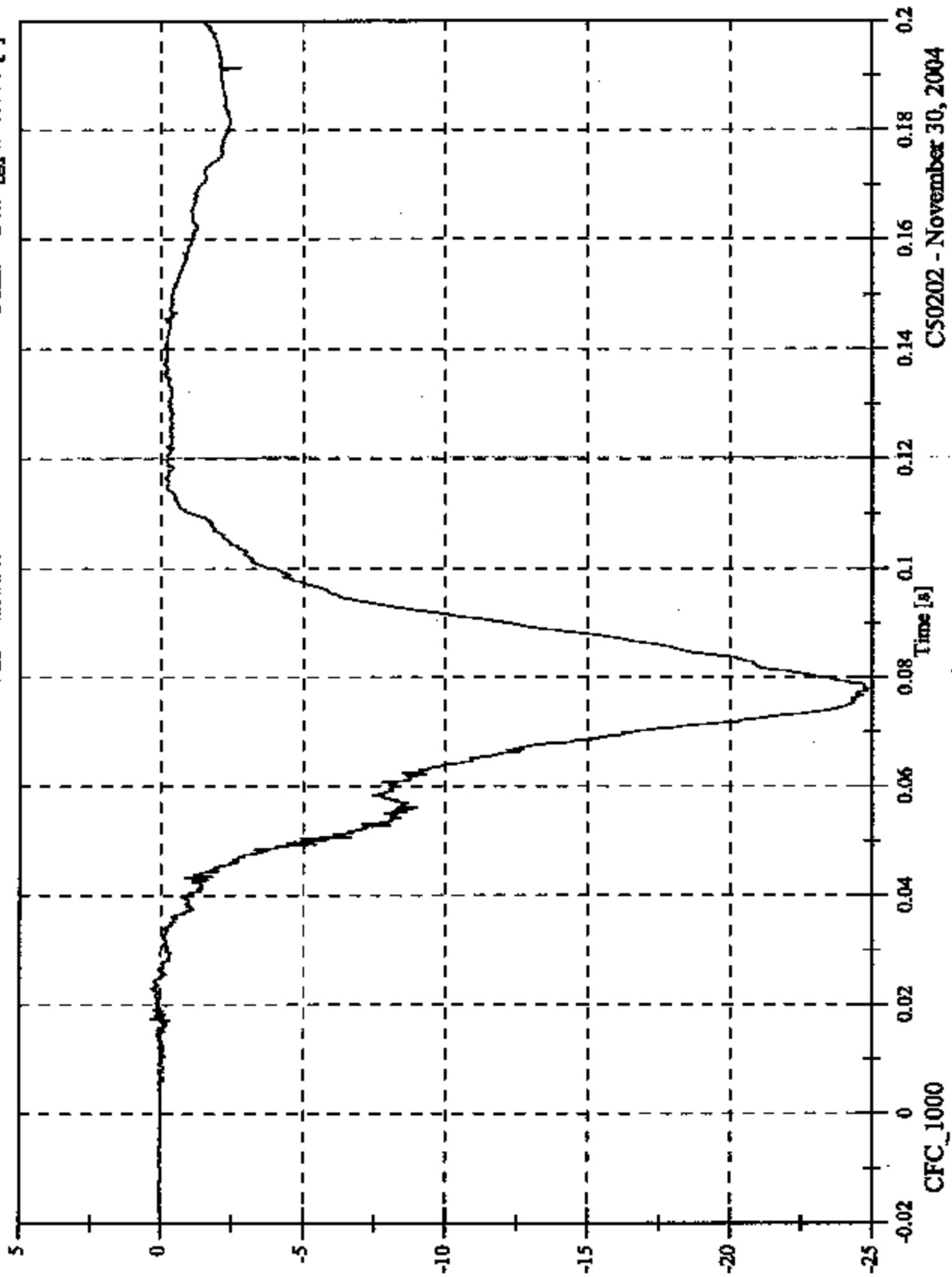
**DRIVER & PASSENGER DUMMY INSTRUMENTATION PLOTS (REDUNDANT)
ACCELERATION DATA - FIR FILTERED**

| <u>Plot No.</u> | <u>Data Plot Title</u> | <u>Page</u> |
|-----------------|--|-------------|
| 128 | DRIVER UPPER RIB (Y) ACCELERATION VS TIME | B- 133 |
| 129 | DRIVER LOWER RIB (Y) ACCELERATION VS TIME | B- 134 |
| 130 | DRIVER LOWER SPINE (Y) ACCELERATION VS TIME | B- 135 |
| 131 | DRIVER PELVIC (Y) ACCELERATION VS TIME | B- 136 |
| 132 | PASSENGER UPPER RIB (Y) ACCELERATION VS TIME | B- 137 |
| 133 | PASSENGER LOWER RIB (Y) ACCELERATION VS TIME | B- 138 |
| 134 | PASSENGER LOWER SPINE (Y) ACCELERATION VS TIME | B- 139 |
| 135 | PASSENGER PELVIC (Y) ACCELERATION VS TIME | B- 140 |

2005 214 Inducant Test 2 - 2005 Ford Mustang

V2P1 Head x

Max: 0.3 [g] at 0.018 [s]
Min: -24.9 [g] at 0.078 [s]

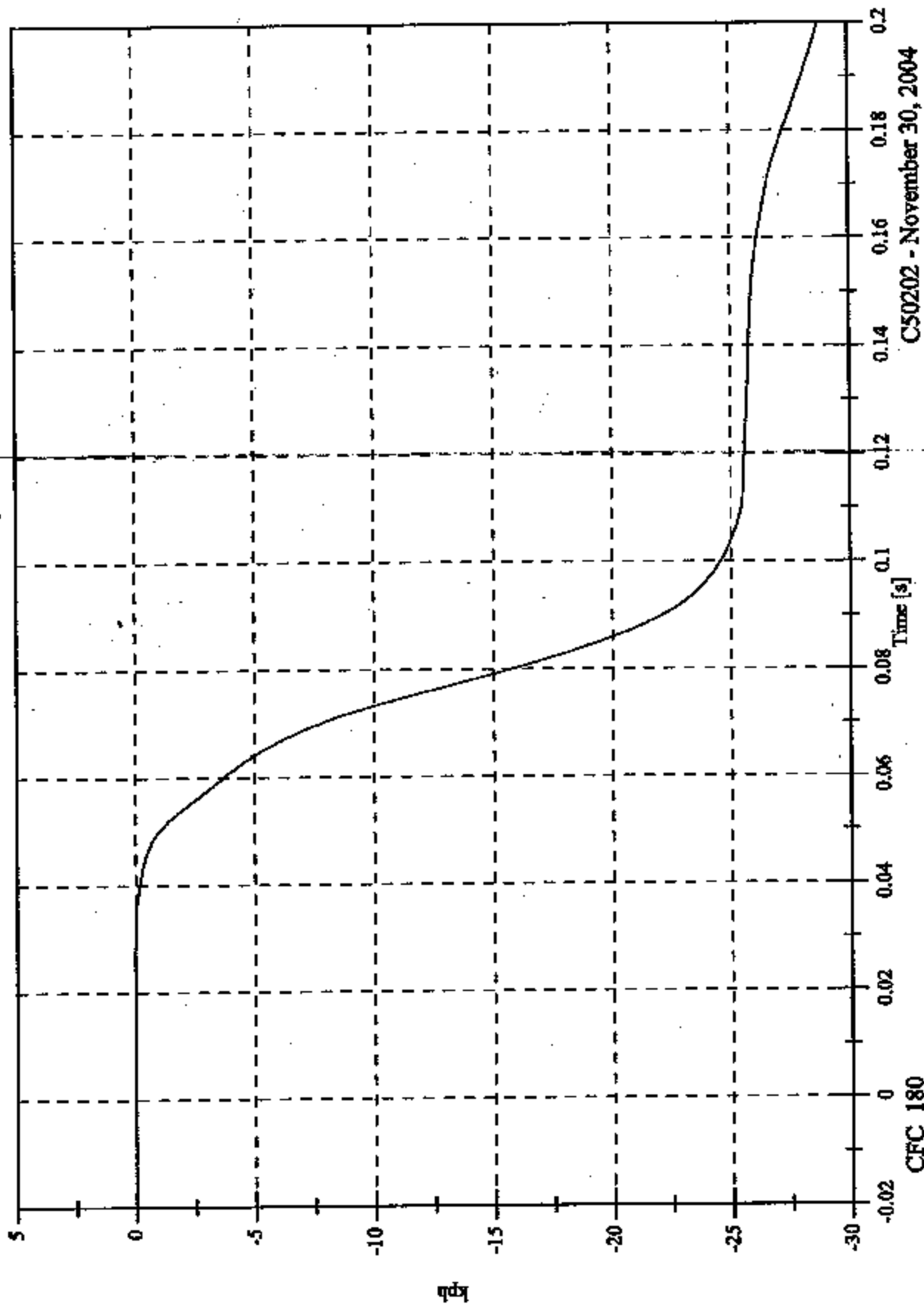


C50202 - November 30, 2004

2005 214 Indicant Test 2 - 2005 Ford Mustang

V2P1 Head x Velocity

Max: 0.0 [kph] at 0.025 [s]
Min: -28.8 [kph] at 0.200 [s]

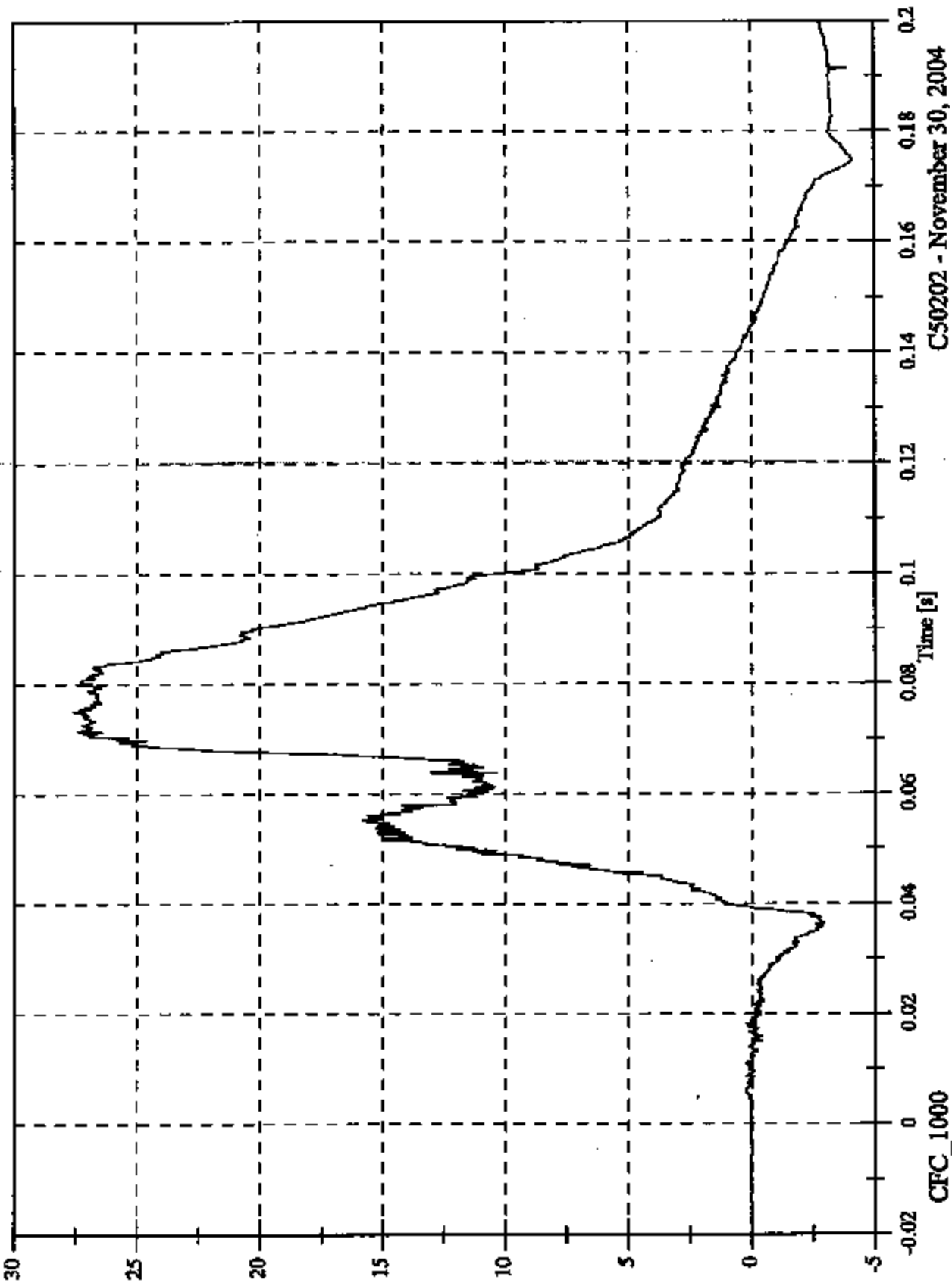


C50202 - November 30, 2004

2005 214 Inducant Test 2 - 2005 Ford Mustang

Max: 27.6 [g] at 0.075 [s]
Min: -4.1 [g] at 0.175 [s]

V2P1 Head y

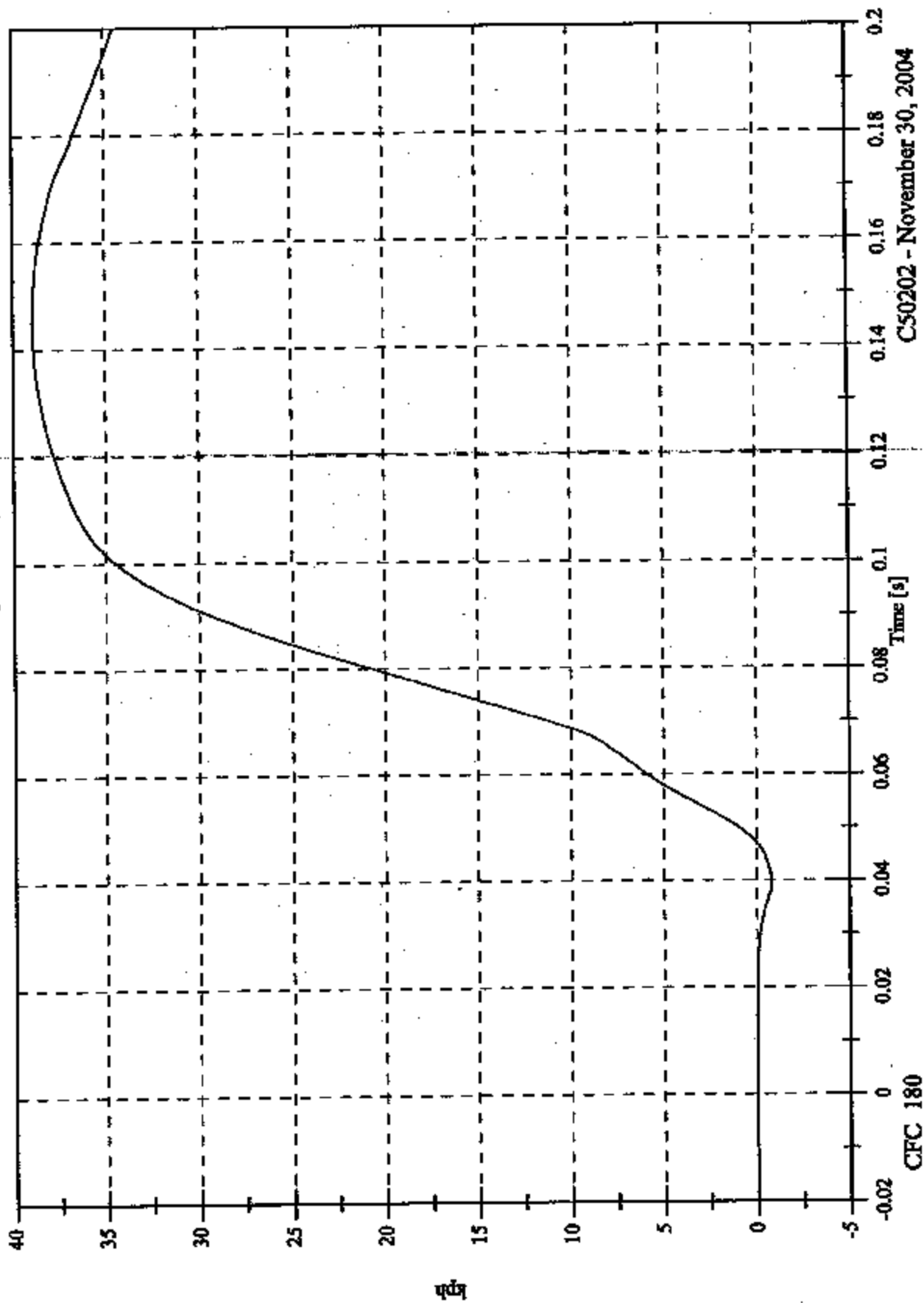


C50202 - November 30, 2004

2005 214 Indicant Test 2 - 2005 Ford Mustang

Max: 39.0 [kph] at 0.145 [s]
Min: -0.8 [kph] at 0.039 [s]

V2P1 Head y Velocity

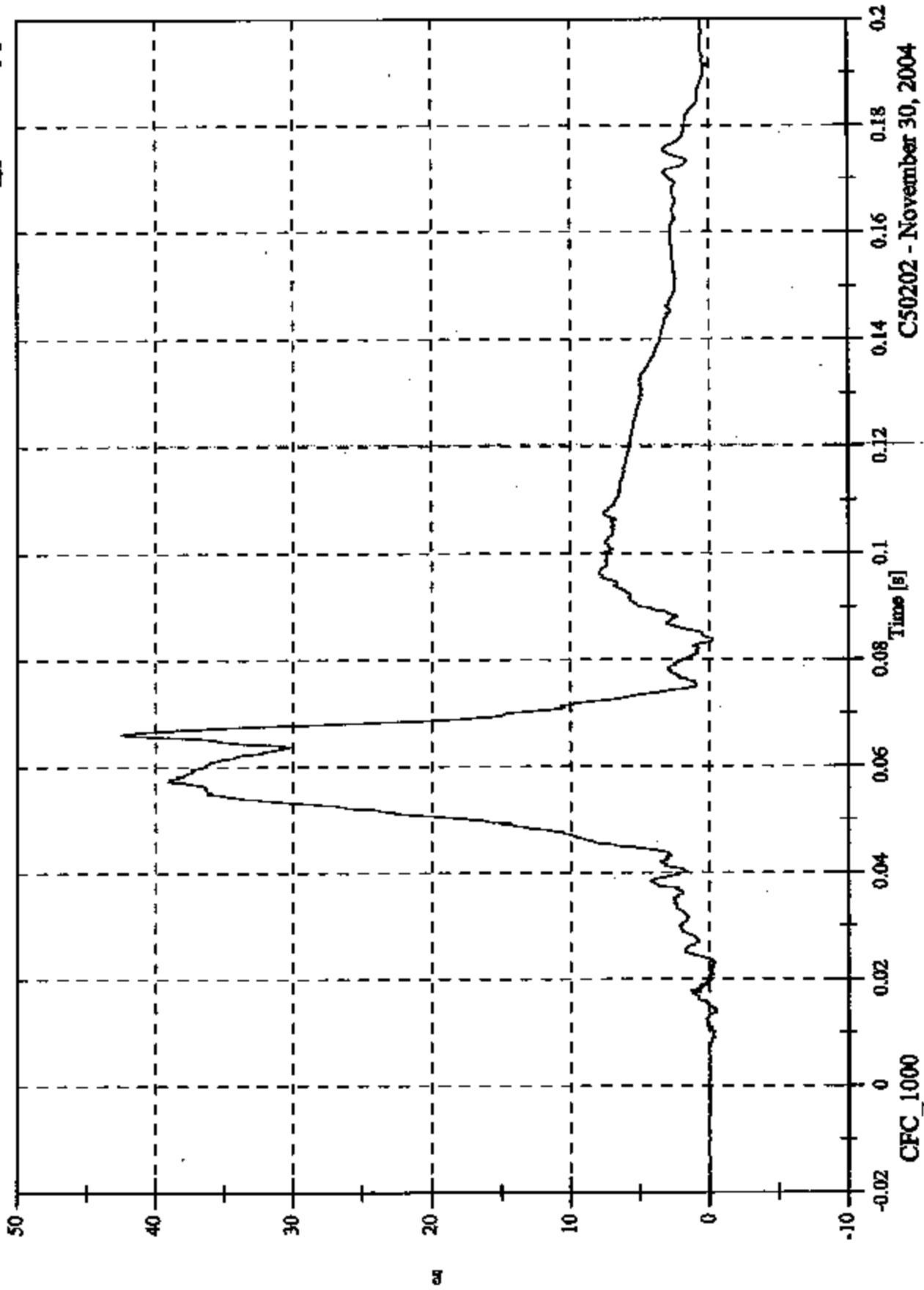


C50202 - November 30, 2004

2005 214 Indicant Test 2 - 2005 Ford Mustang

Max: 42.5 [g] at 0.066 [s]
Min: -0.5 [g] at 0.014 [s]

V2P1 Head z

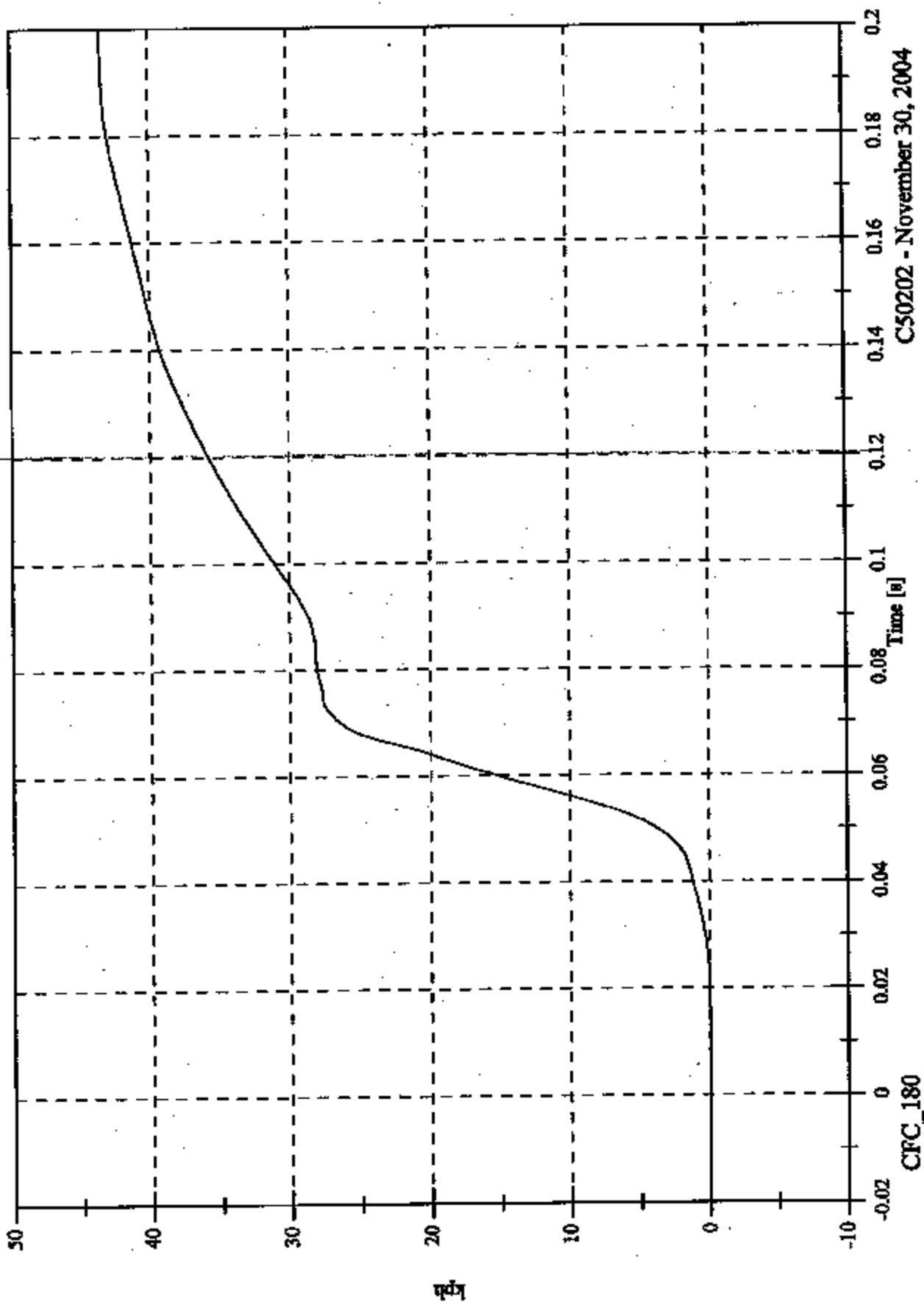


C50202 - November 30, 2004

2005 214 Indicant Test 2 - 2005 Ford Mustang

V2P1 Head z Velocity

Max: 43.6 [kph] at 0.200 [s]
Min: -0.0 [kph] at 0.015 [s]



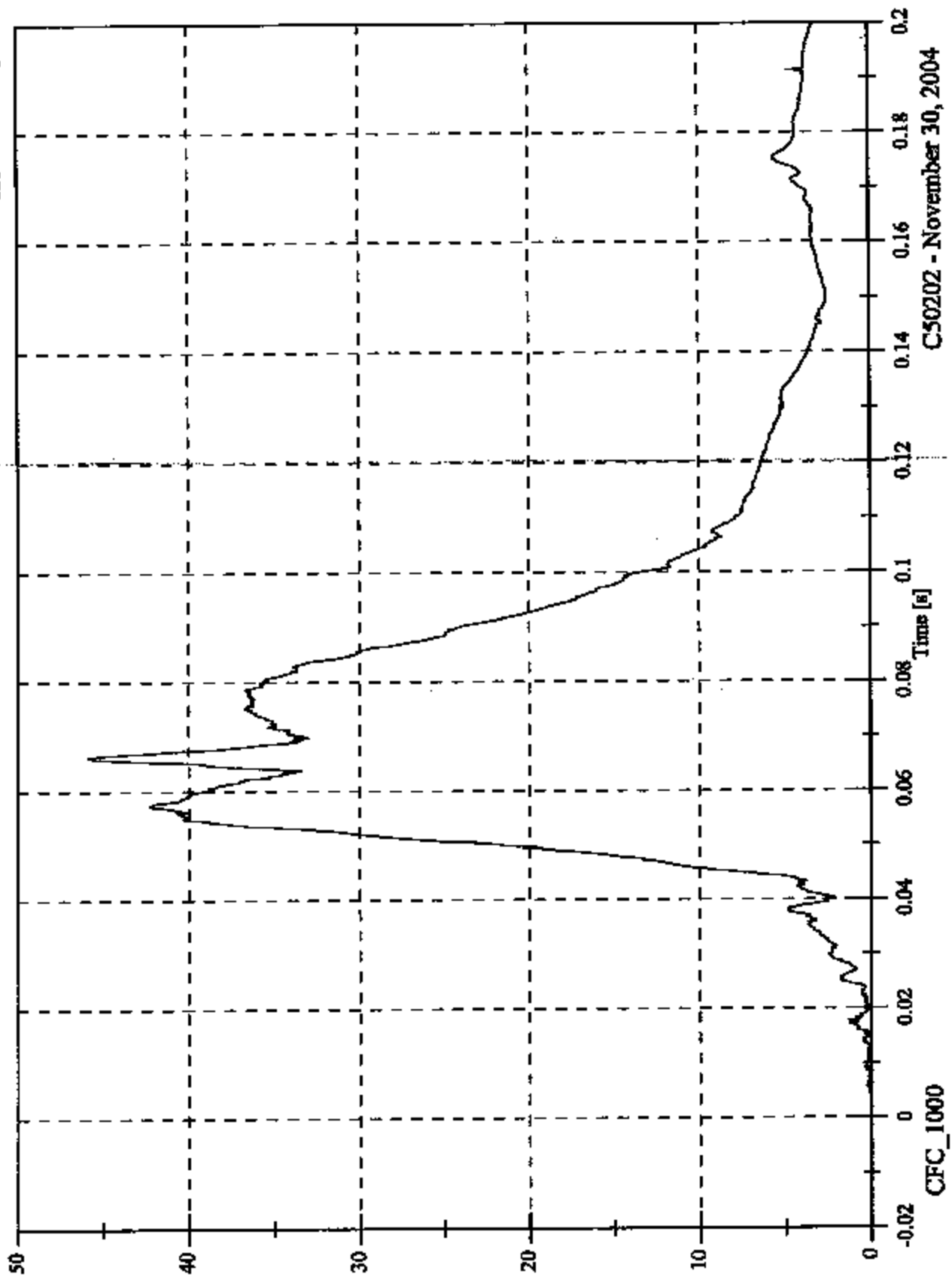
C50202 - November 30, 2004

2005 214 Inducant Test 2 - 2005 Ford Mustang

Max: 45.9 [g] at 0.066 [s]

Min: 0.0 [g] at -0.006 [s]

V2P1 Head Resultant

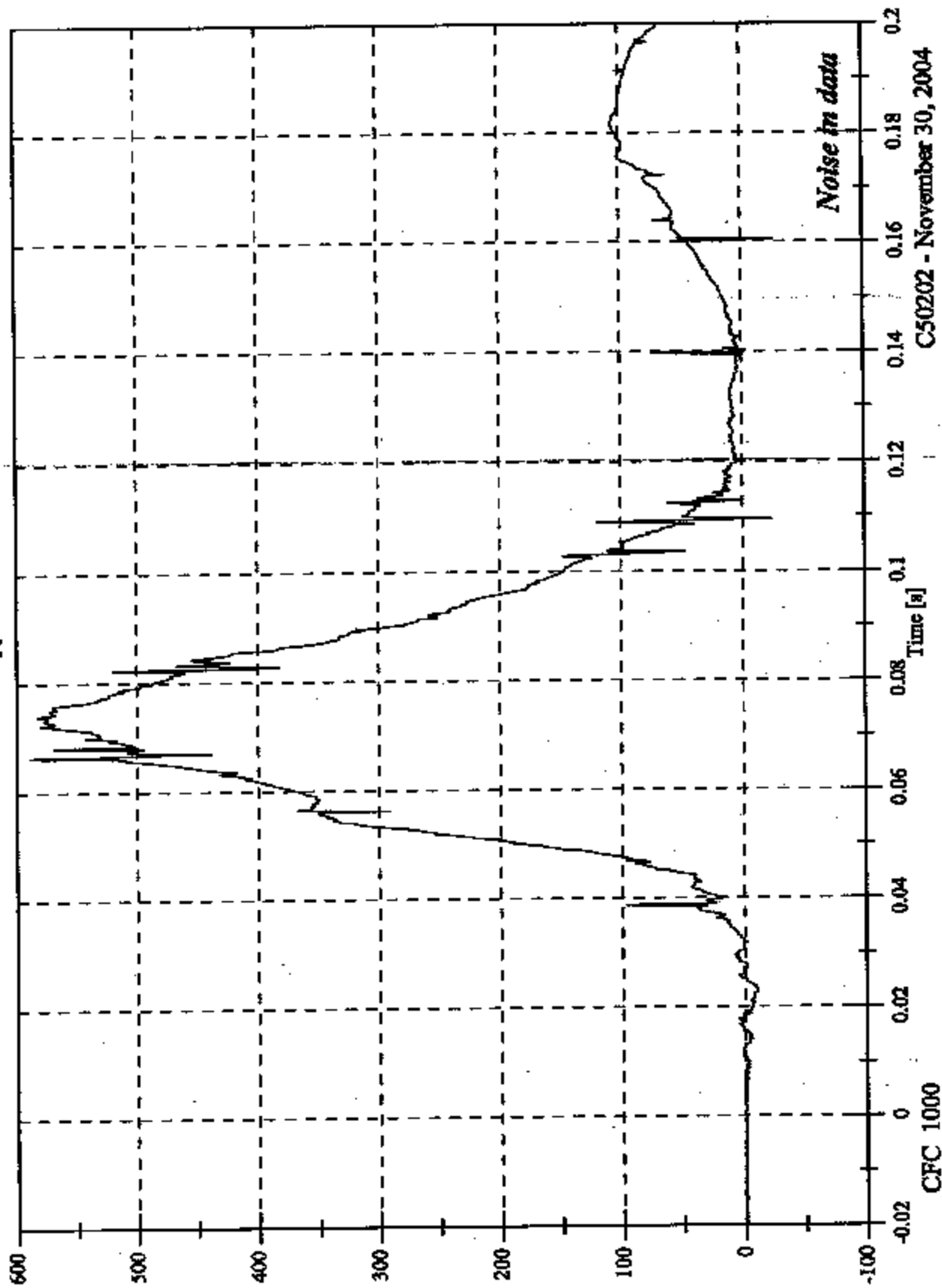


C50202 - November 30, 2004

2005 214 Inducant Test 2 - 2005 Ford Mustang

V2P1 Upper Neck Fx

Max: 589.2 [N] at 0.066 [s]
Min: -27.1 [N] at 0.160 [s]

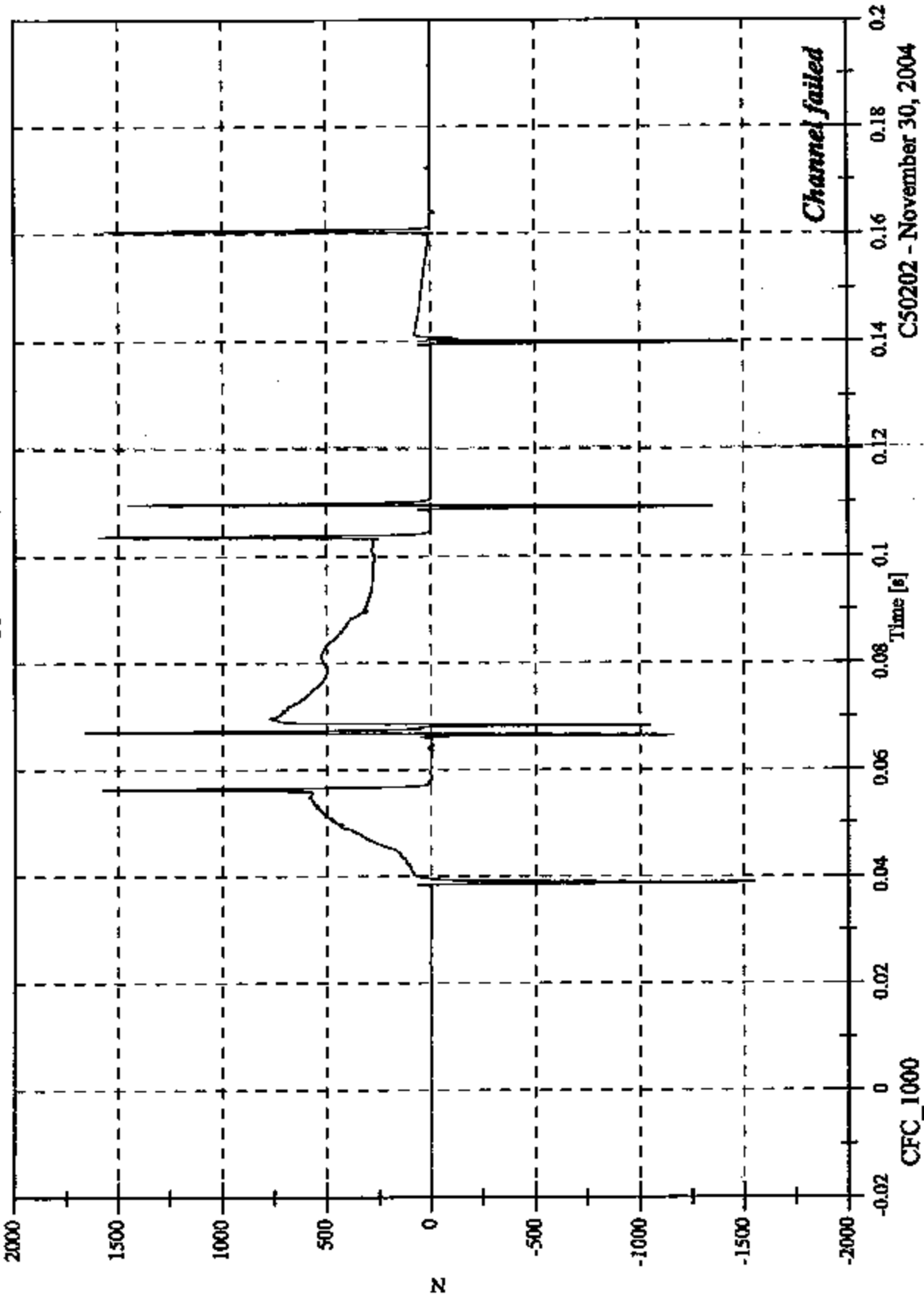


C50202 - November 30, 2004

2005 214 Indicant Test 2 - 2005 Ford Mustang

Max: 1656.3 [N] at 0.067 [s]
Min: -1548.1 [N] at 0.039 [s]

V2P1 Upper Neck Fy

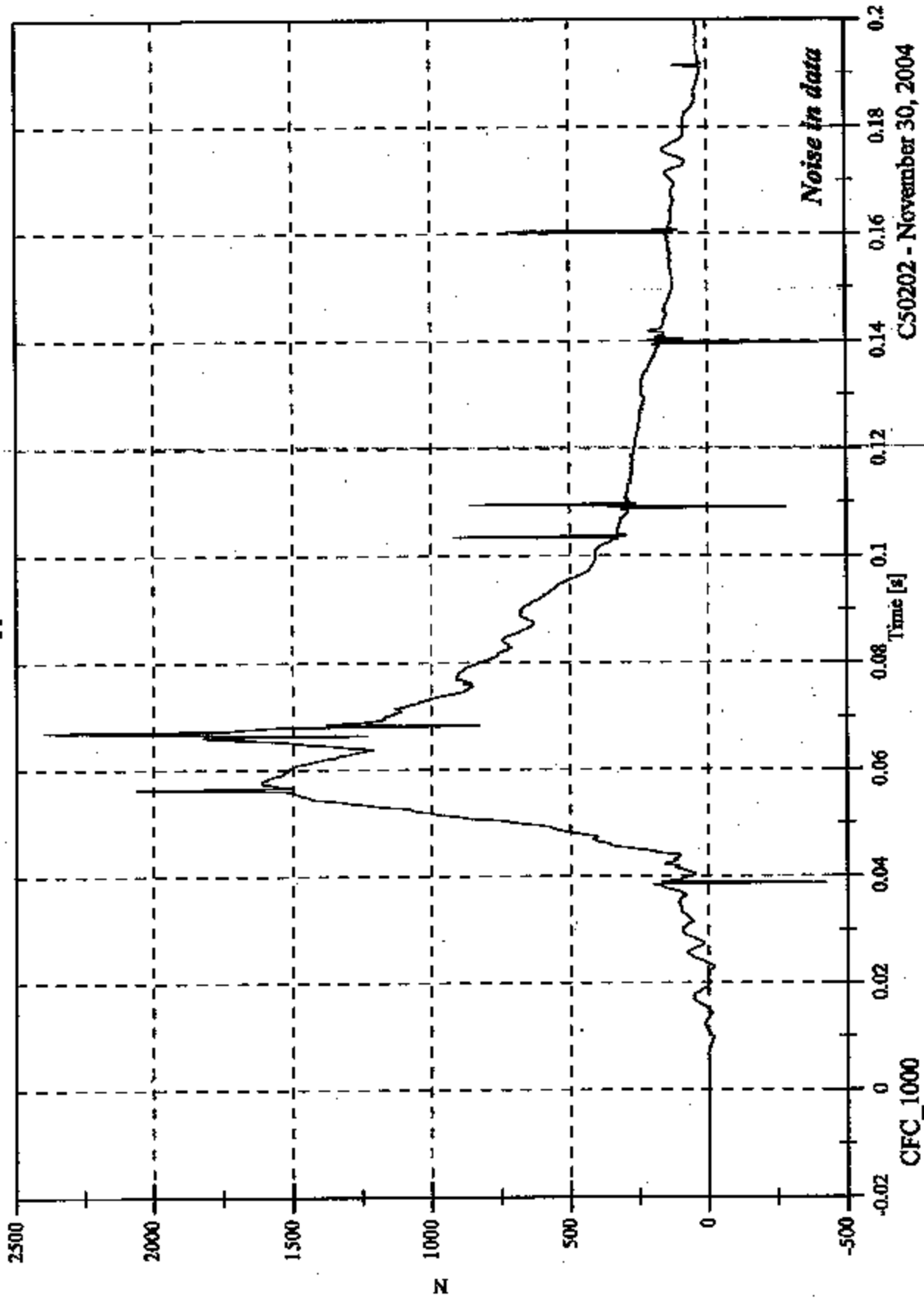


C50202 - November 30, 2004

2005 214 Indicant Test 2 - 2005 Ford Mustang

V2P1 Upper Neck Fz

Max: 2396.5 [N] at 0.067 [s]
Min: -421.7 [N] at 0.039 [s]

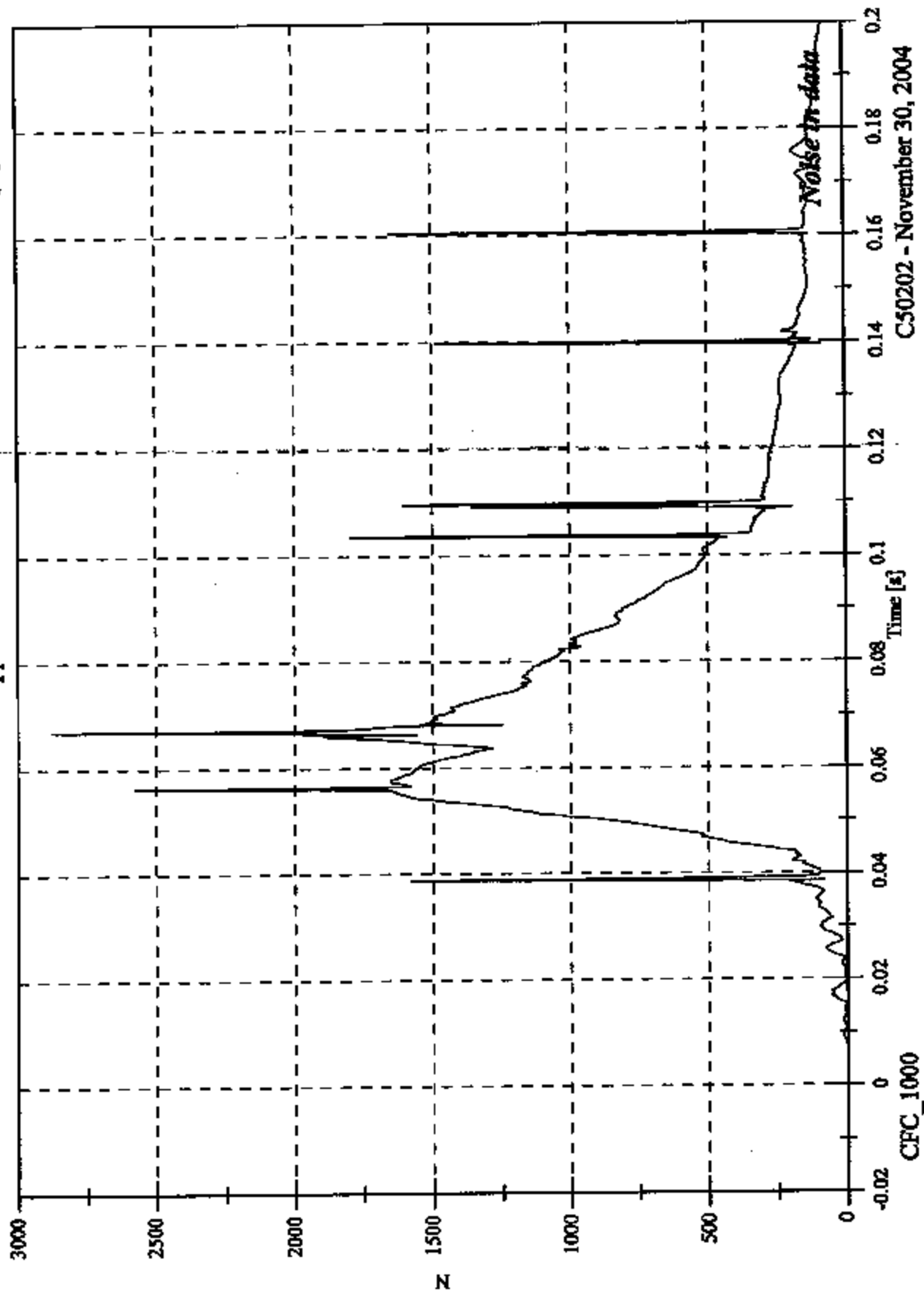


CS0202 - November 30, 2004

2005 214 Indignant Test 2 - 2005 Ford Mustang

V2P1 Upper Neck F Resultant

Max: 2876.6 [N] at 0.067 [s]
Min: 0.1 [N] at -0.009 [s]

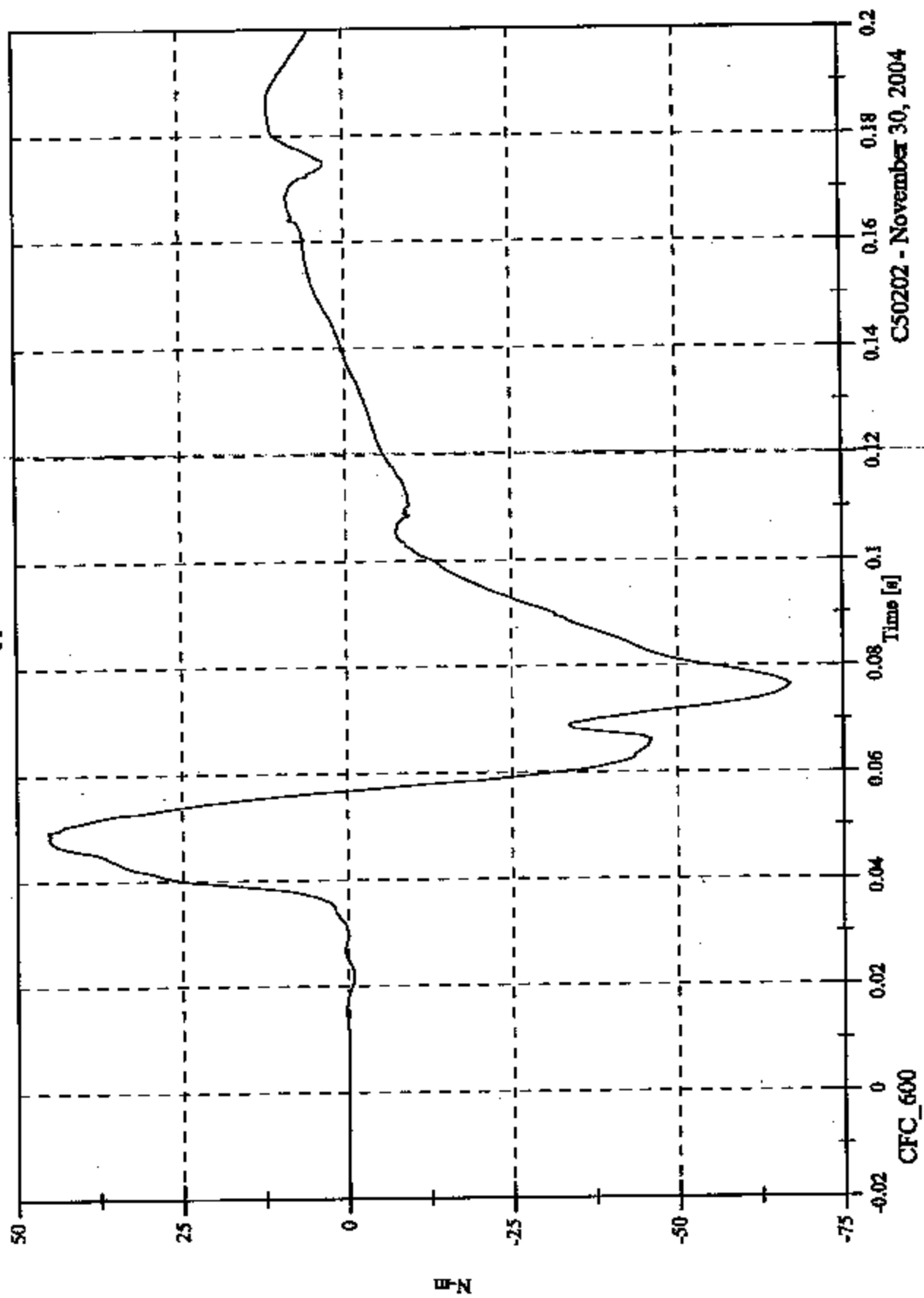


C50202 - November 30, 2004

2005 214 Inducant Test 2 - 2005 Ford Mustang

V2PI Upper Neck Mx

Max: 45.4 [N-m] at 0.049 [s]
Min: -67.0 [N-m] at 0.076 [s]

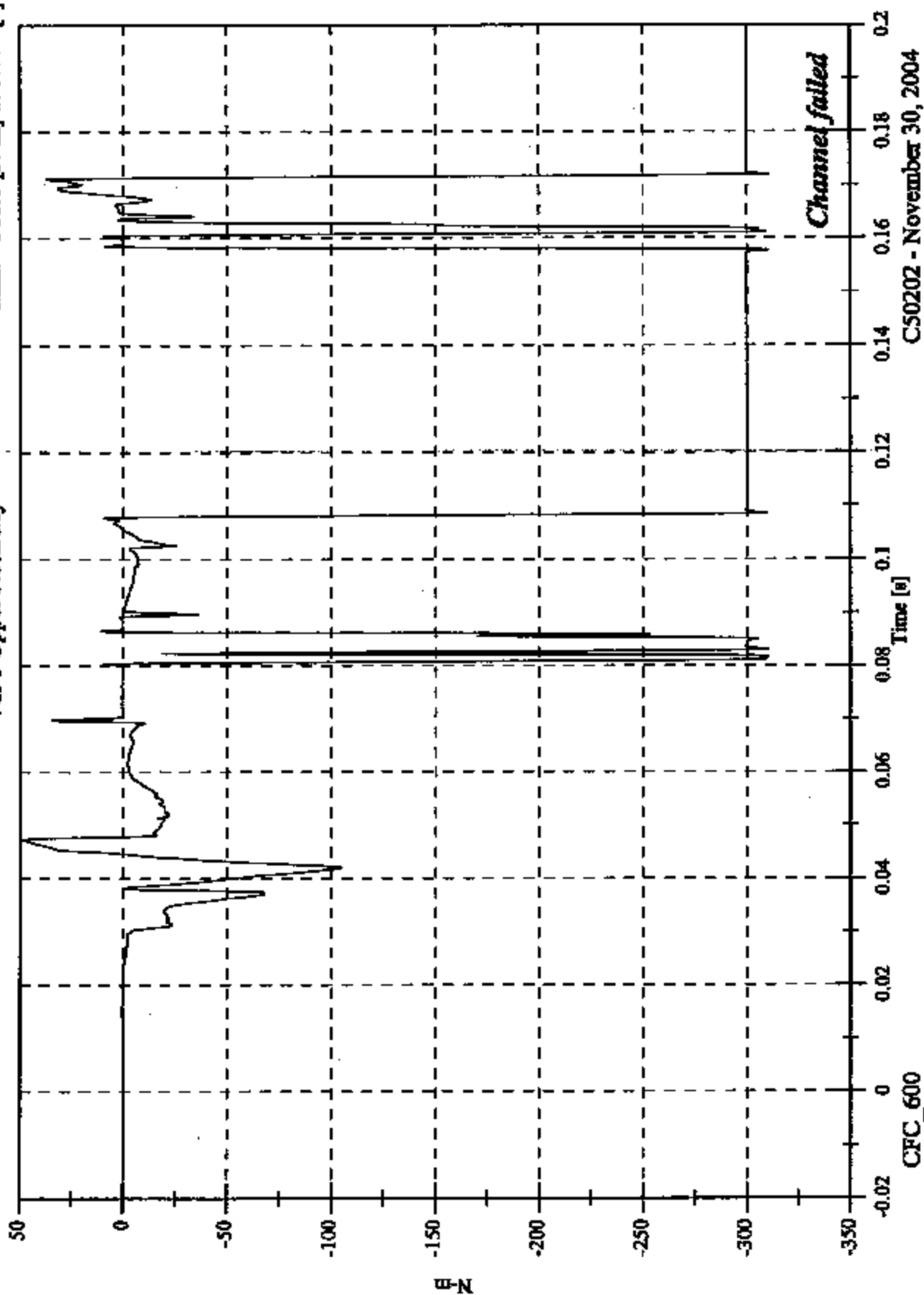


C50202 - November 30, 2004

2005 214 Inducant Test 2 - 2005 Ford Mustang

V2P1 Upper Neck My

Max: 49.1 [N-m] at 0.047 [s]
Min: -310.6 [N-m] at 0.172 [s]



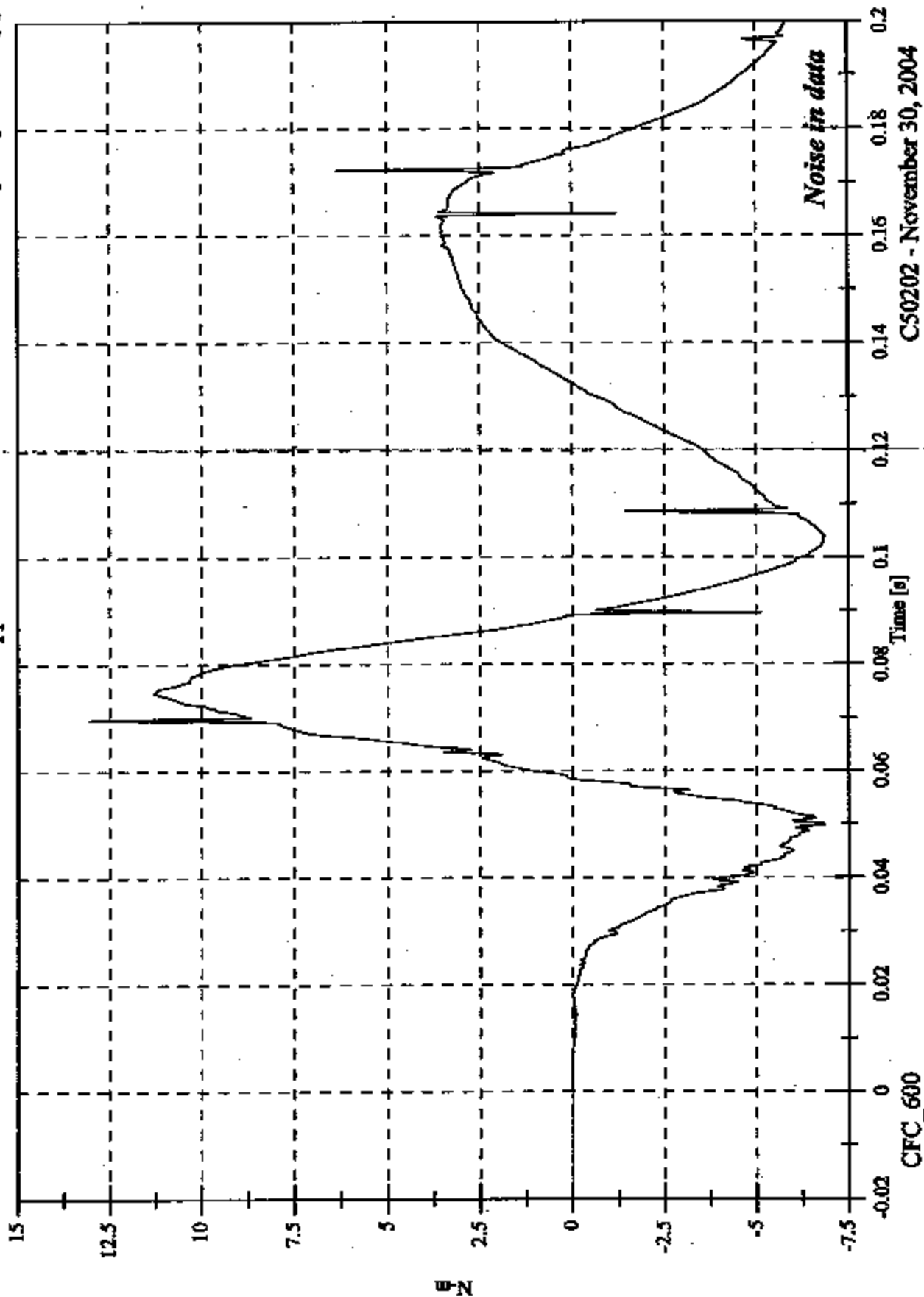
CS0202 - November 30, 2004

2005 214 Indicant Test 2 - 2005 Ford Mustang

V2P1 Upper Neck Mz

Max: 13.0 [N-m] at 0.070 [s]

Min: -6.9 [N-m] at 0.050 [s]



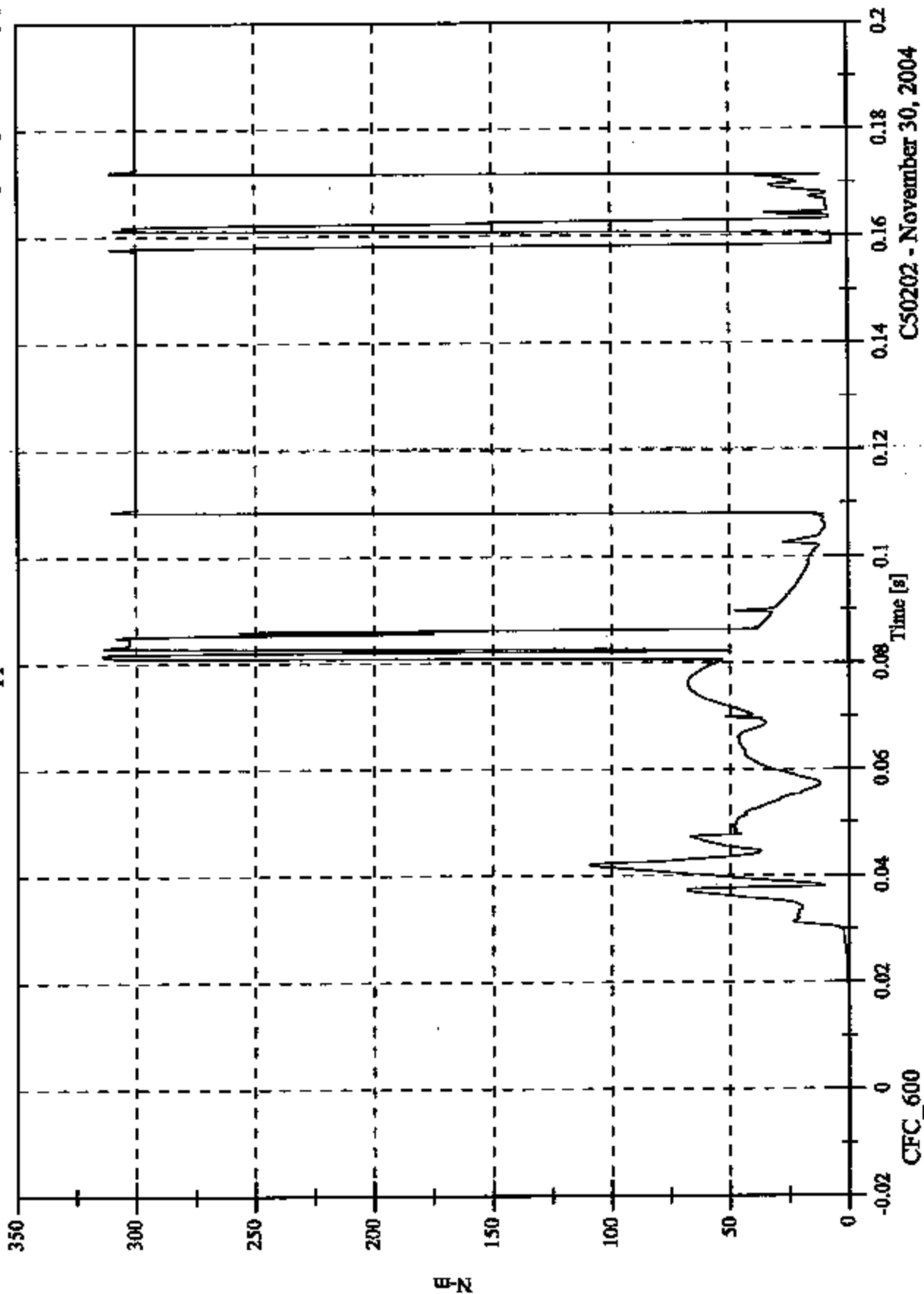
CS0202 - November 30, 2004

2005 214 Inducant Test 2 - 2005 Ford Mustang

Max: 314.0 [N-m] at 0.082 [s]

V2P1 Upper Neck M Resultant

Min: 0.0 [N-m] at -0.004 [s]

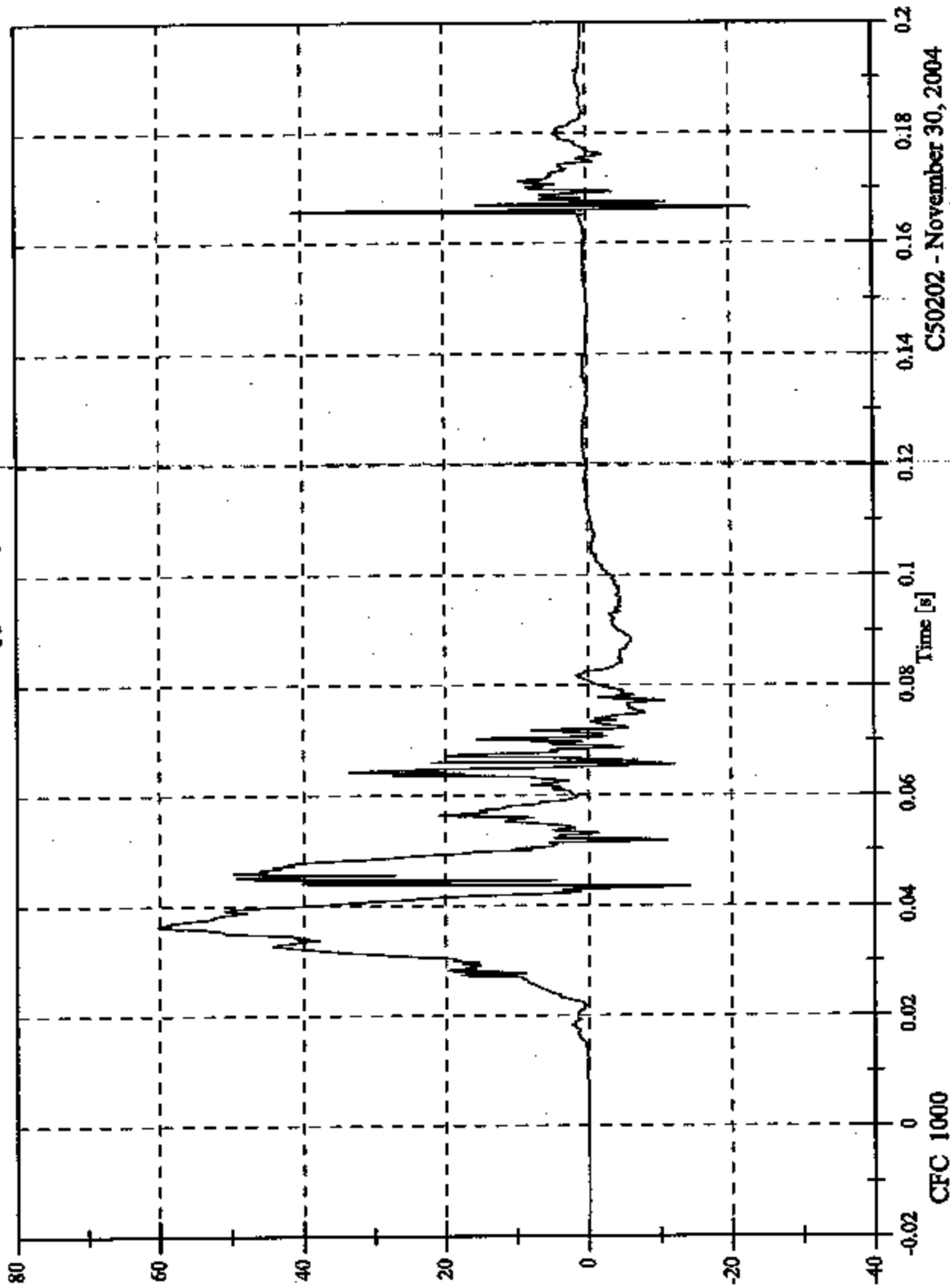


C50202 - November 30, 2004

2005 214 Inducant Test 2 - 2005 Ford Mustang

V2P1 Upper Rib y

Max: 60.1 [g] at 0.036 [s]
Min: -22.9 [g] at 0.167 [s]

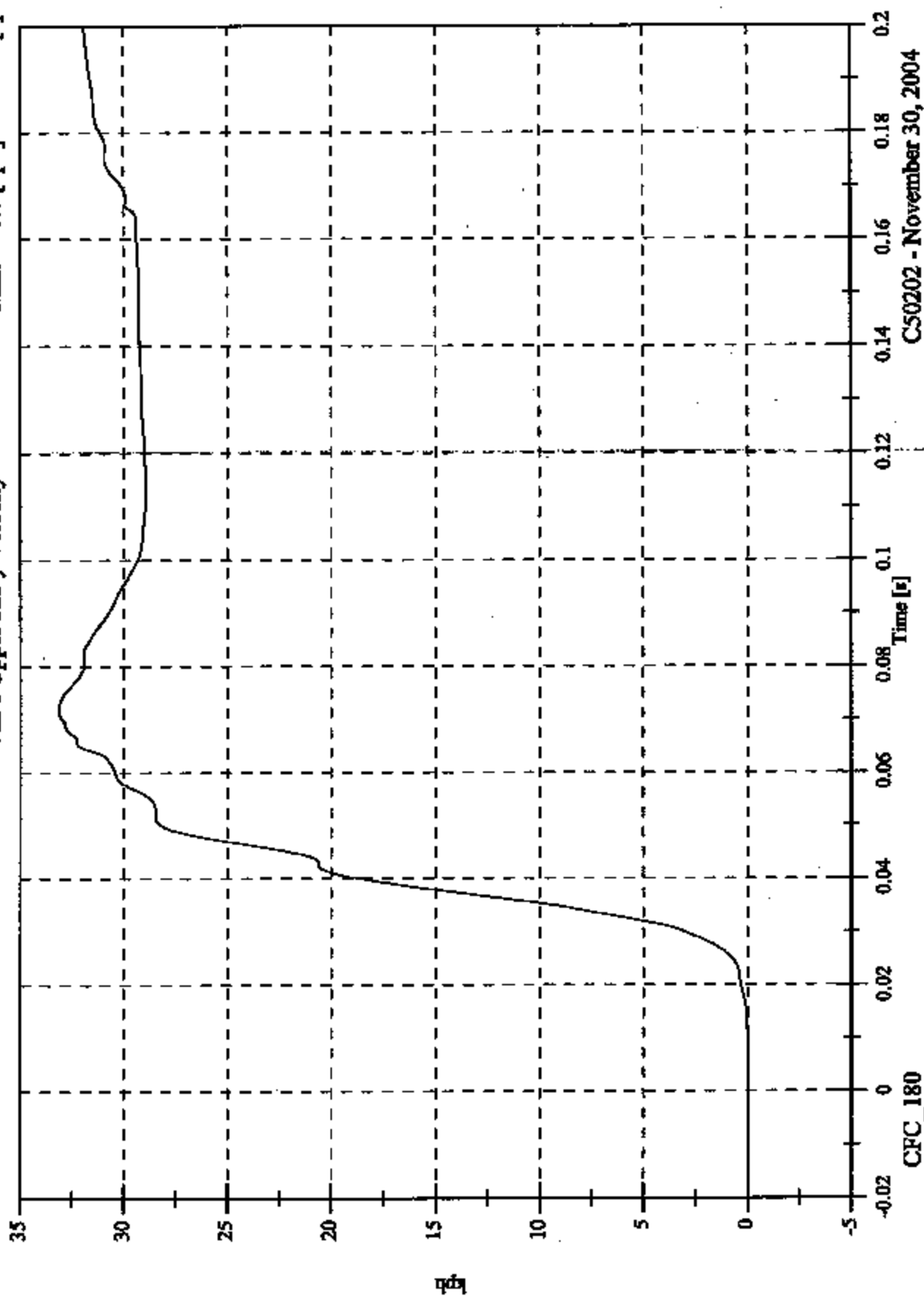


C50202 - November 30, 2004

2005 214 Indicant Test 2 - 2005 Ford Mustang

V2P1 Upper Rib y Velocity

Max: 33.1 [kph] at 0.072 [s]
Min: -0.0 [kph] at -0.006 [s]

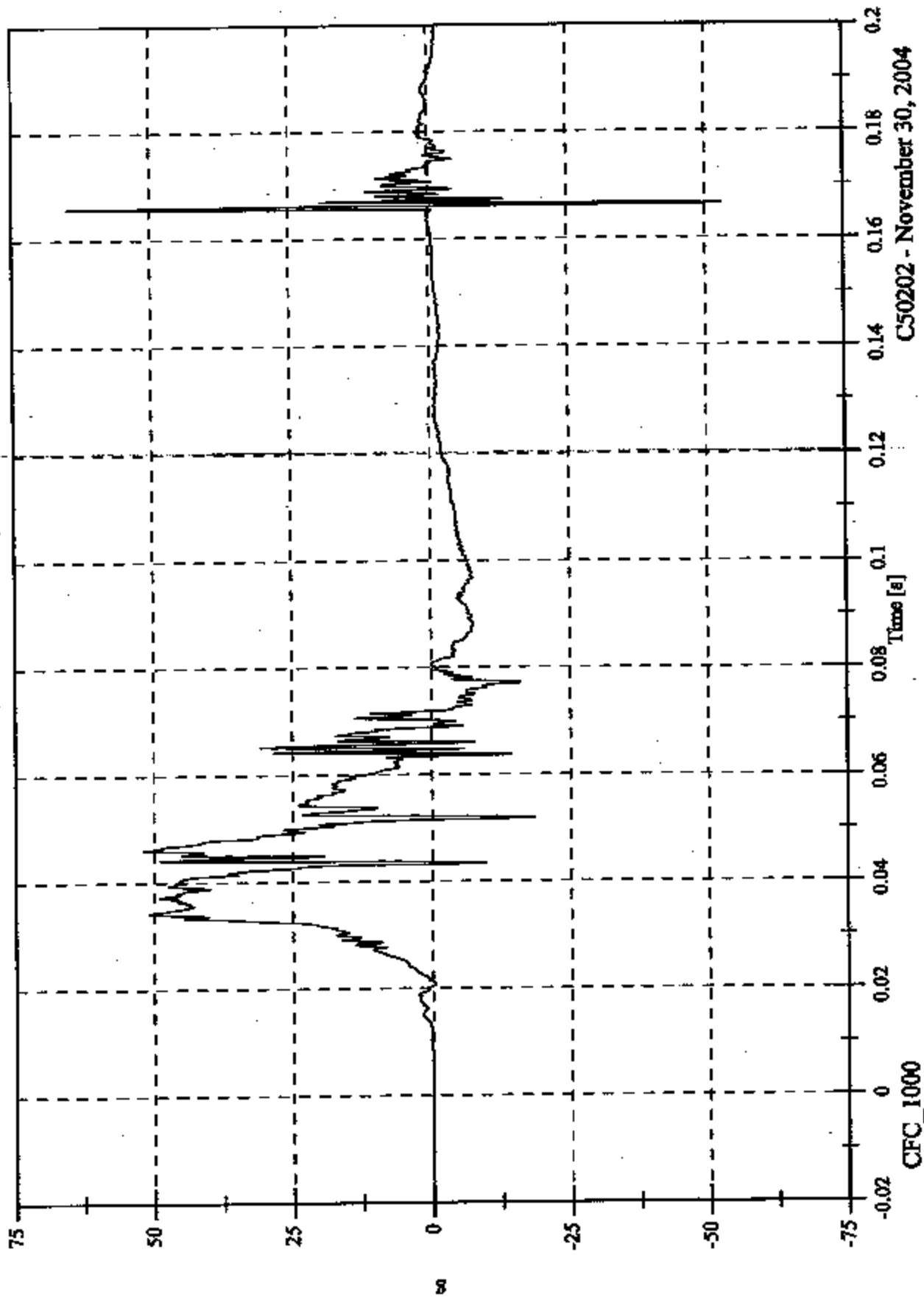


C50202 - November 30, 2004

2005 214 Indignant Test 2 - 2005 Ford Mustang

V2P1 Lower Rib y

Max: 64.9 [g] at 0.166 [s]
Min: -53.0 [g] at 0.166 [s]

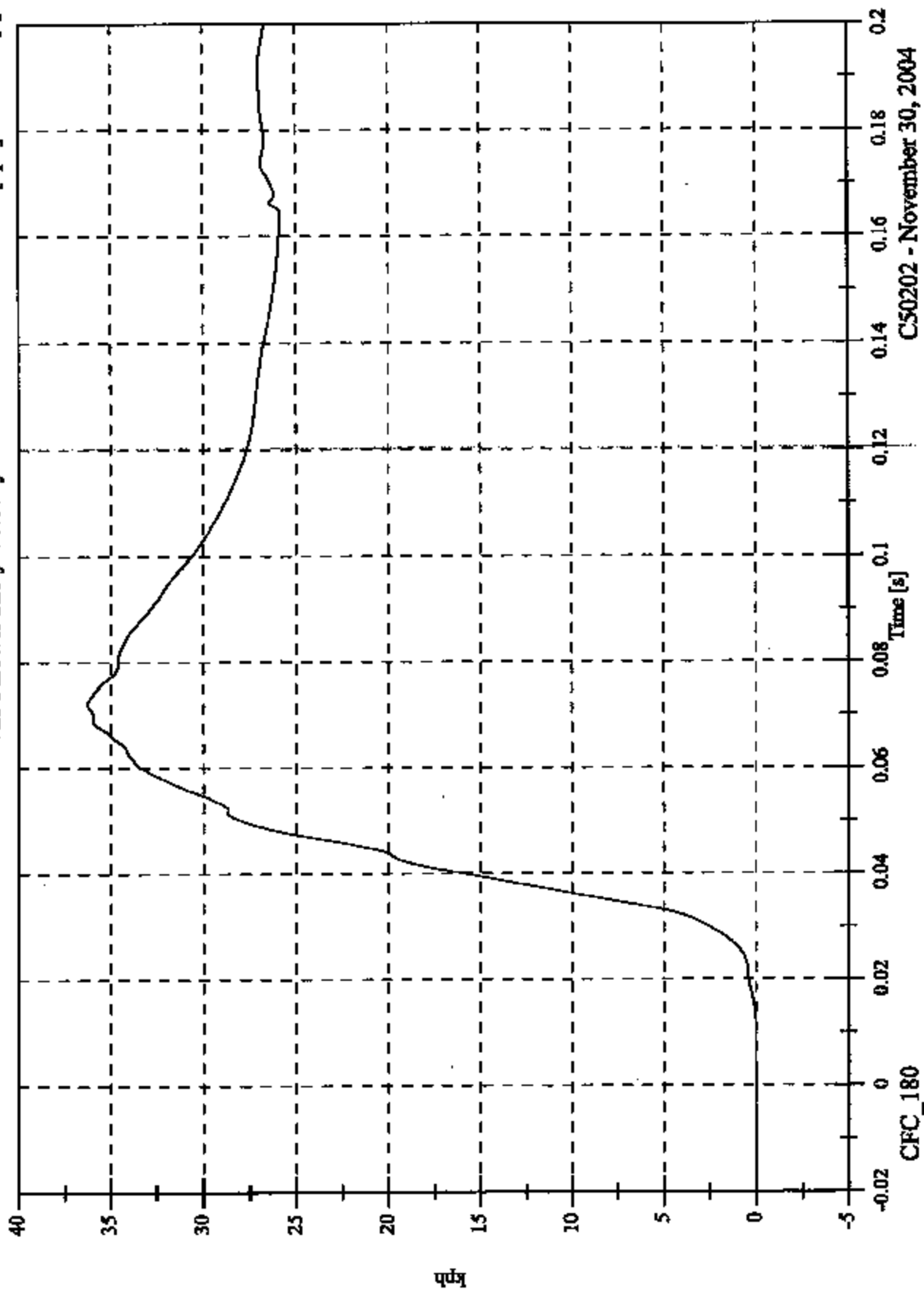


C50202 - November 30, 2004

2005 214 Inducant Test 2 - 2005 Ford Mustang

VZP1 Lower Rib y Velocity

Max: 36.3 [kph] at 0.072 [s]
Min: -0.0 [kph] at -0.020 [s]

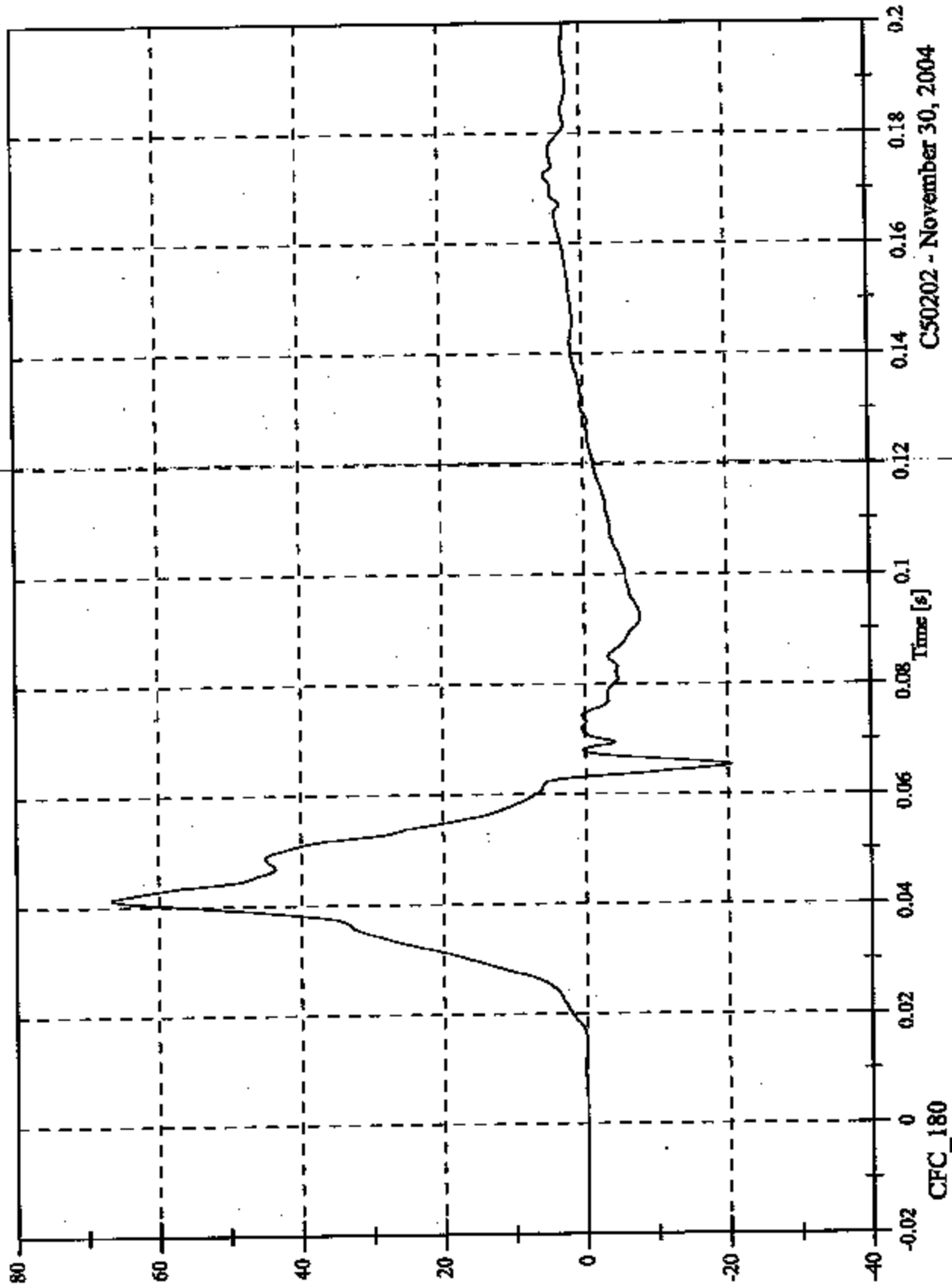


C50202 - November 30, 2004

2005 214 Indicant Test 2 - 2005 Ford Mustang

V2P1 Lower Spine y

Max: 66.5 [g] at 0.041 [s]
Min: -20.4 [g] at 0.065 [s]



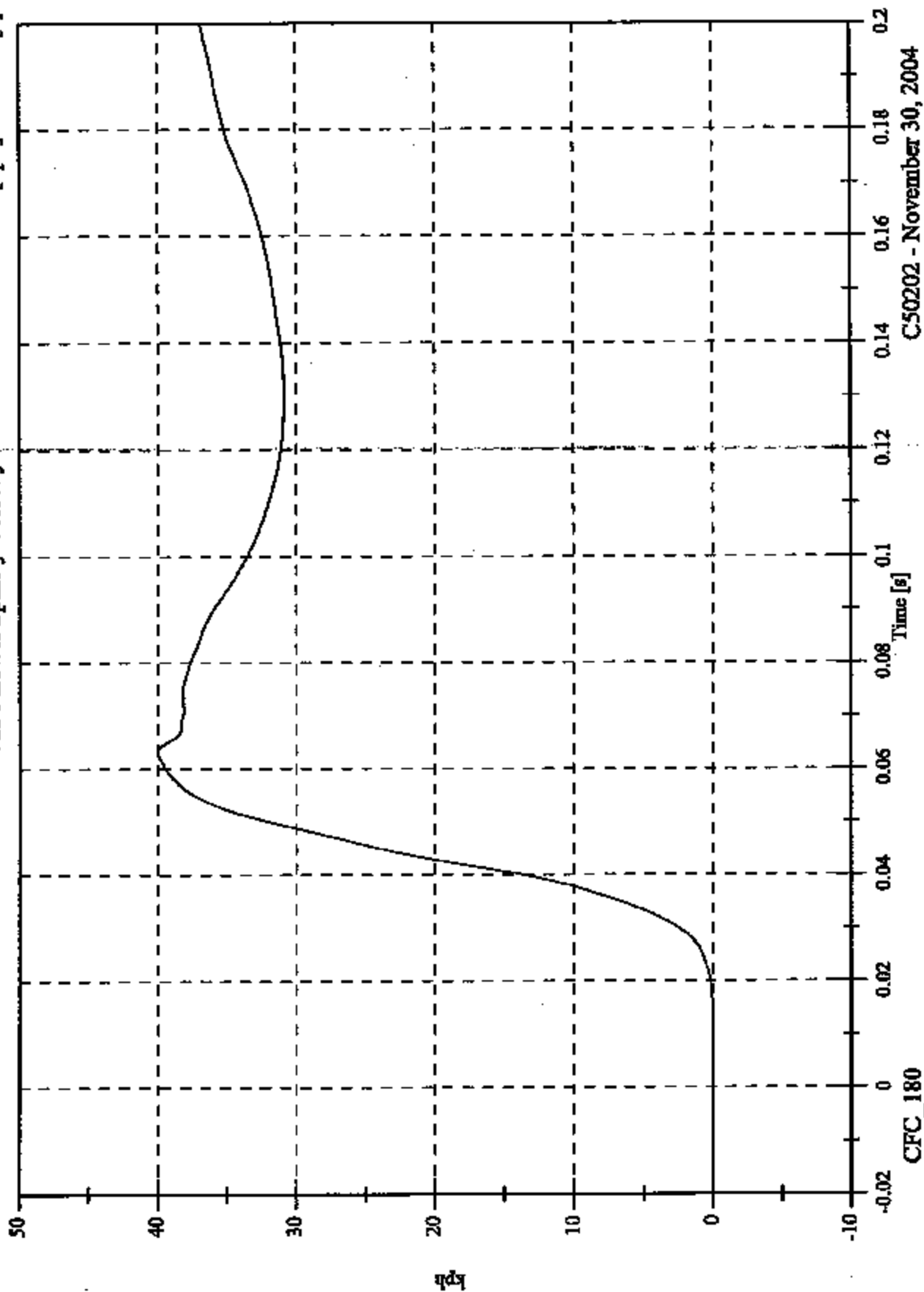
C50202 - November 30, 2004

CFC_180

2005 214 Indicant Test 2 - 2005 Ford Mustang

Max: 40.0 [kph] at 0.063 [s]
Min: -0.0 [kph] at -0.012 [s]

V2P1 Lower Spine y Velocity

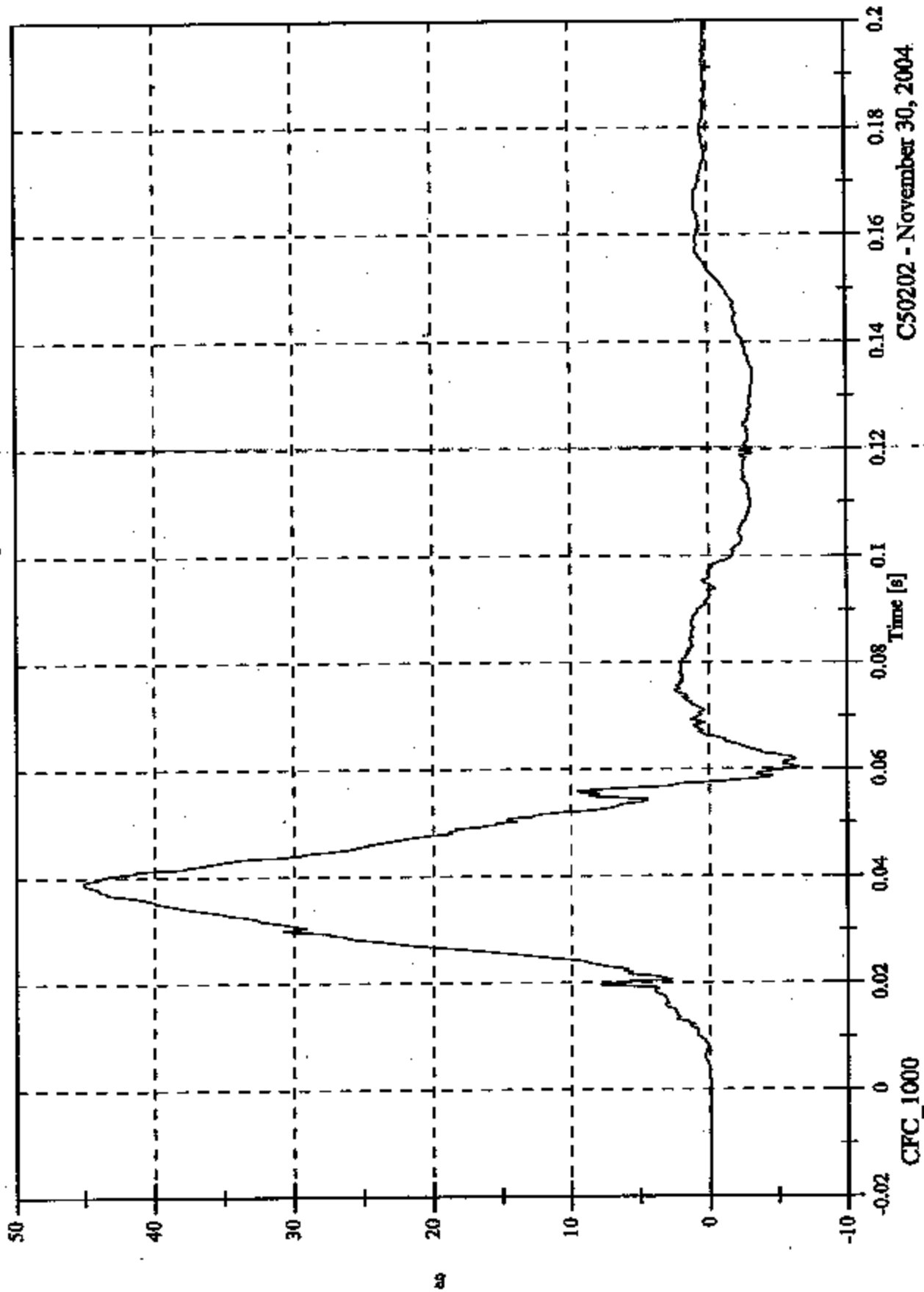


C50202 - November 30, 2004

2005 214 Indignant Test 2 - 2005 Ford Mustang

V2P1 Pelvic y

Max: 45.1 [g] at 0.039 [s]
Min: -6.6 [g] at 0.060 [s]



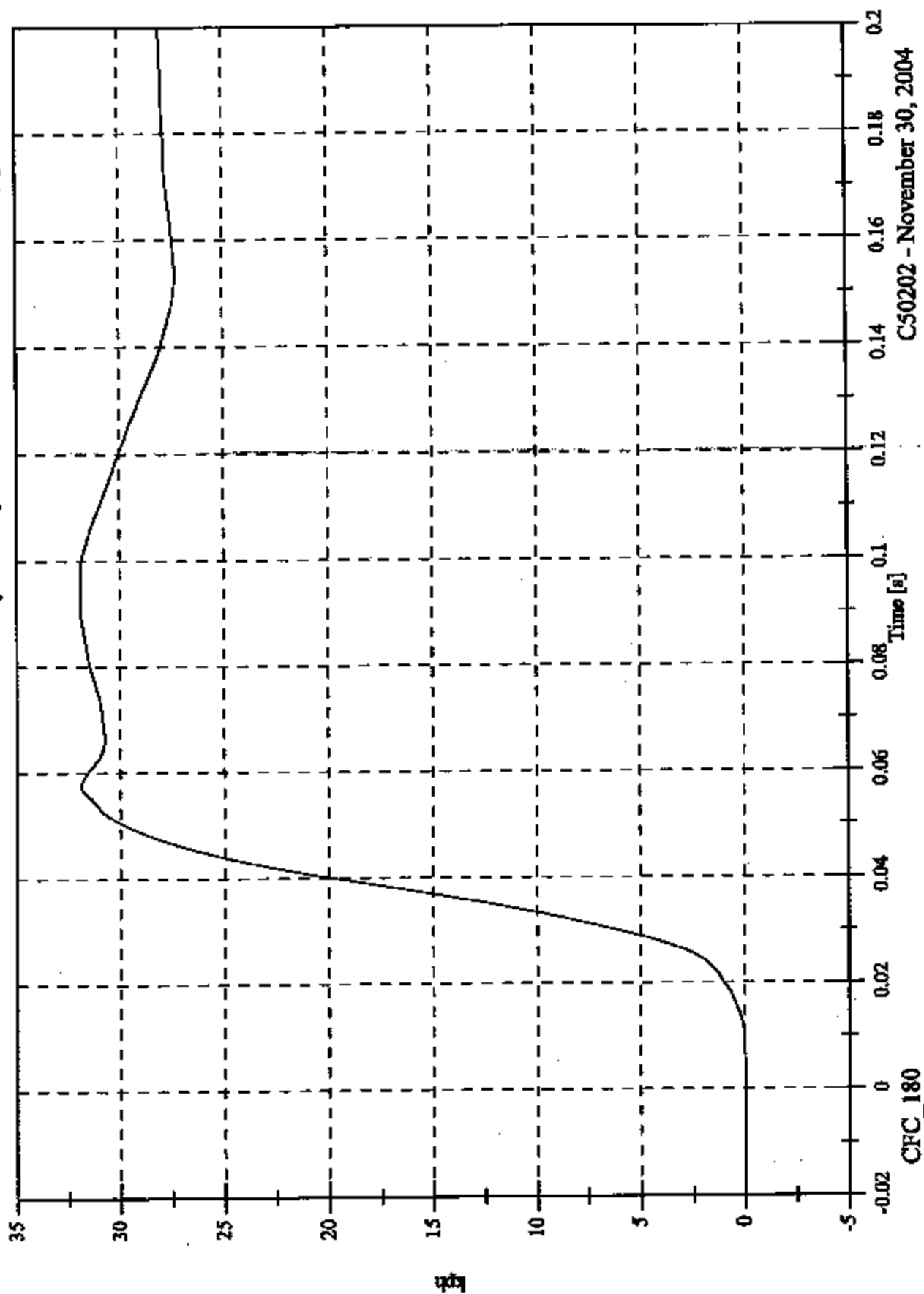
C50202 - November 30, 2004

2005 214 Indignant Test 2 - 2005 Ford Mustang

Max: 31.9 [kph] at 0.097 [s]

Min: -0.0 [kph] at 0.003 [s]

V2P1 Pelvic y Velocity



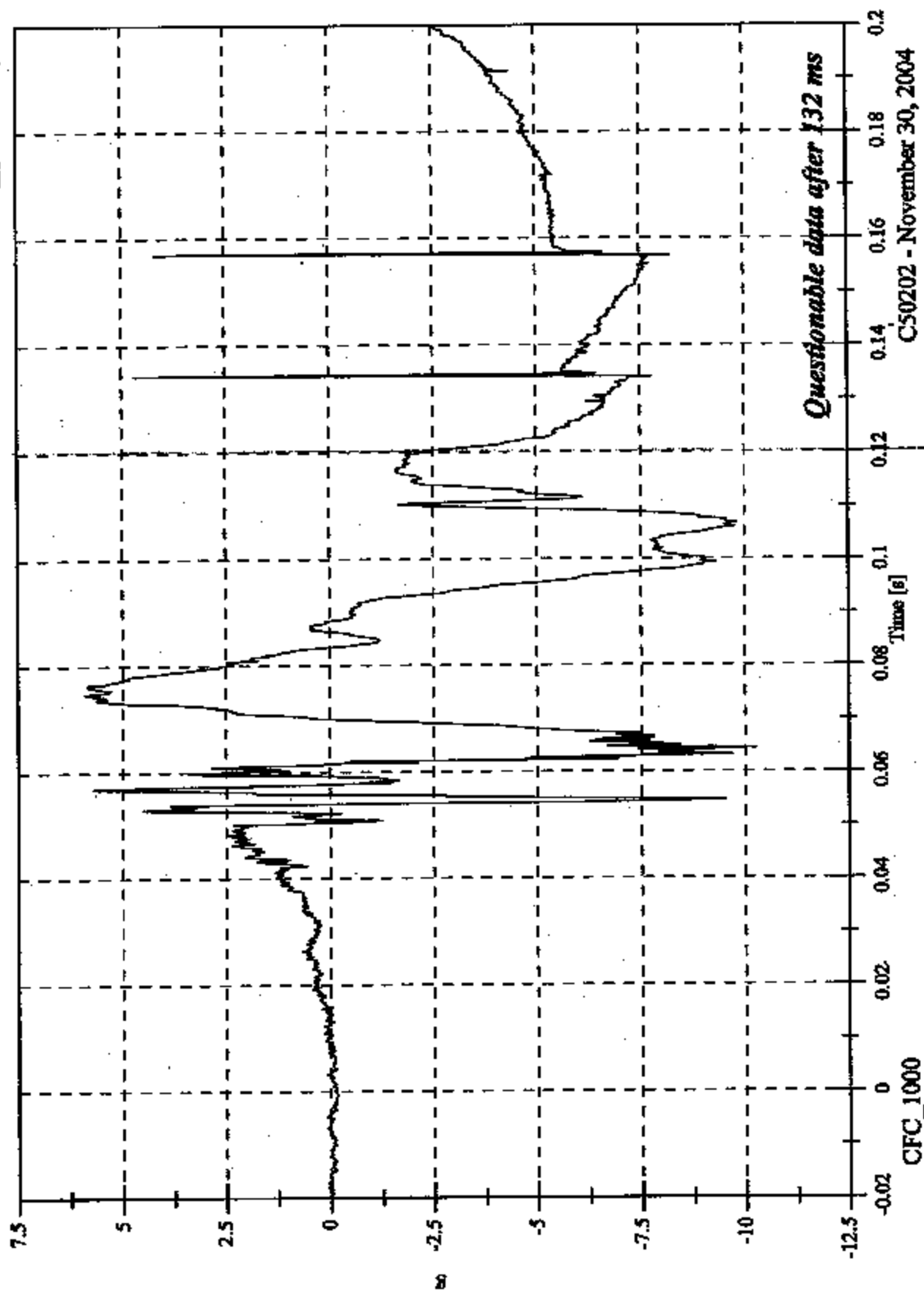
CFC_180

C50202 - November 30, 2004

2005 214 Indicant Test 2 - 2005 Ford Mustang

Max: 5.9 [g] at 0.075 [s]
Min: -10.3 [g] at 0.064 [s]

VZP4 Head x

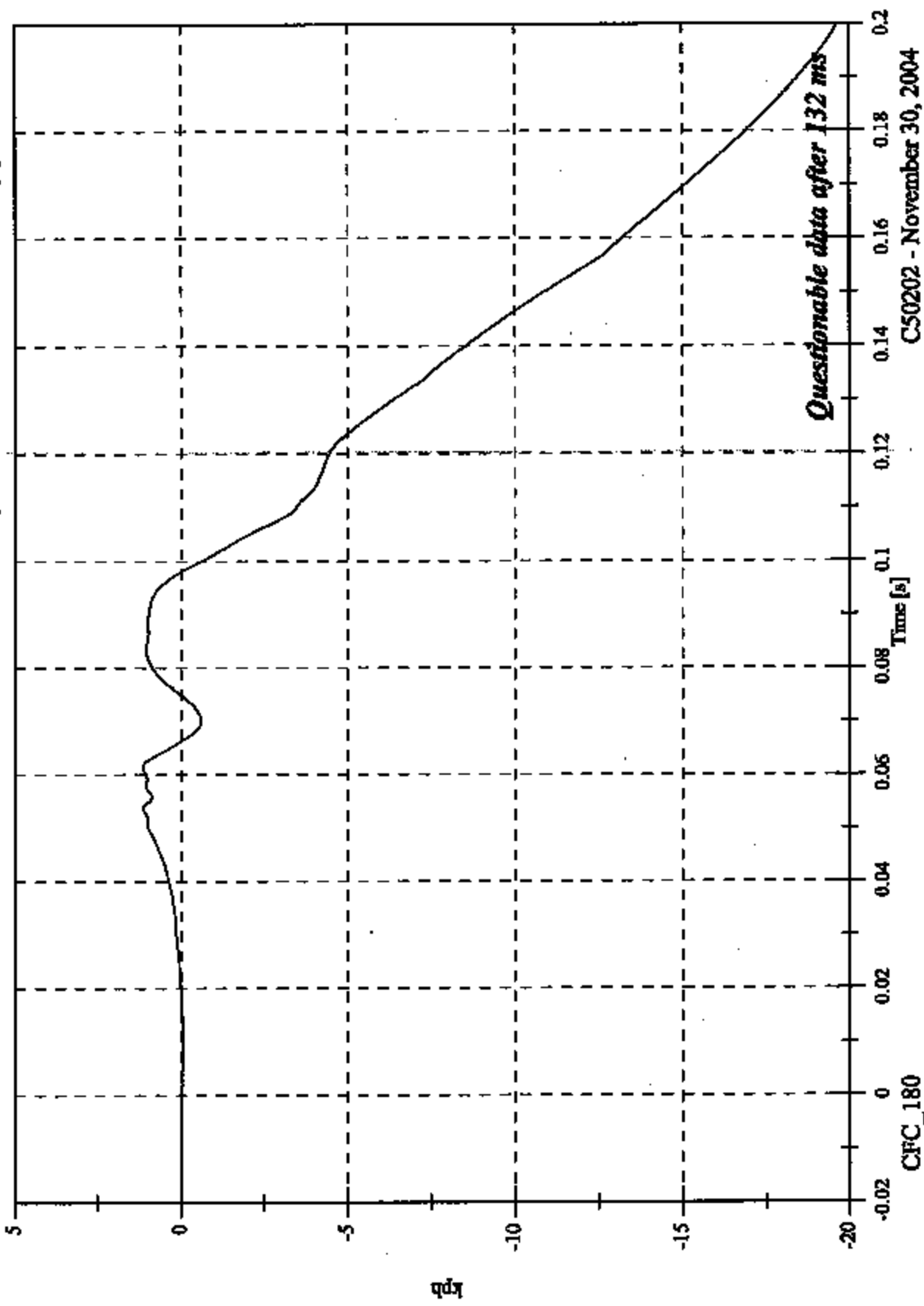


C50202 - November 30, 2004

2005 214 Indignant Test 2 - 2005 Ford Mustang

V2P4 Head x Velocity

Max: 1.2 [kph] at 0.061 [s]
Min: -19.7 [kph] at 0.200 [s]

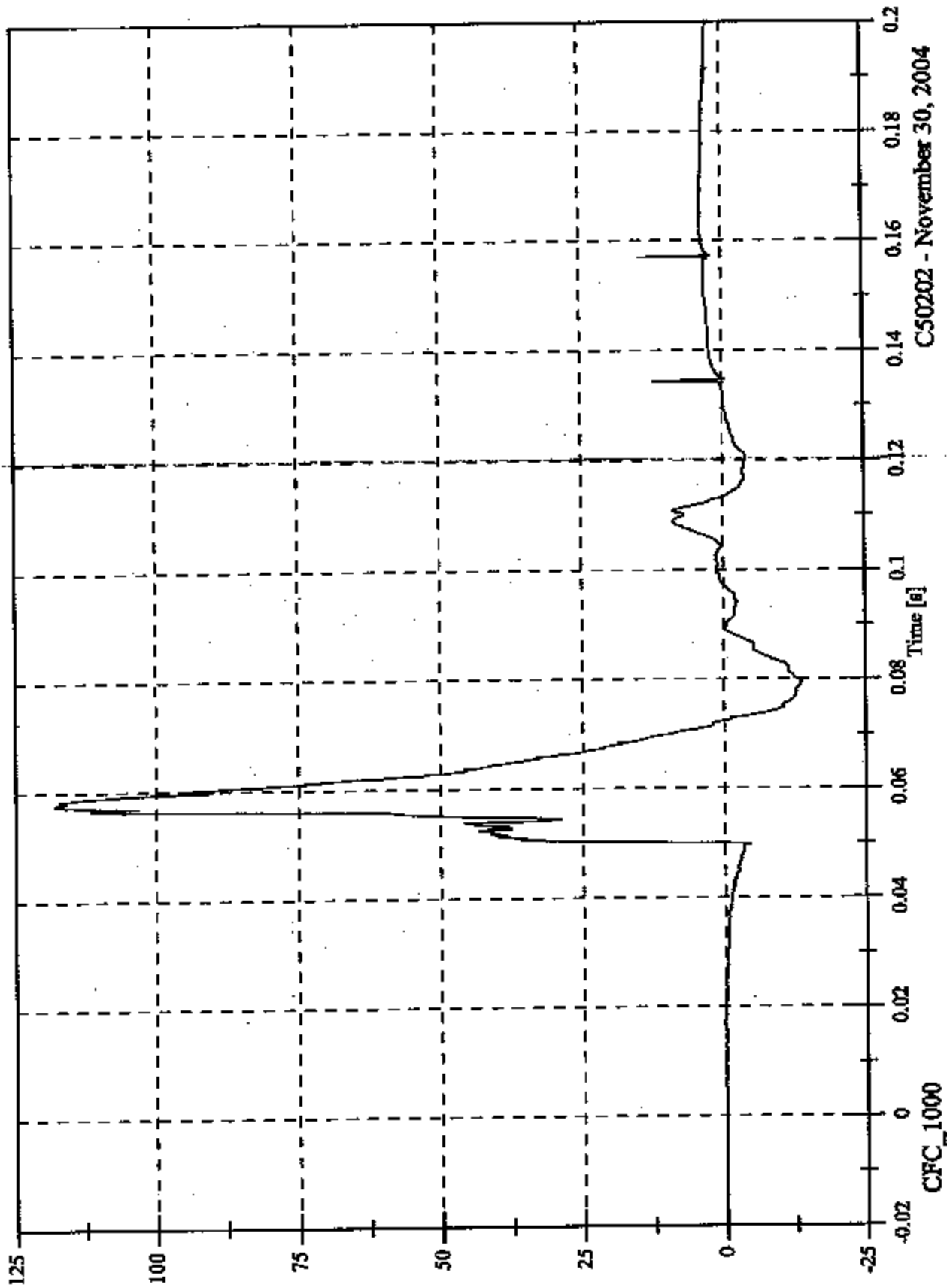


C50202 - November 30, 2004

2005 214 Inducant Test 2 - 2005 Ford Mustang

V2P4 Head y

Max: 117.8 [g] at 0.057 [s]
Min: -13.7 [g] at 0.079 [s]

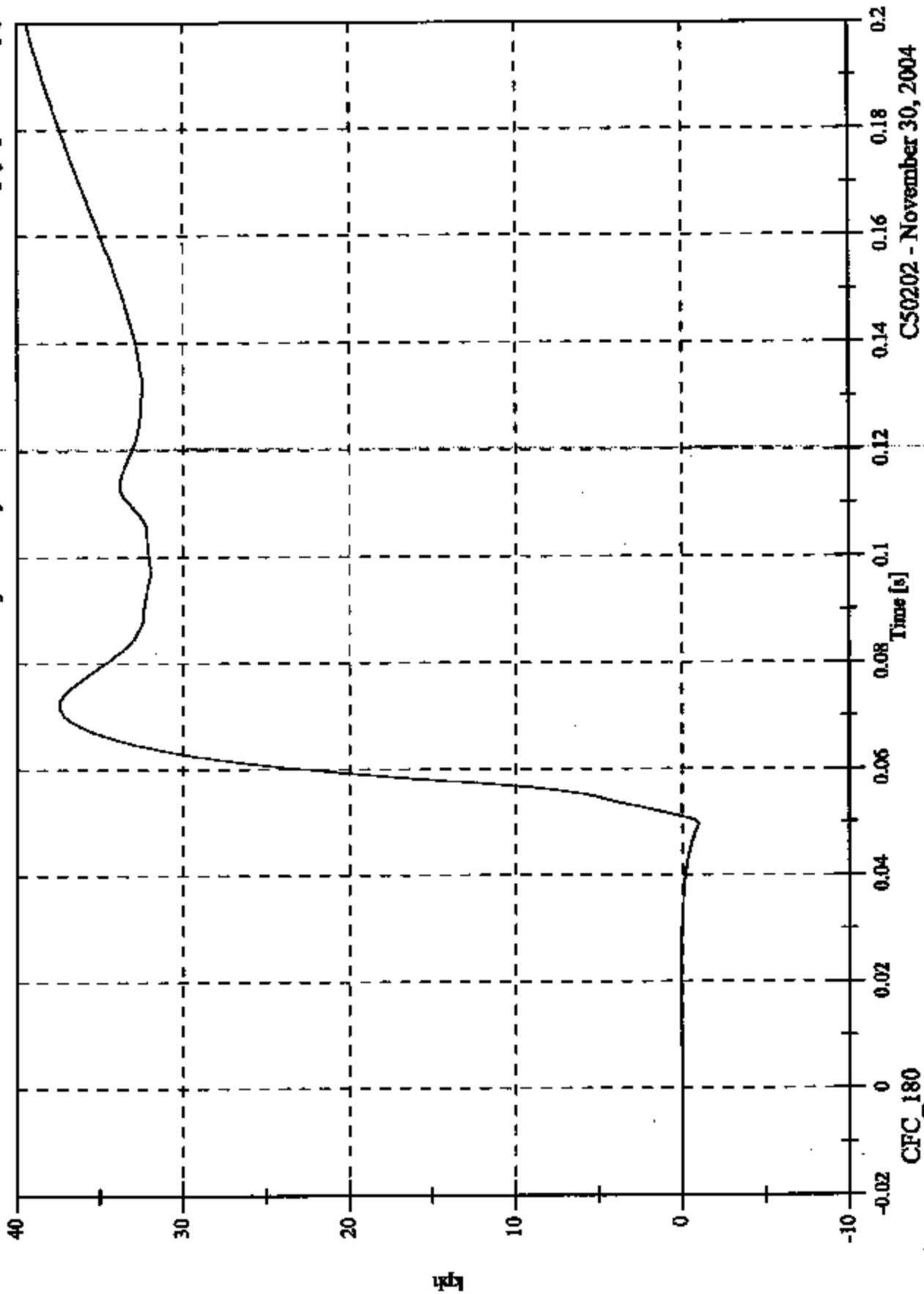


C50202 - November 30, 2004

2005 214 Inducant Test 2 - 2005 Ford Mustang

Max: 39.4 [kph] at 0.200 [s]
Min: -1.0 [kph] at 0.049 [s]

V2P4 Head y Velocity

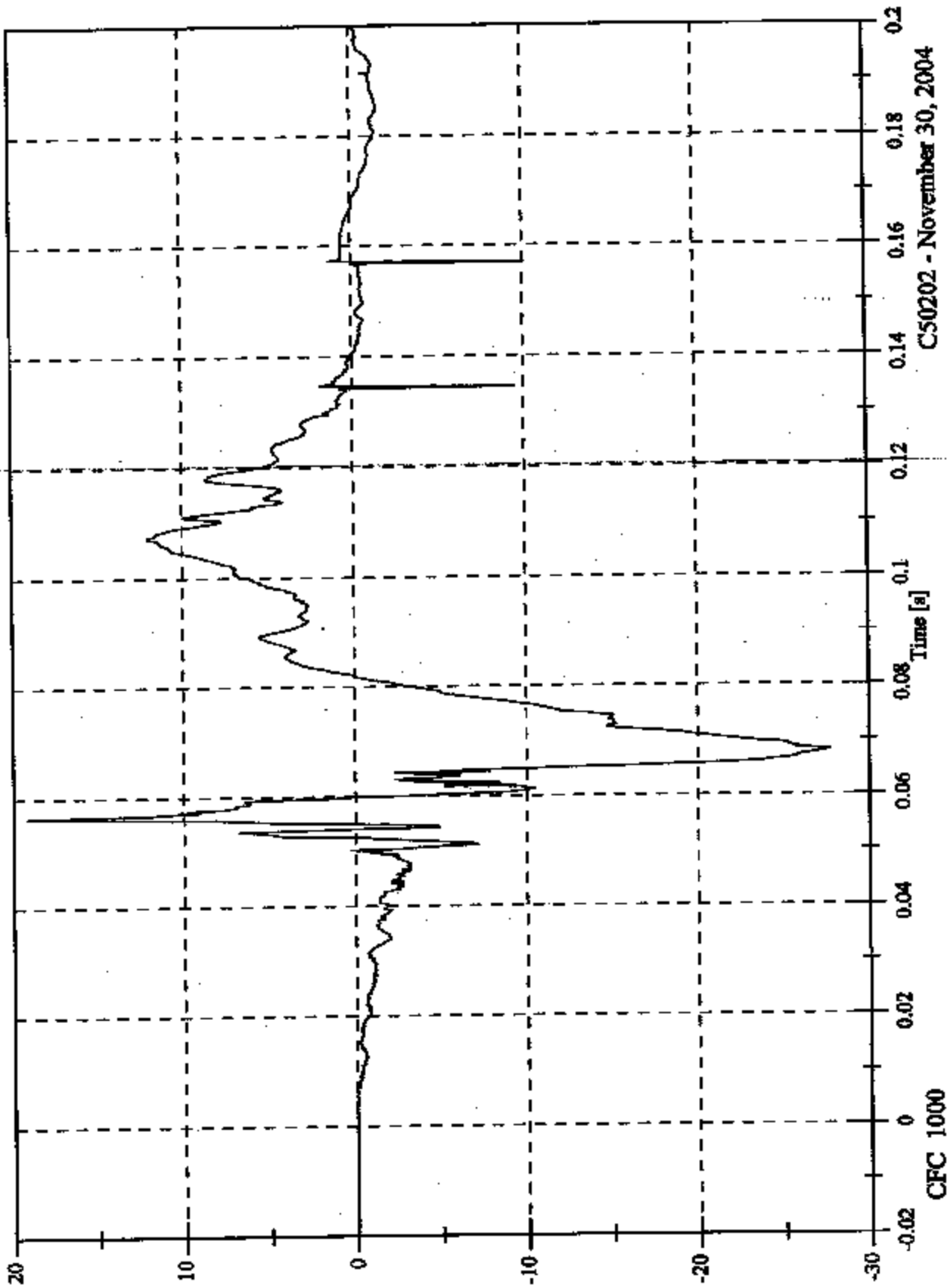


C50202 - November 30, 2004

2005 214 Indicant Test 2 - 2005 Ford Mustang

Max: 19.1 [g] at 0.056 [s]
Min: -27.7 [g] at 0.068 [s]

V2P4 Head z

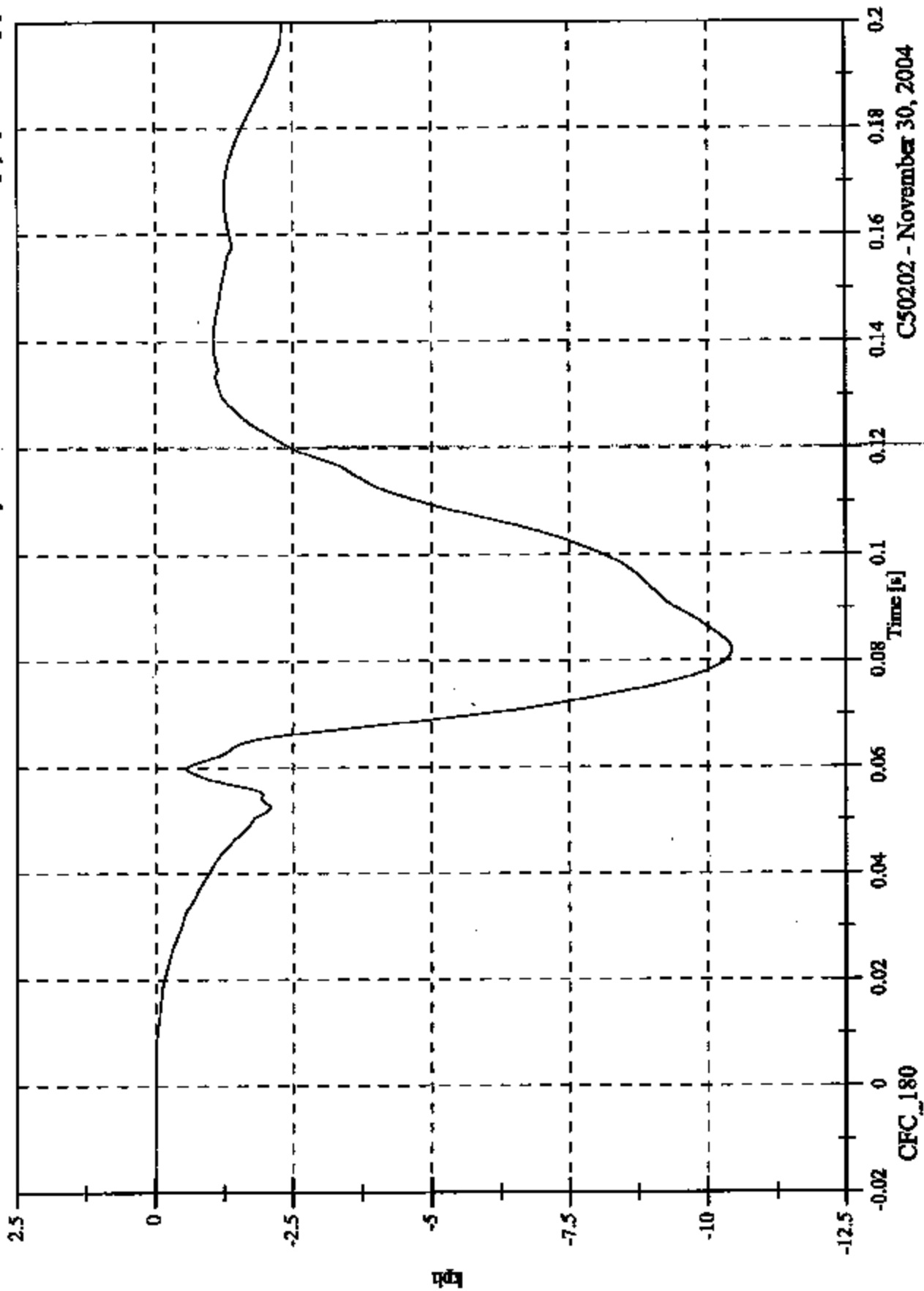


C50202 - November 30, 2004

2005 214 Inducant Test 2 - 2005 Ford Mustang

V2P4 Head z Velocity

Max: 0.0 [kph] at -0.020 [s]
Min: -10.4 [kph] at 0.082 [s]

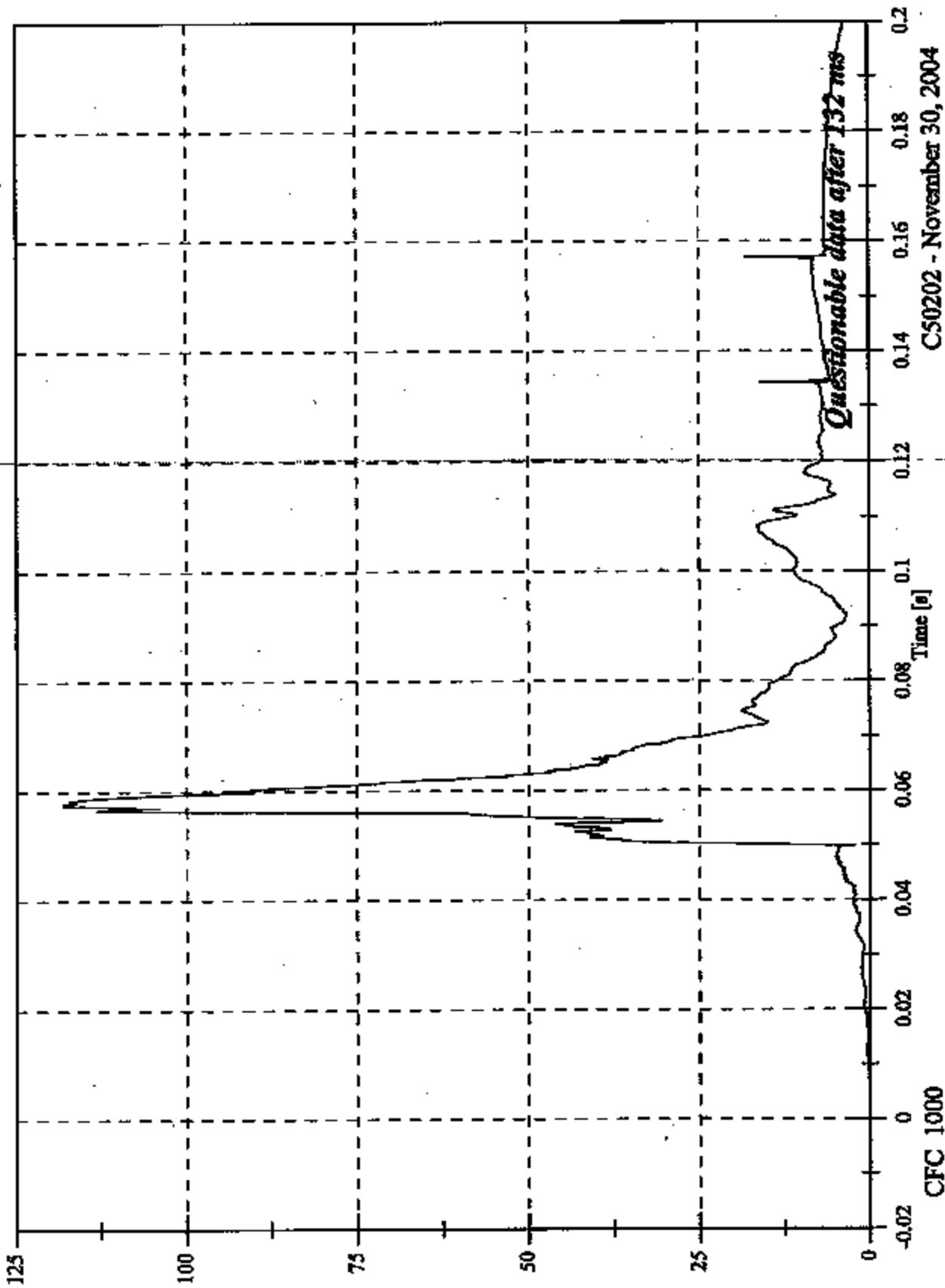


C50202 - November 30, 2004

2005 214 Inducant Test 2 - 2005 Ford Mustang

V2P4 Head Resultant

Max: 118.2 [g] at 0.057 [s]
Min: 0.0 [g] at -0.012 [s]

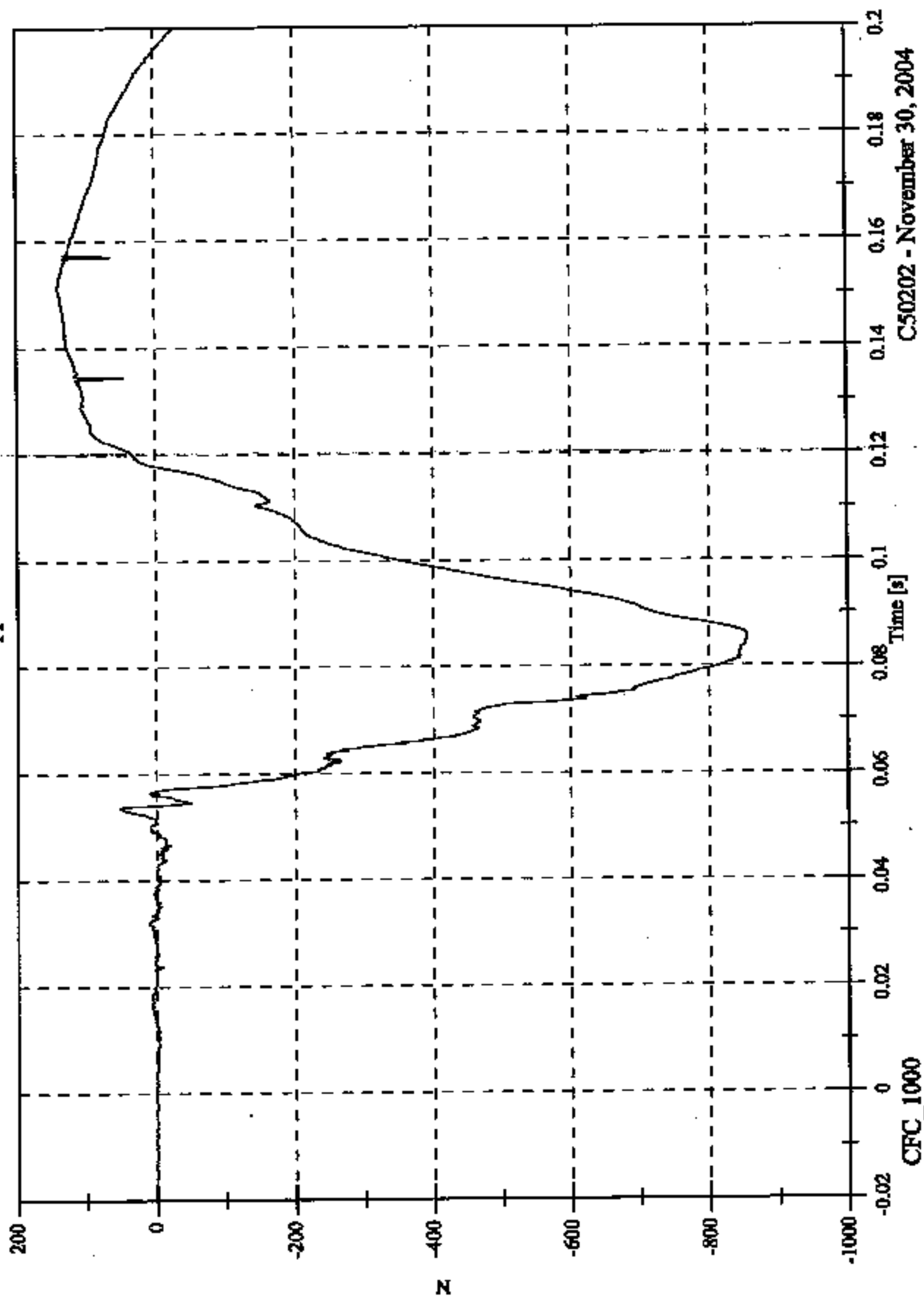


CS0202 - November 30, 2004

2005 214 Inducant Test 2 - 2005 Ford Mustang

Max: 140.2 [N] at 0.151 [s]
Min: -855.4 [N] at 0.086 [s]

V2P4 Upper Neck Fx

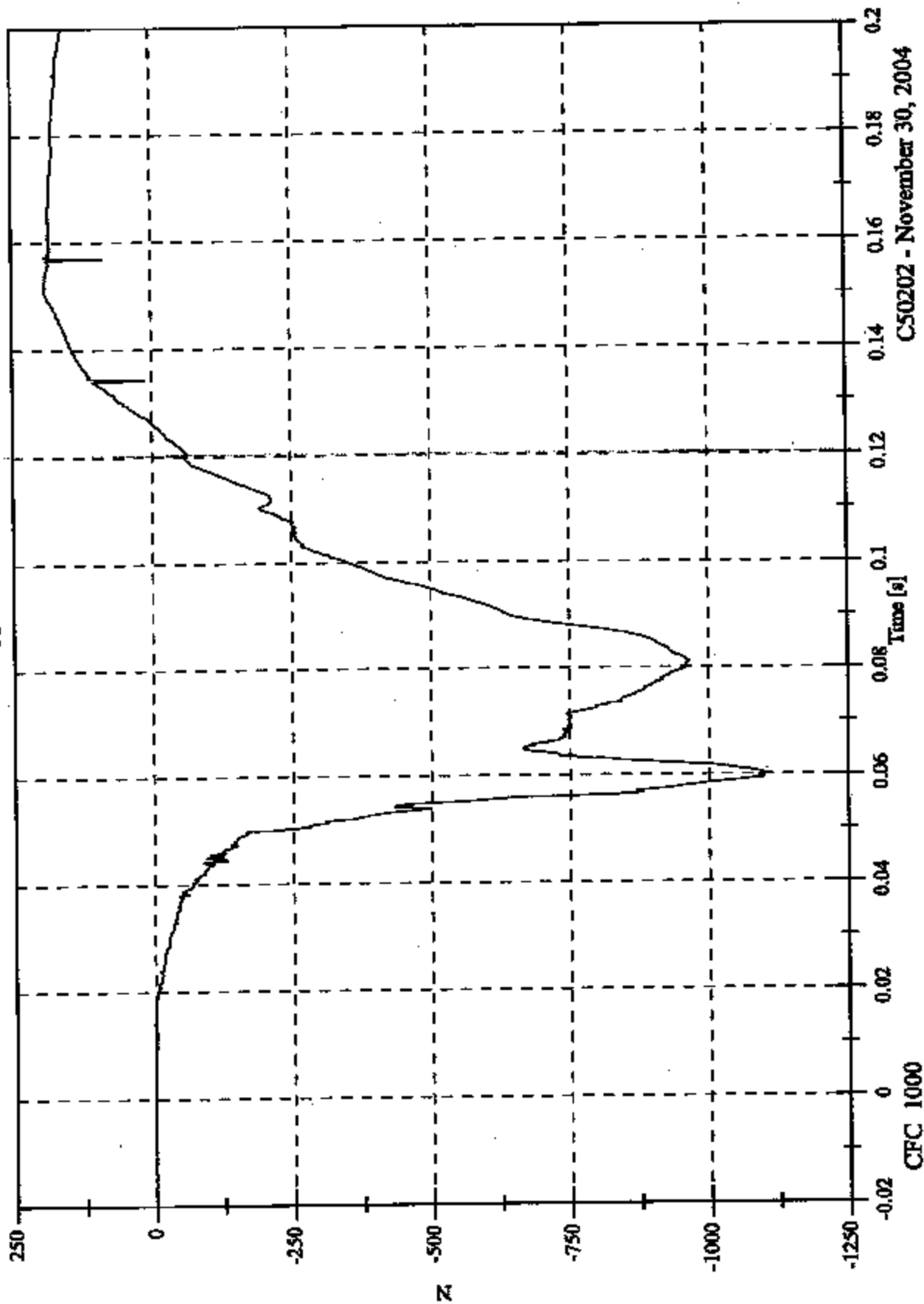


C50202 - November 30, 2004

2005 214 Indicant Test 2 - 2005 Ford Mustang

V2P4 Upper Neck Fy

Max: 193.3 [N] at 0.152 [s]
Min: -1111.6 [N] at 0.060 [s]

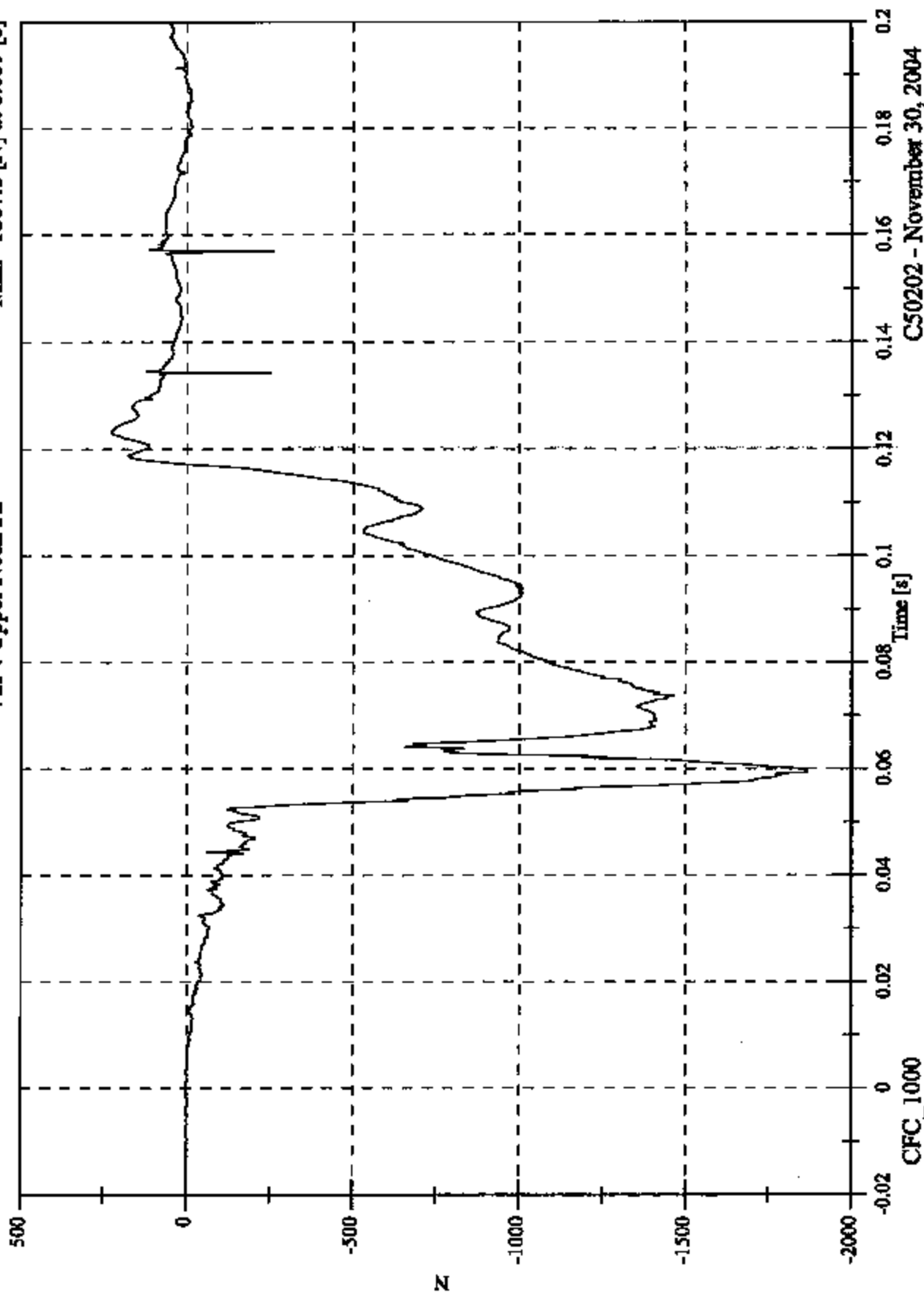


C50202 - November 30, 2004

2005 214 Inducant Test 2 - 2005 Ford Mustang

V2P4 Upper Neck Fz

Max: 227.6 [N] at 0.123 [s]
Min: -1867.8 [N] at 0.059 [s]

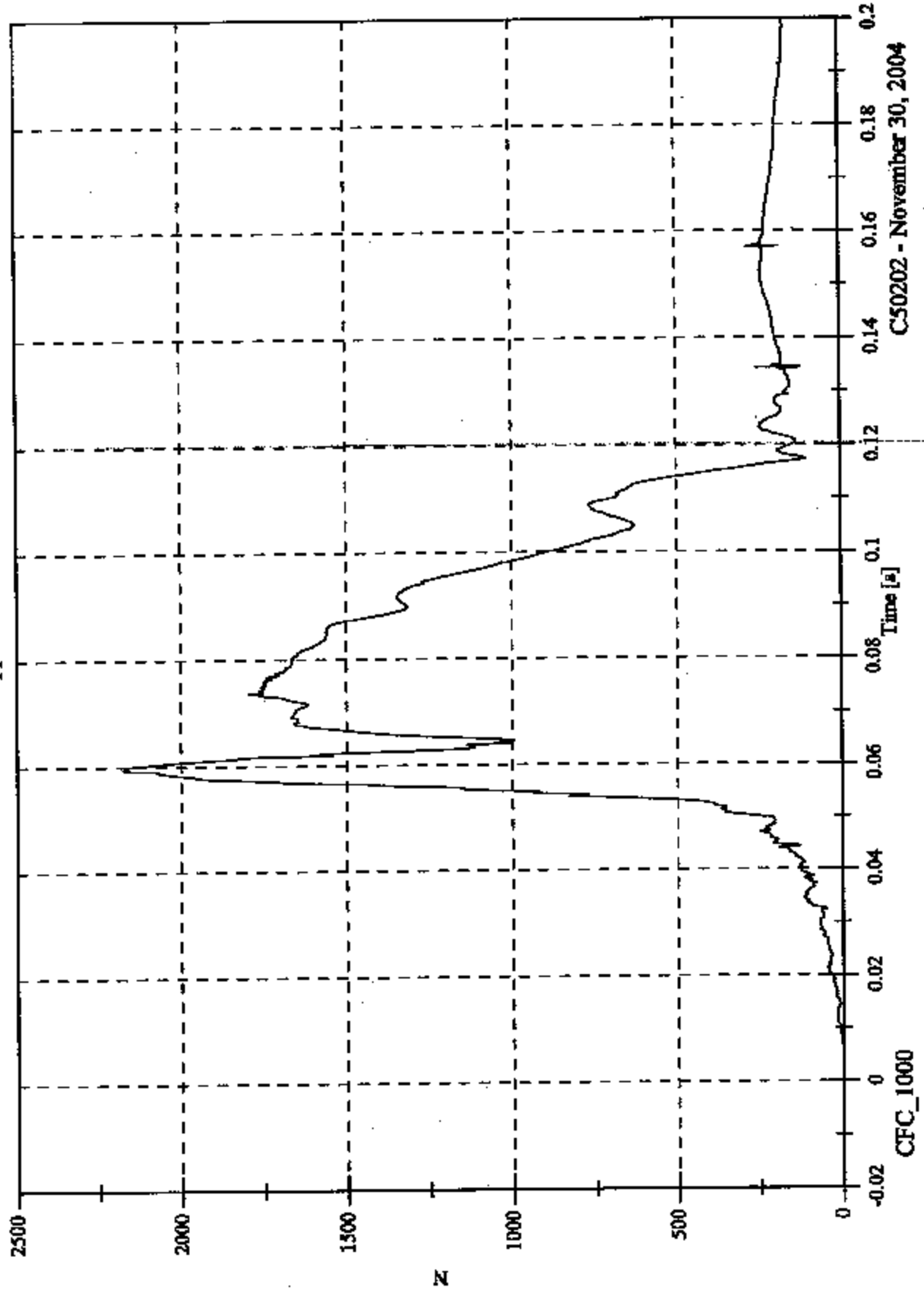


C50202 - November 30, 2004

2005 214 Indicant Test 2 - 2005 Ford Mustang

VZP4 Upper Neck F Resultant

Max: 2175.5 [N] at 0.059 [s]
Min: 0.1 [N] at -0.015 [s]

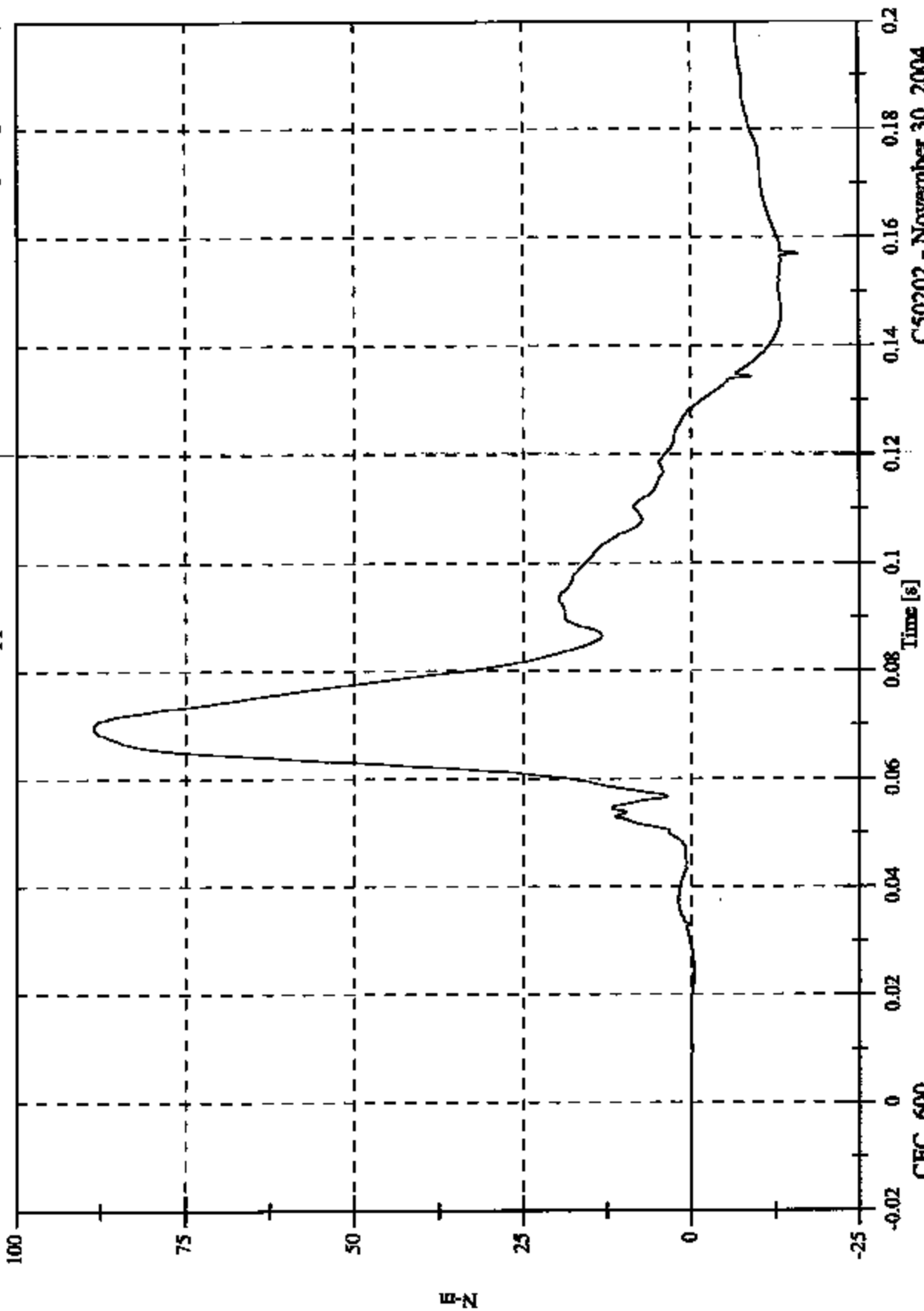


C50202 - November 30, 2004

2005 214 Inducant Test 2 - 2005 Ford Mustang

V2P4 Upper Neck Mx

Max: 88.6 [N-m] at 0.070 [s]
Min: -16.0 [N-m] at 0.157 [s]

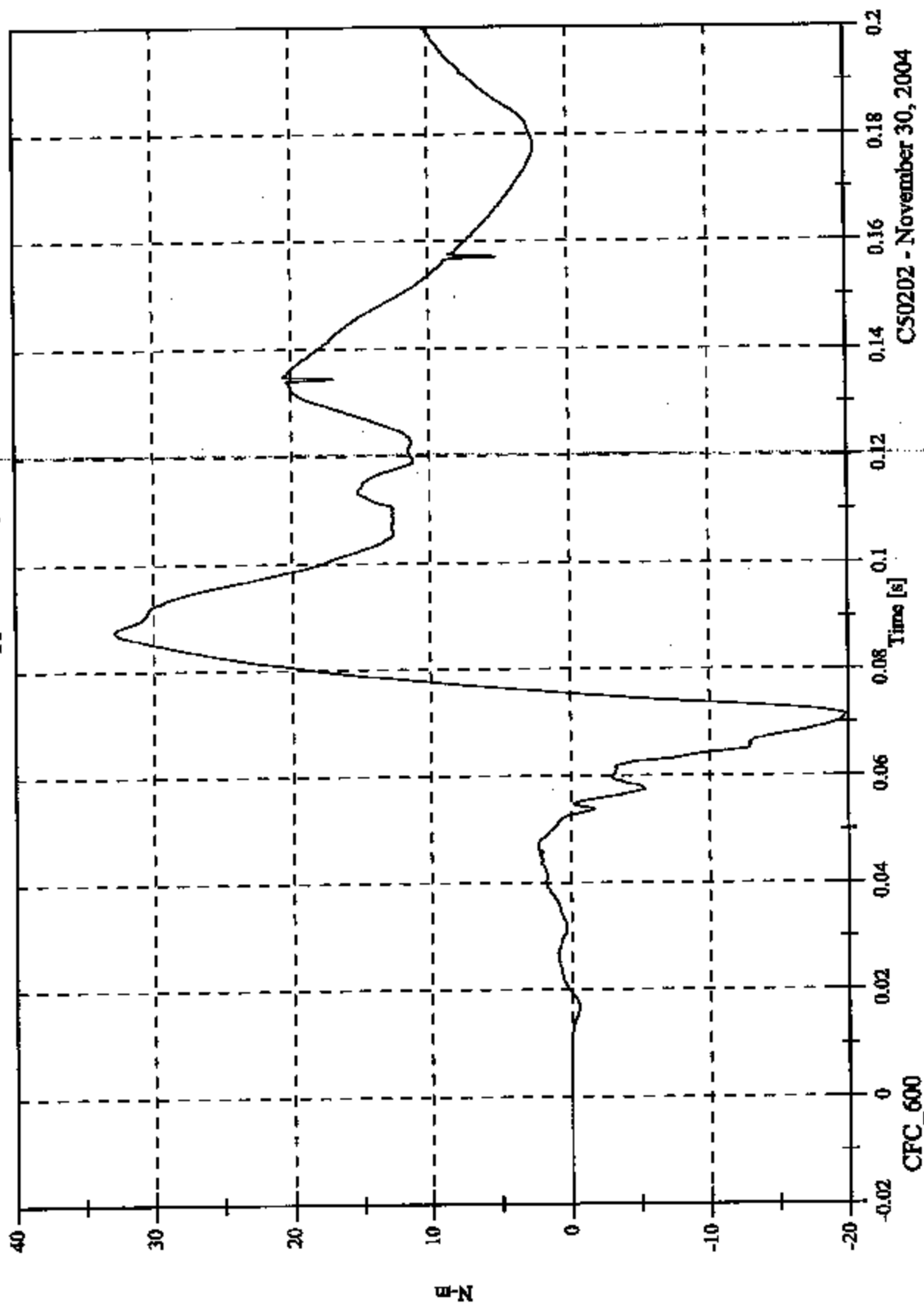


C50202 - November 30, 2004

2005 214 Inducant Test 2 - 2005 Ford Mustang

V2P4 Upper Neck My

Max: 32.8 [N-m] at 0.087 [s]
Min: -19.8 [N-m] at 0.071 [s]



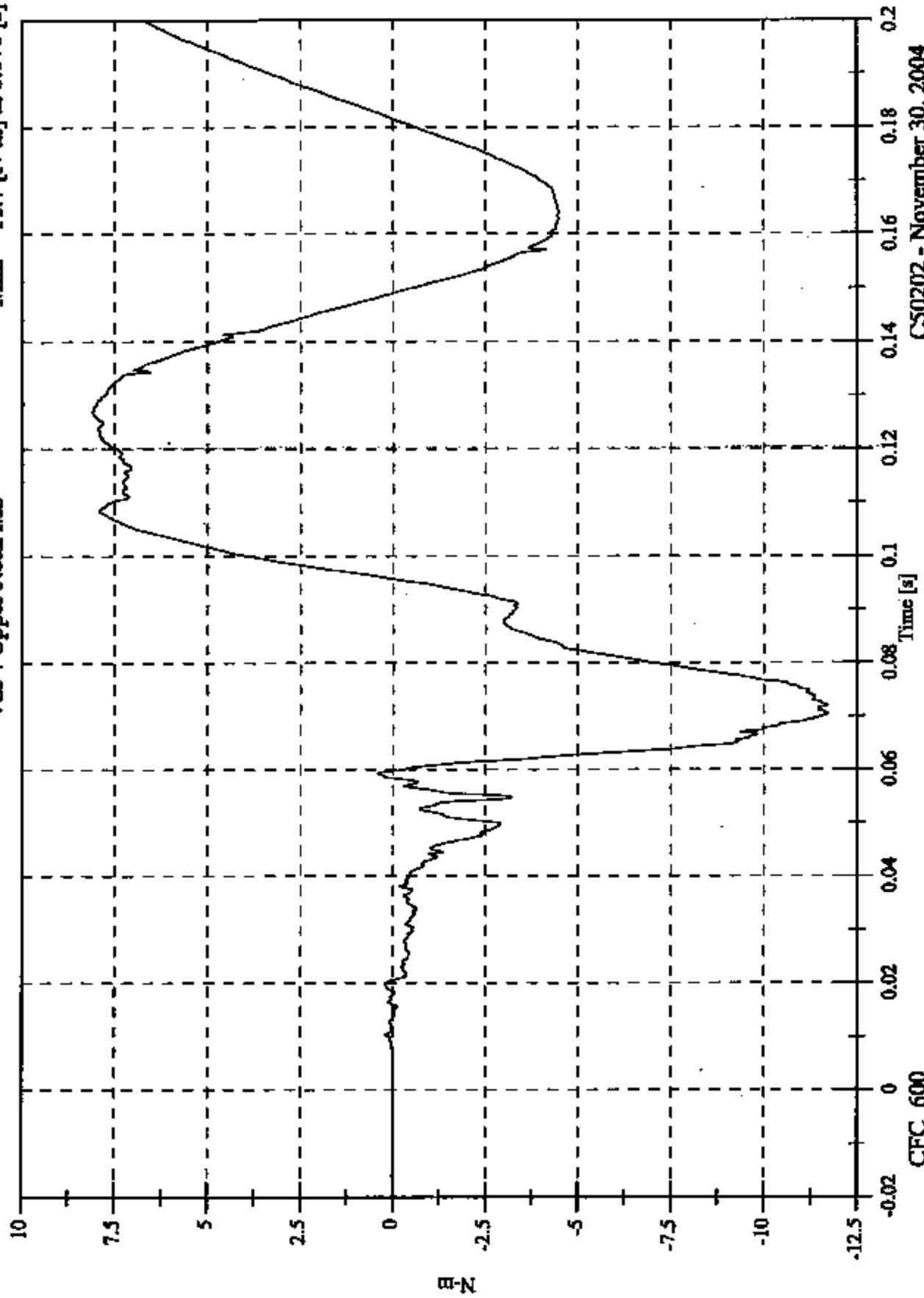
C50202 - November 30, 2004

2005 214 Inducant Test 2 - 2005 Ford Mustang

V2P4 Upper Neck Mz

Max: 8.1 [N-m] at 0.127 [s]

Min: -11.7 [N-m] at 0.070 [s]



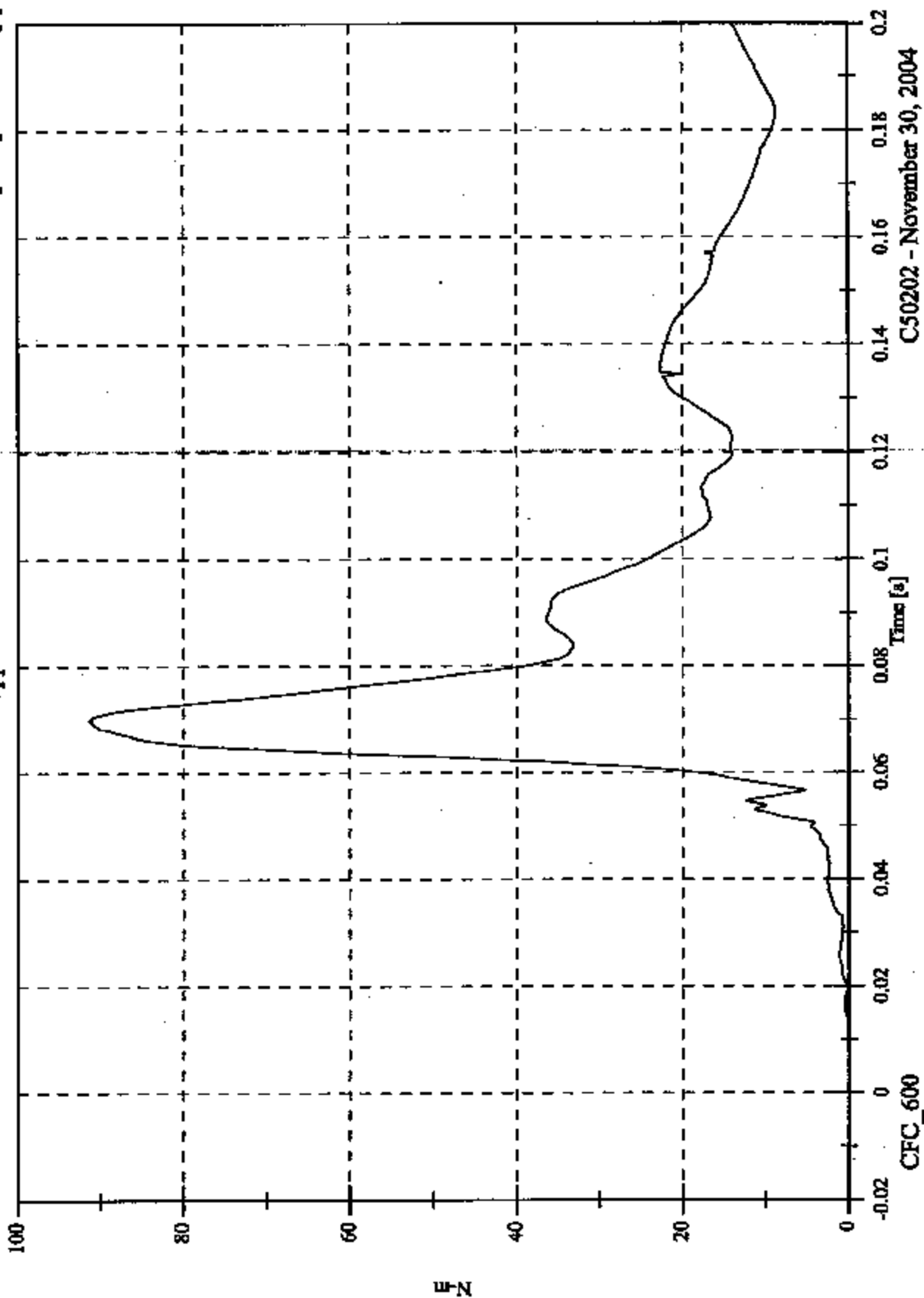
CS0202 - November 30, 2004

2005 214 Indignant Test 2 - 2005 Ford Mustang

V2P4 Upper Neck M Resultant

Max: 91.4 [N-m] at 0.070 [s]

Min: 0.0 [N-m] at -0.006 [s]

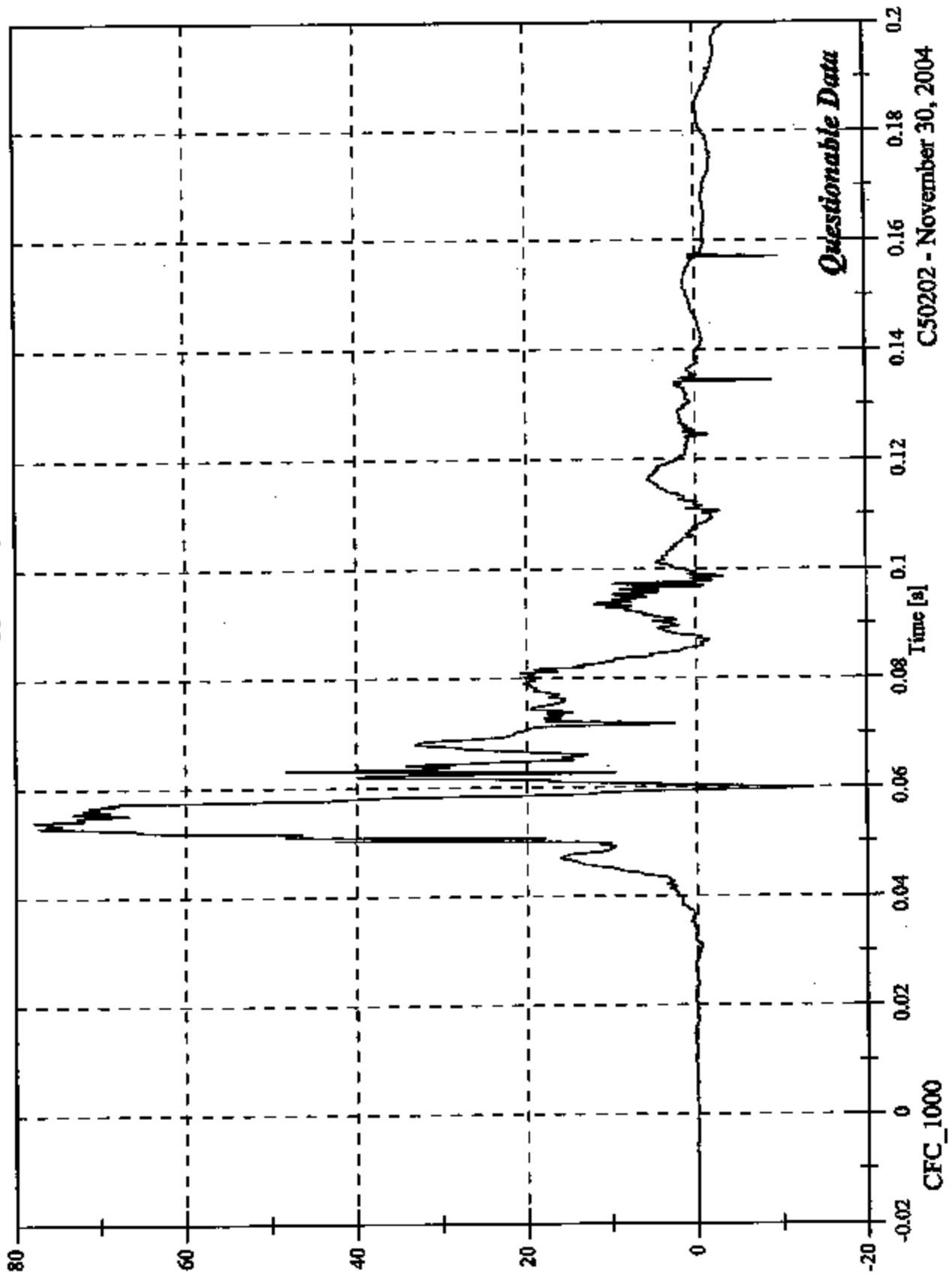


C50202 - November 30, 2004

2005 214 Inducant Test 2 - 2005 Ford Mustang

V2P4 Upper Rib y

Max: 77.8 [g] at 0.054 [s]
Min: -13.6 [g] at 0.060 [s]

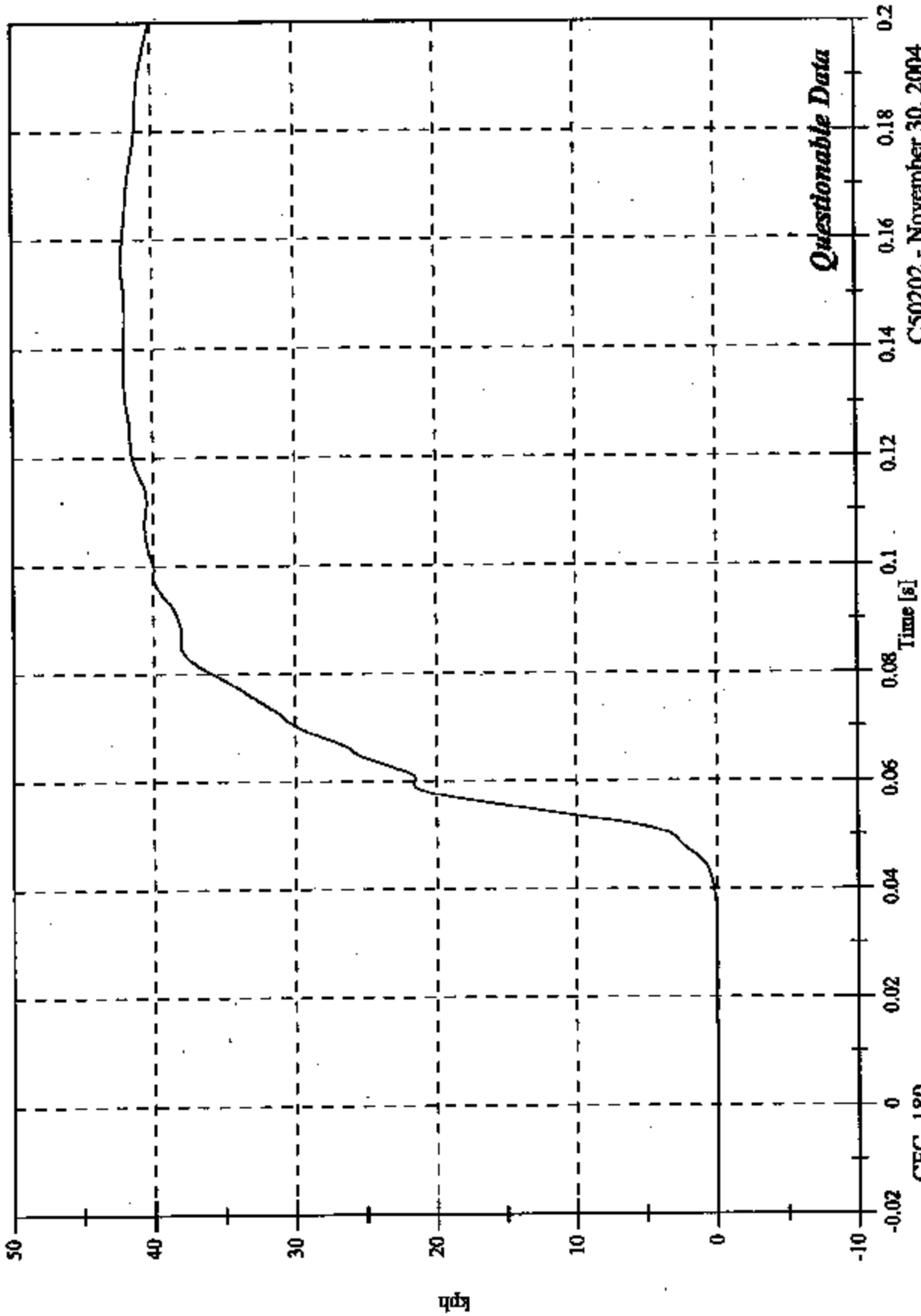


C50202 - November 30, 2004

2005 214 Inducant Test 2 - 2005 Ford Mustang

VZP4 Upper Rib y Velocity

Max: 42.2 [kph] at 0.156 [s]
Min: -0.0 [kph] at -0.020 [s]



Questionable Data

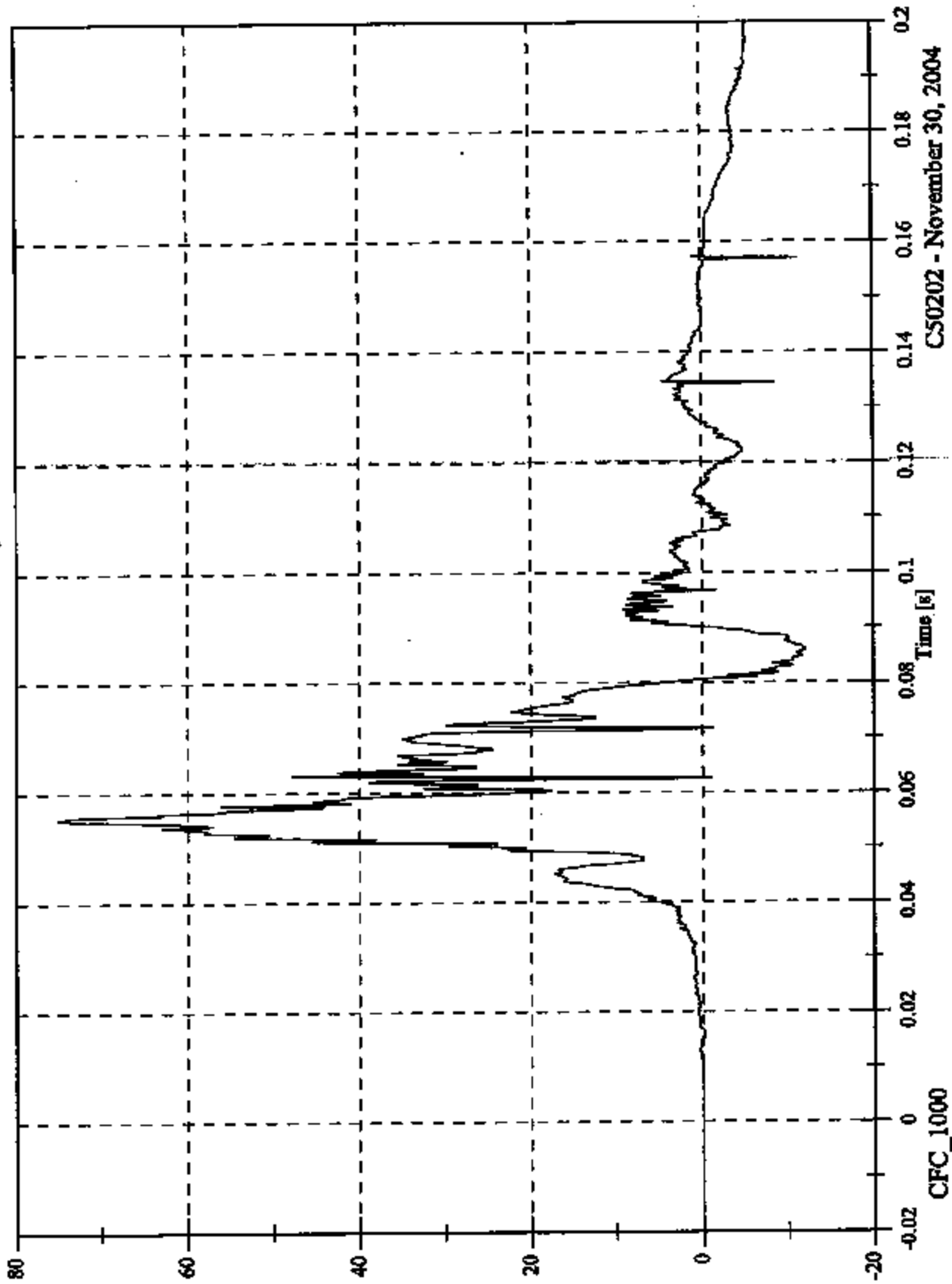
C50202 - November 30, 2004

CFC_180

2005 214 Inducant Test 2 - 2005 Ford Mustang

V2P4 Lower Rib y

Max: 75.1 [g] at 0.055 [s]
Min: -12.0 [g] at 0.086 [s]

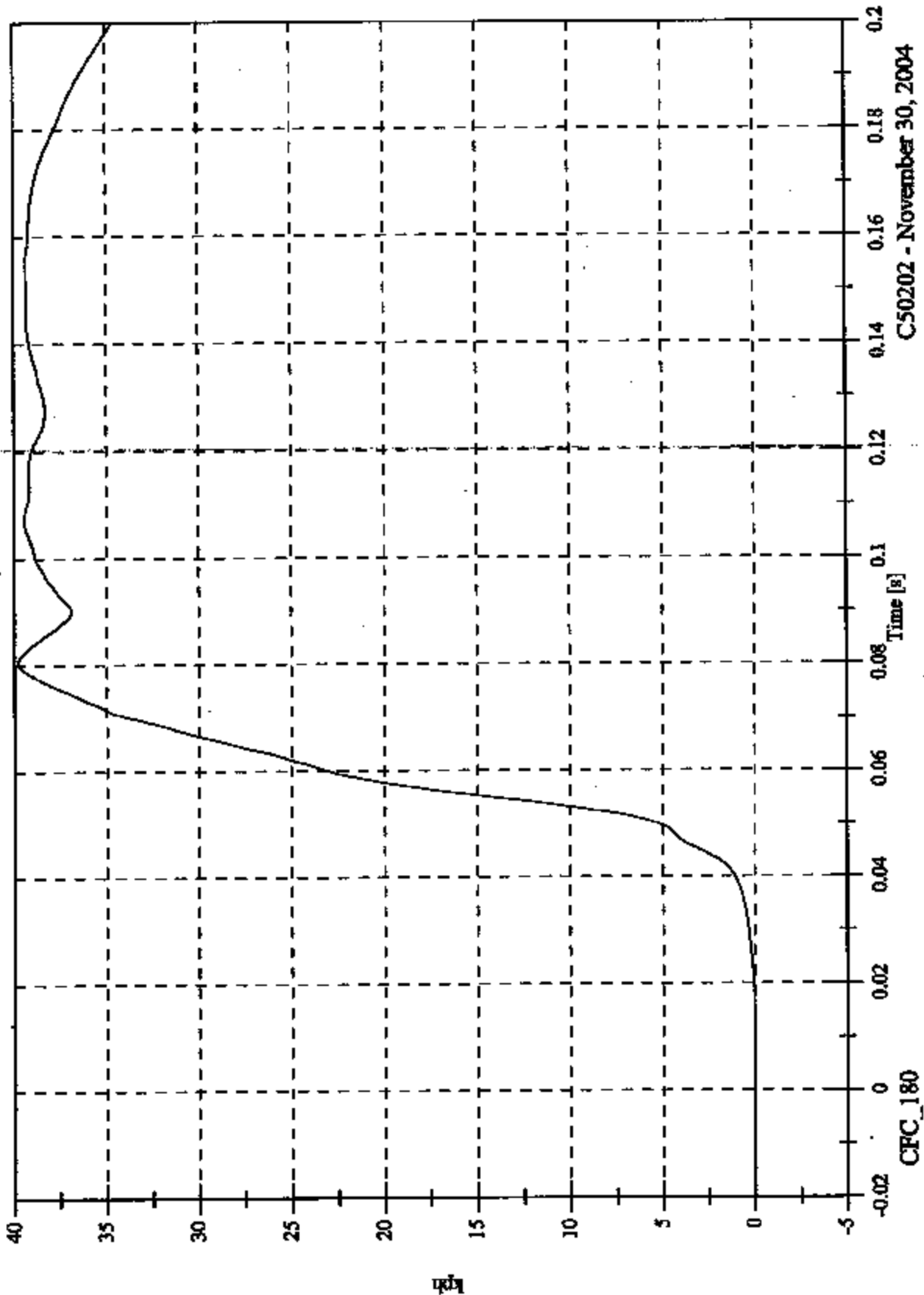


CS0202 - November 30, 2004

2005 214 Indicant Test 2 - 2005 Ford Mustang

Max: 39.8 [kph] at 0.080 [s]
Min: -0.0 [kph] at -0.020 [s]

V2P4 Lower Rib y Velocity

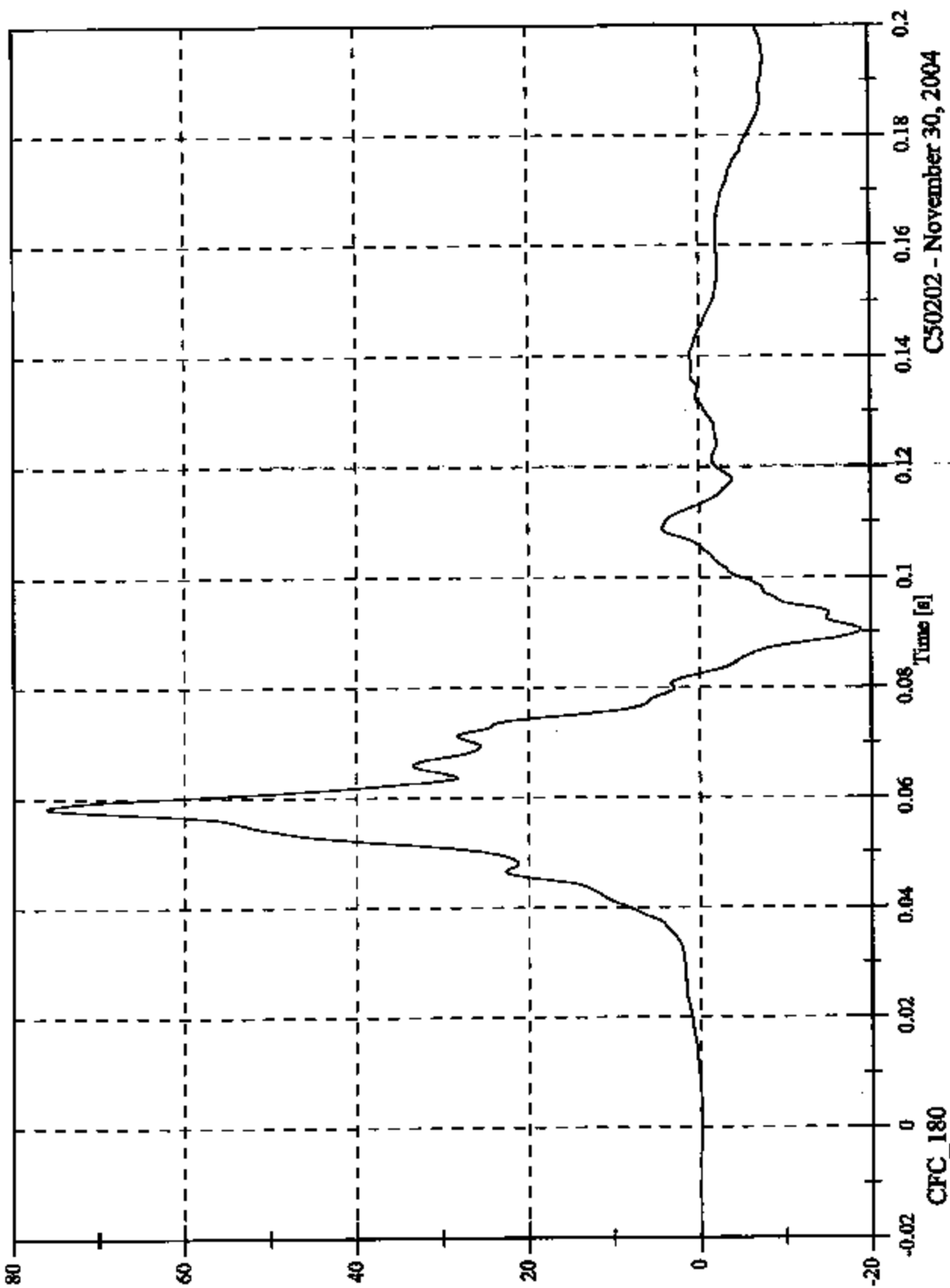


C50202 - November 30, 2004

2005 214 Indicant Test 2 - 2005 Ford Mustang

Max: 76.1 [g] at 0.058 [s]
Min: -18.7 [g] at 0.090 [s]

V2P4 Lower Spine y

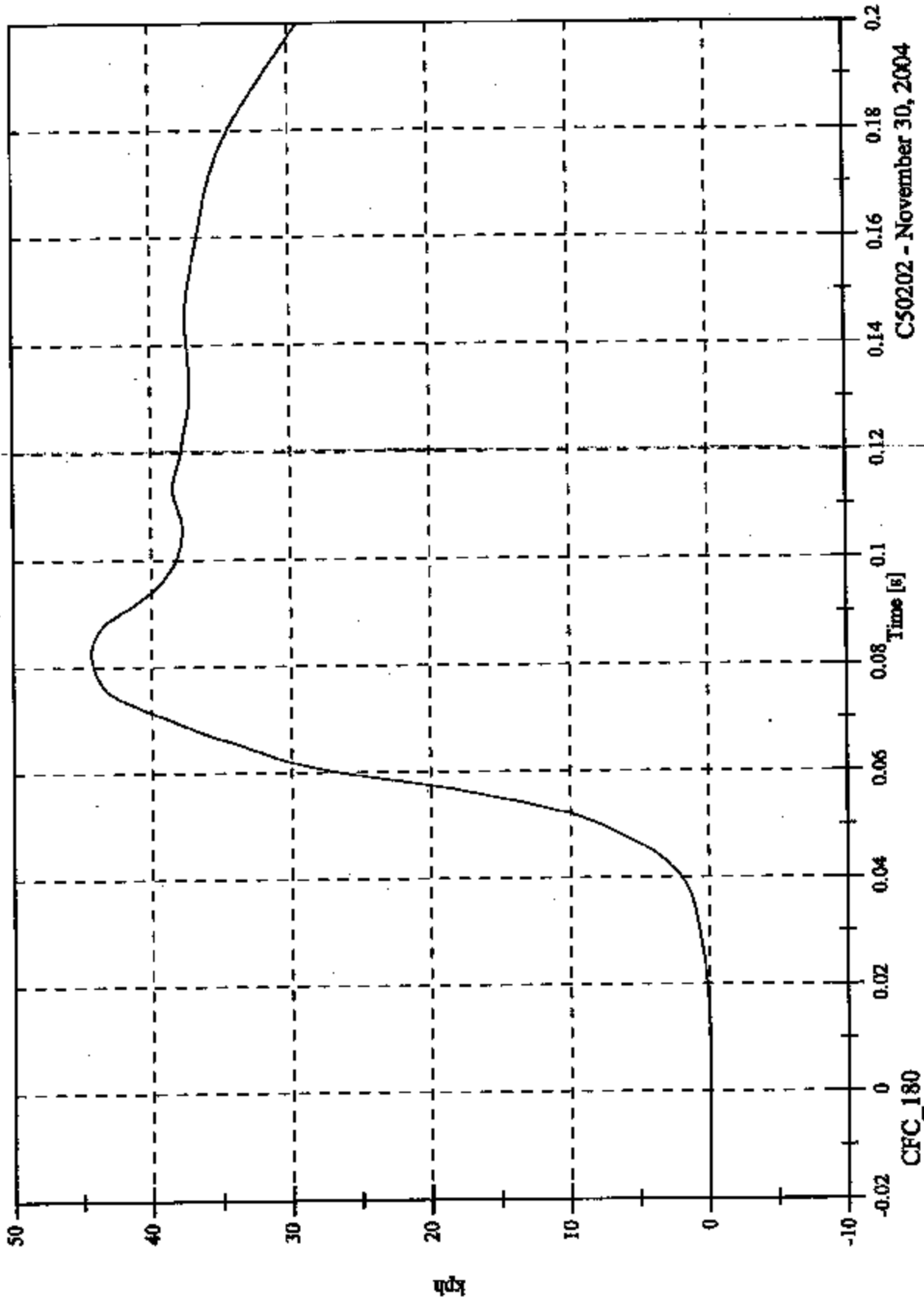


C50202 - November 30, 2004

2005 214 Inducant Test 2 - 2005 Ford Mustang

V2P4 Lower Spine y Velocity

Max: 44.4 [kph] at 0.082 [s]
Min: -0.0 [kph] at 0.007 [s]

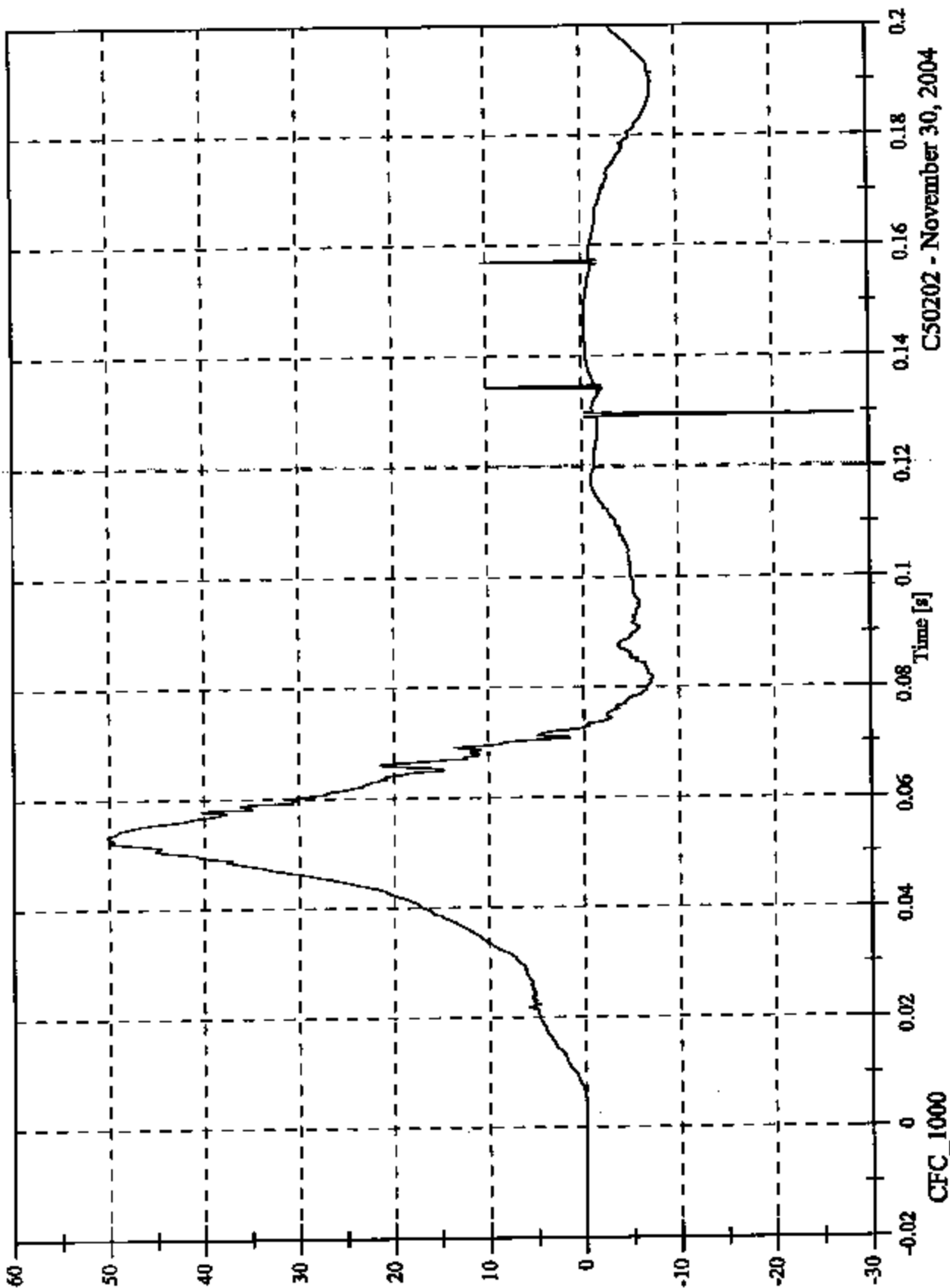


C50202 - November 30, 2004

2005 214 Indicant Test 2 - 2005 Ford Mustang

Max: 50.3 [g] at 0.053 [s]
Min: -28.4 [g] at 0.129 [s]

VZP4 Pelvic y

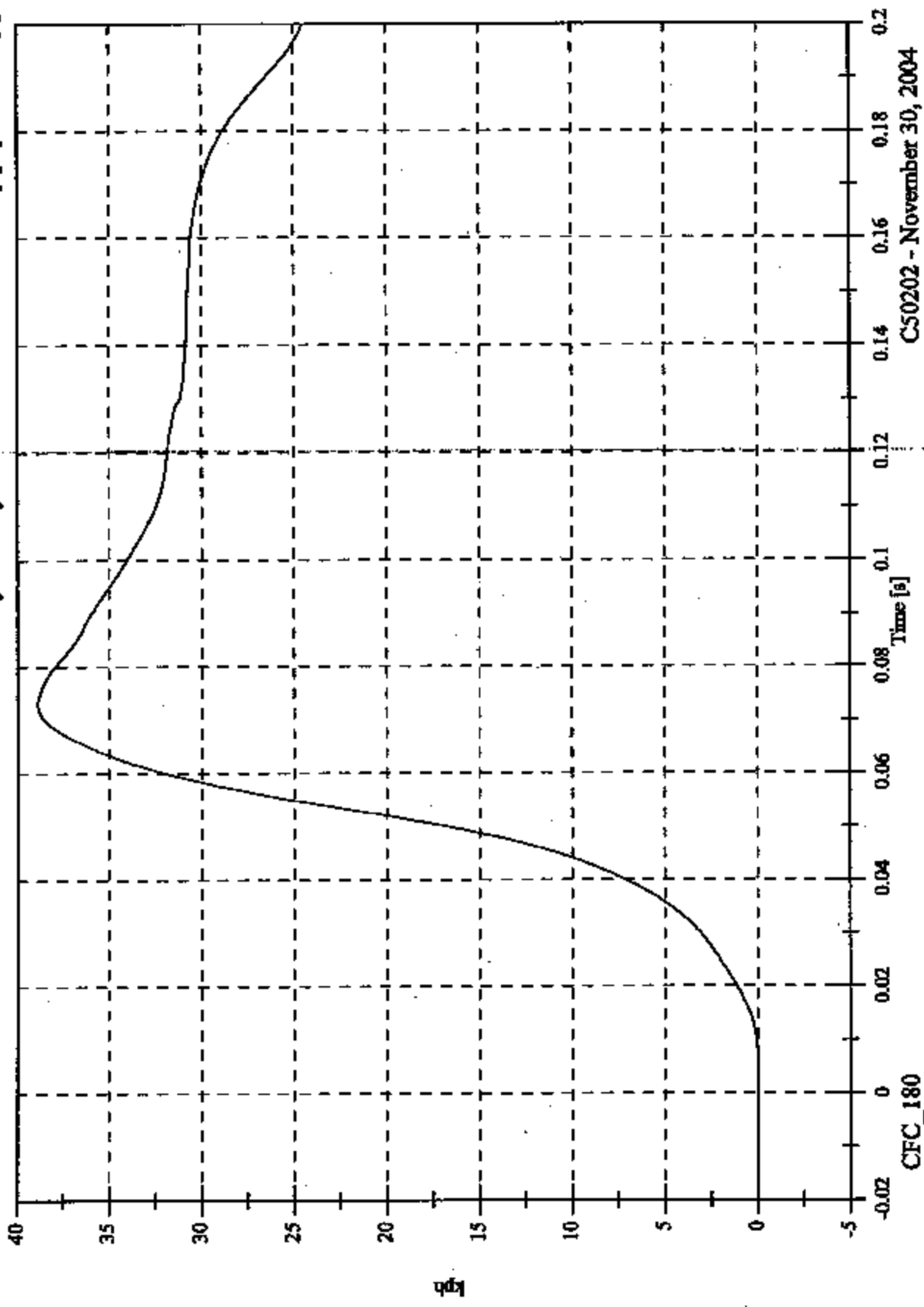


C50202 - November 30, 2004

2005 214 Indicant Test 2 - 2005 Ford Mustang

Max: 38.9 [kph] at 0.073 [s]
Min: -0.0 [kph] at -0.020 [s]

V2P4 Pelvic Velocity



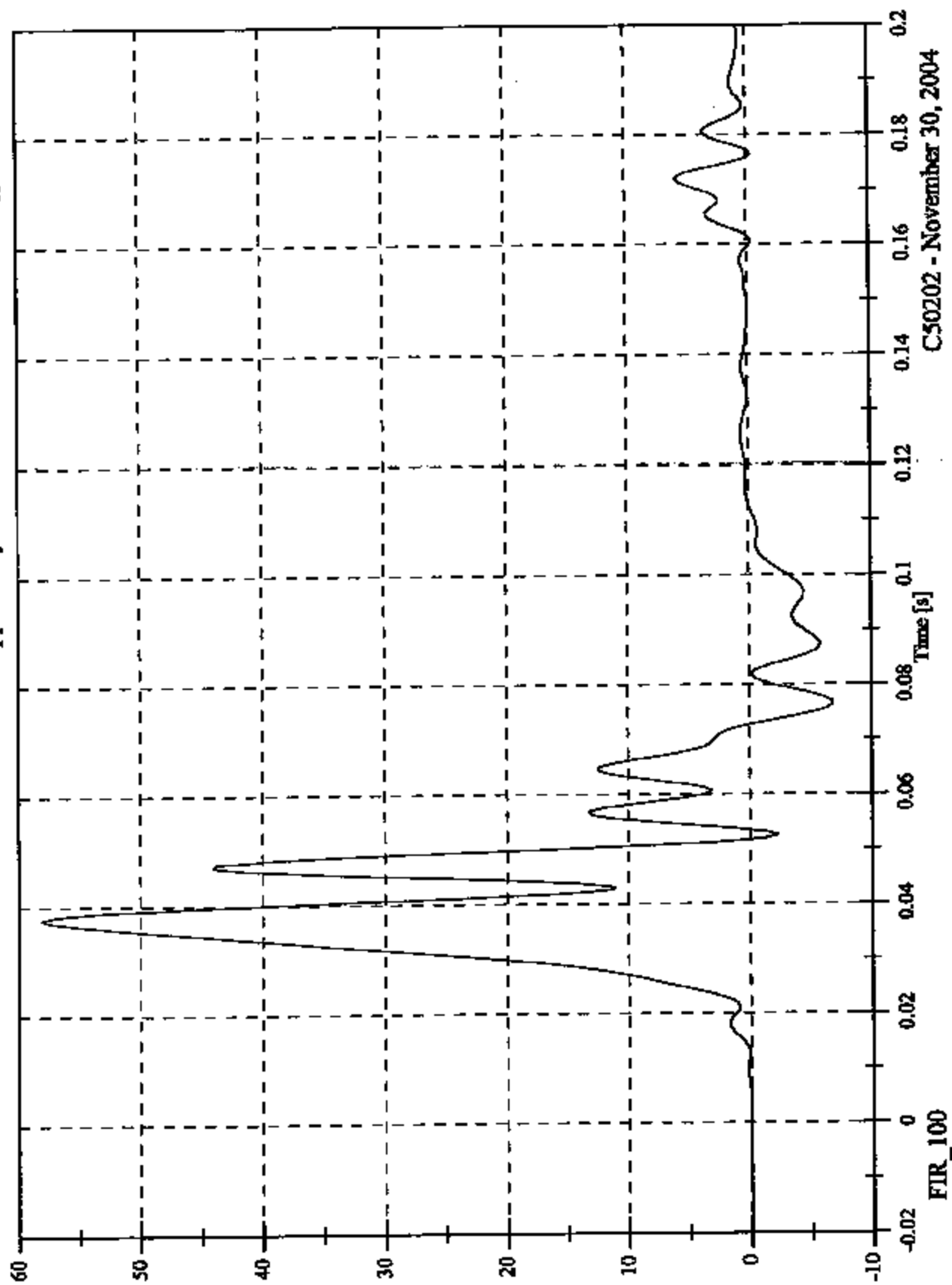
C50202 - November 30, 2004

CFC_180

2005 214 Inducant Test 2 - 2005 Ford Mustang

Max: 58.1 [g] at 0.037 [s]
Min: -6.8 [g] at 0.077 [s]

VZPI Upper Rib y

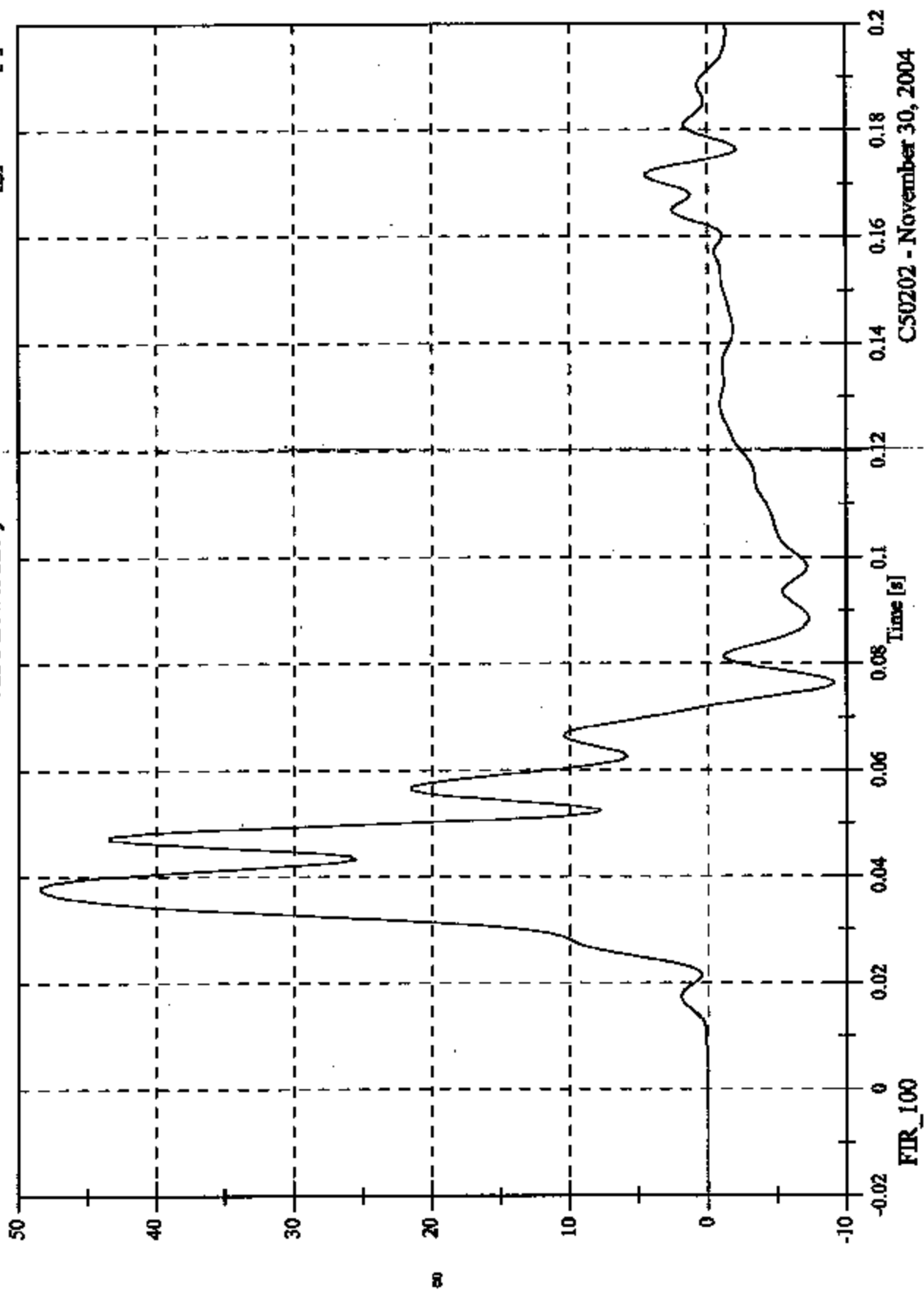


C50202 - November 30, 2004

2005 214 Inducant Test 2 - 2005 Ford Mustang

Max: 48.5 [g] at 0.037 [s]
Min: -9.1 [g] at 0.076 [s]

V2P1 Lower Rib y



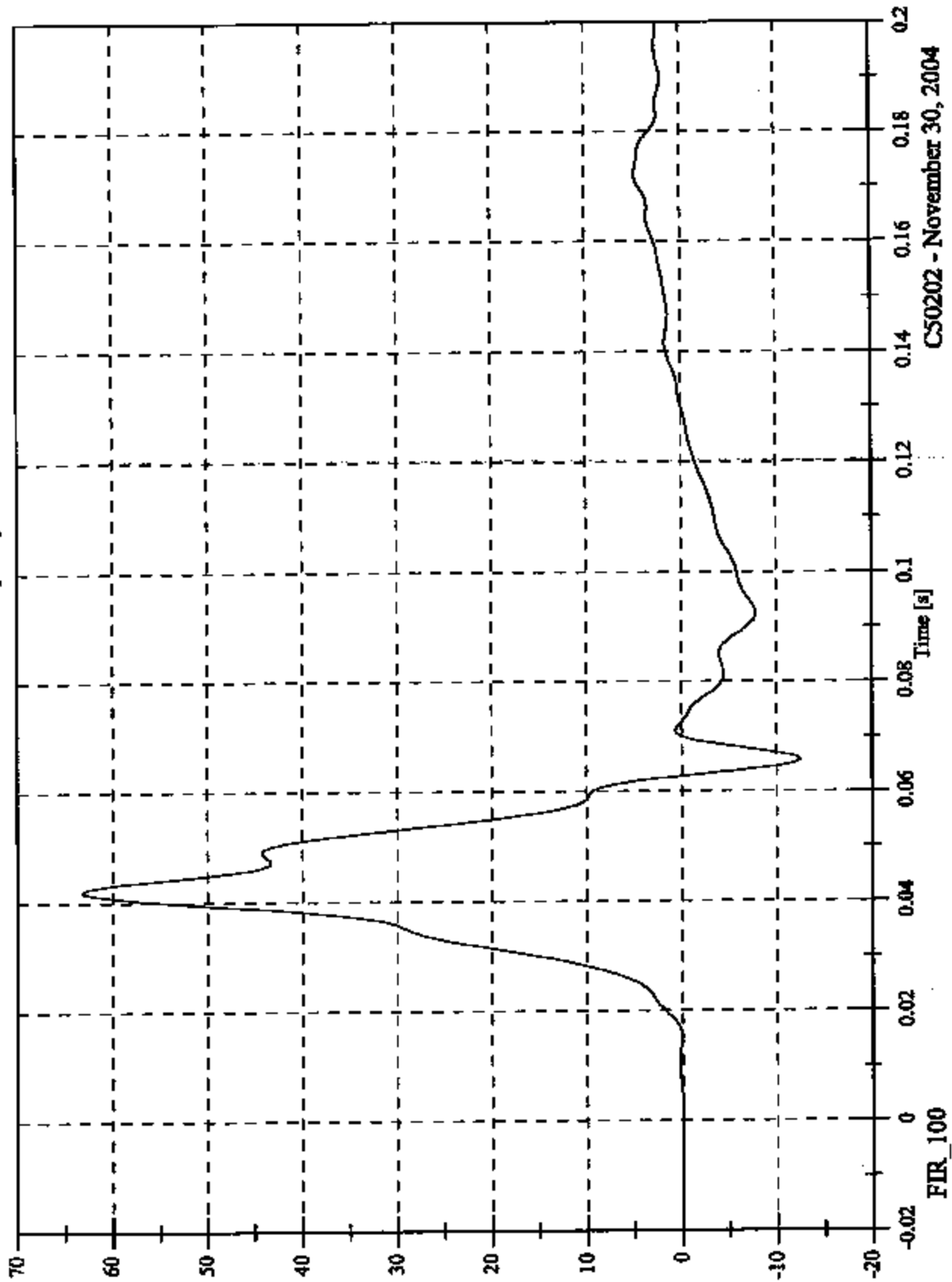
C50202 - November 30, 2004

FIR_100

2005 214 Indignant Test 2 - 2005 Ford Mustang

V2P1 Lower Spine y

Max: 63.2 [g] at 0.042 [s]
Min: -12.5 [g] at 0.066 [s]



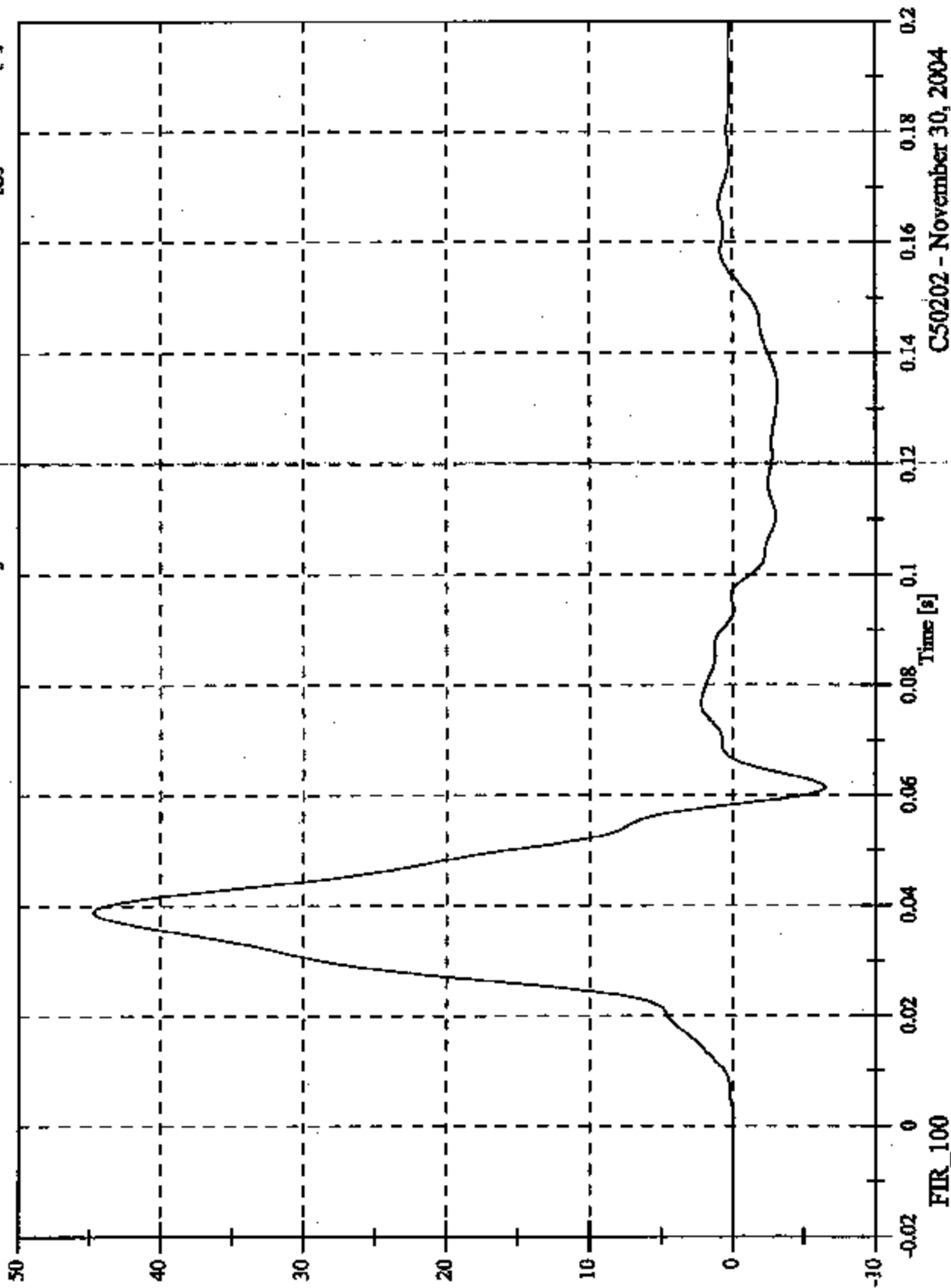
CS0202 - November 30, 2004

FIR_100

2005 214 Inducant Test 2 - 2005 Ford Mustang

V2P1 Pelvic y

Max: 44.8 [g] at 0.039 [s]
Min: -6.5 [g] at 0.061 [s]



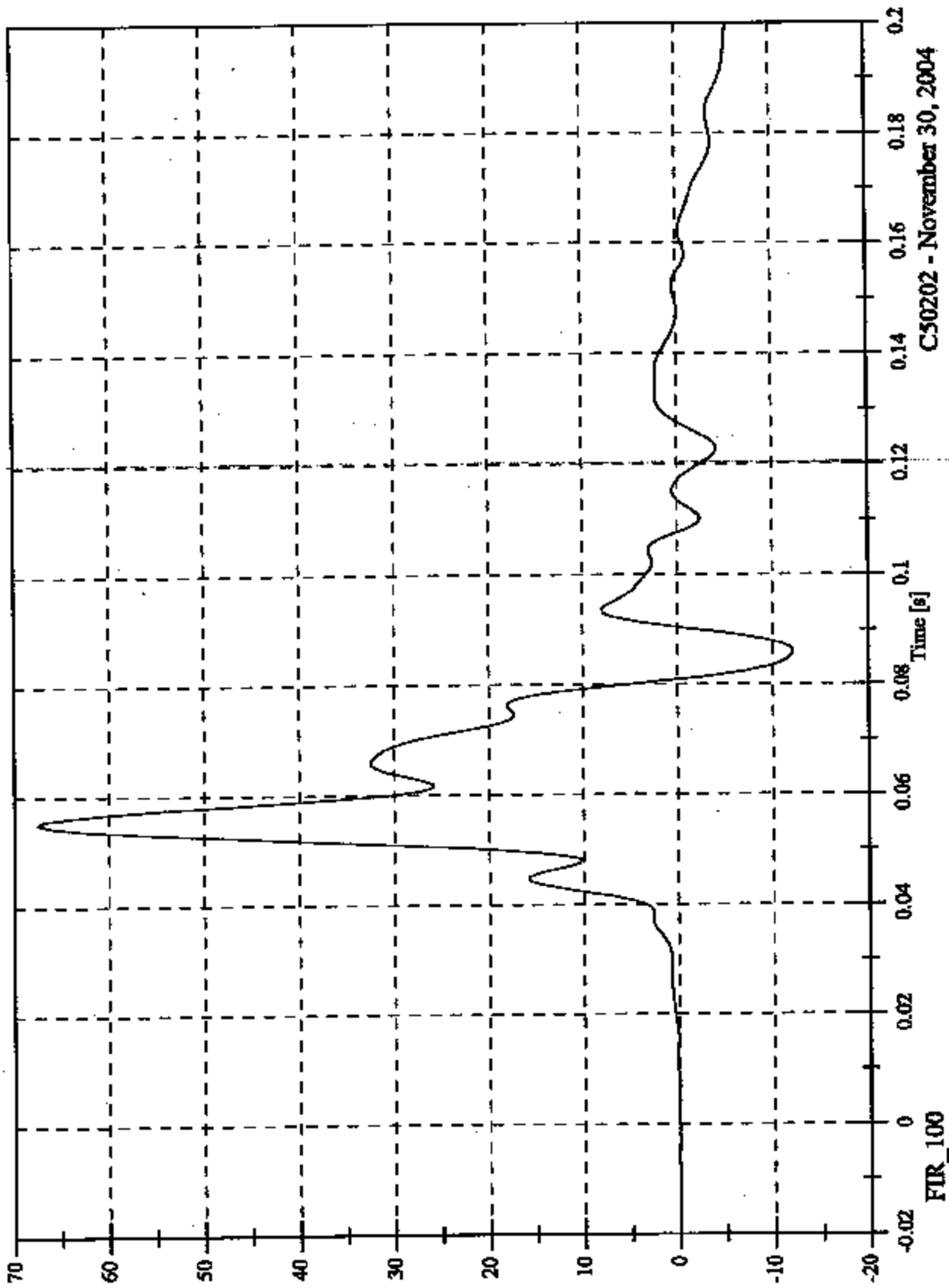
C50202 - November 30, 2004

Data Plot Is Not Available

2005 214 Indicant Test 2 - 2005 Ford Mustang

Max: 67.5 [g] at 0.055 [s]
Min: -12.1 [g] at 0.086 [s]

V2P4 Lower Rib y

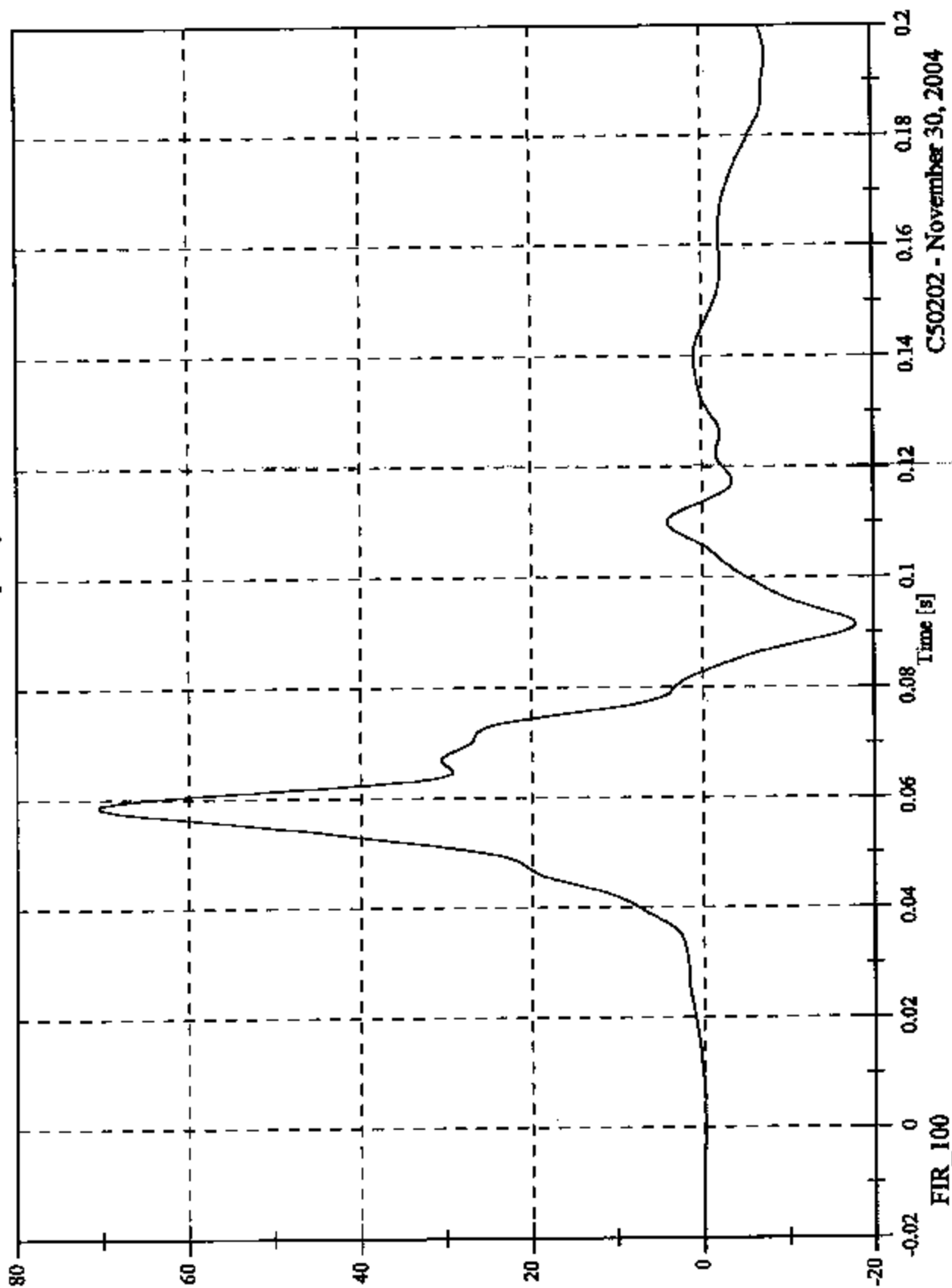


C50202 - November 30, 2004

2005 214 Indignant Test 2 - 2005 Ford Mustang

Max: 70.6 [g] at 0.059 [s]
Min: -17.9 [g] at 0.091 [s]

V2P4 Lower Spine y



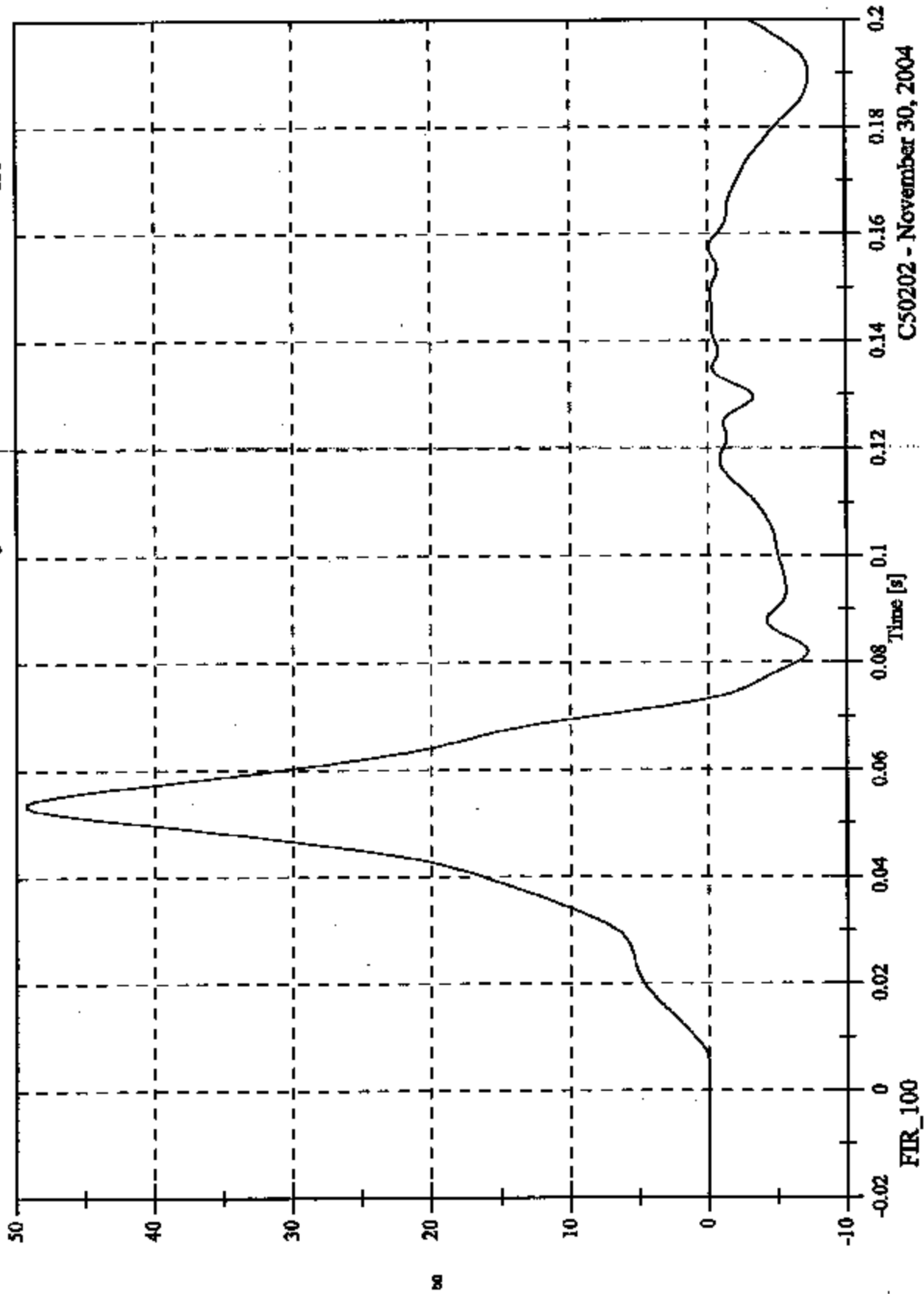
C50202 - November 30, 2004

FIR_100

2005 214 Indicant Test 2 - 2005 Ford Mustang

V2P4 Pelvic y

Max: 49.3 [g] at 0.054 [s]
Min: -7.4 [g] at 0.190 [s]



C50202 - November 30, 2004