

GENERAL CHARACTERISTICS:

CRASH TYPE: Collision with concrete retaining wall -
(Non-Fatal)

VEHICLES: 1 car

DAY: Monday TIME: 1025 hours

WEATHER: Fine LIGHTING CONDITIONS: Daylight, sunny

ROAD SURFACE: Sealed, dry

OCCUPANTS: 2

SPEED LIMIT: 80 km/h

CRASH DESCRIPTION:

The car was travelling east, uphill at approximately 70 km/h in the right lane of a four lane arterial road divided by a narrow raised median. The driver, an elderly man travelling with her daughter, drove only infrequently and had not driven for three months. She was on her way to see her doctor to renew her driver's licence. One of several trucks travelling in the left lane just ahead of the car appeared to drift towards the right lane. The driver of the case vehicle, presuming that the truck was going to collide with her, veered to the right, mounting the raised median with her right wheels. Her vehicle then swerved back to the left, passing between two trucks travelling in the left lane, and struck a concrete retaining wall with the left front corner and left side. The vehicle came to rest with its left side against the retaining wall.

UNIT 1: Vehicle Type: VW 1500 Type II (year not known)

Driver: Female, 75 years, retired, BAC: zero, 3 point static seat belt worn

Injuries: Concussion; bruising of right shoulder, chest and abdomen; horizontal laceration to right side of abdomen from seat belt; bruise to left knee from undersurface of instrument panel; dislocated right thumb. Hospitalized 2 days. MAIS: 1

Front Seat Passenger: Female, 42 years, clerk, BAC: zero, 3 point static seat belt worn

Injuries: Bruising across abdomen from seat belt; bruise to left hip from striking inside surface of left front door which was considerably deformed in the impact; bruising to left lower leg and right knee probably from impacting underside of instrument panel. Transported to hospital, not admitted. MAIS: 1

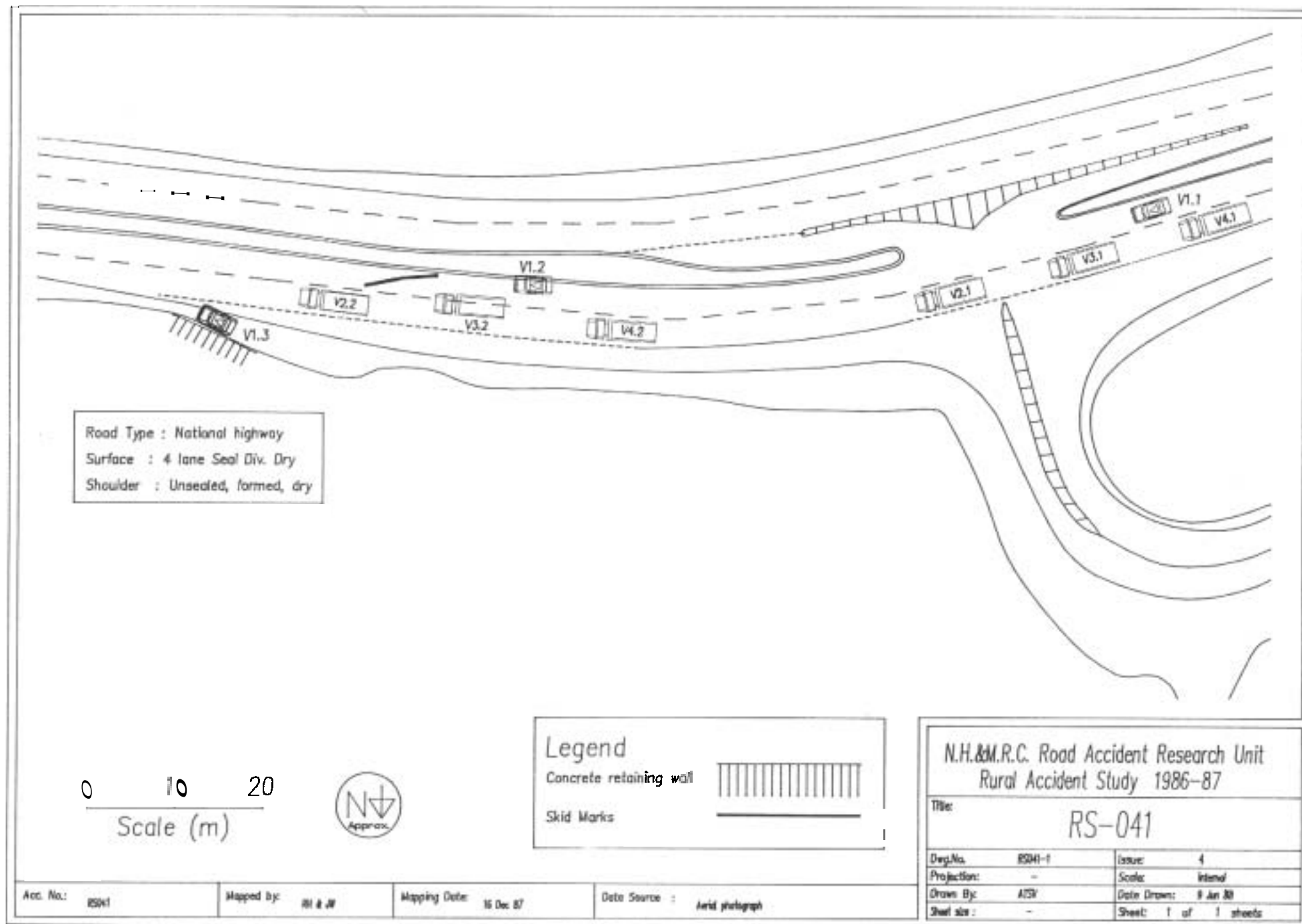




FIGURE A45: Crash 40. Damage to the car following roll-over. Note roof crushed to top of front seat backs.



FIGURE A46: Crash 41. The final position of the car. Note damage to the left front corner due to impact with a concrete retaining wall.

GENERAL CHARACTERISTICS:

CRASH TYPE: Side-swipe collision - (Non-Fatal)

VEHICLES: 2 cars

DAY: Saturday TIME: 1715 hours

WEATHER: Fine LIGHTING CONDITIONS: Daylight, sunny, shadows on road

ROAD SURFACE: Sealed, dry

OCCUPANTS: Unit 1, 2; unit 2, 3

SPEED LIMIT: 80 km/h

CRASH DESCRIPTION:

Unit 2 was travelling north west, up hill on a two-lane road, at approximately 100 km/h. In front of Unit 2 was a slower moving vehicle travelling at approximately 80 km/h. The occupants of Unit 2, a young male driver and two female friends, were on their way to a party. As a crest obscured the view of traffic conditions ahead, the driver of Unit 2 slowed to 80 km/h and followed the car in front, When the two vehicles reached the top of the rise the driver of Unit 2 saw that the road ahead was clear and began to overtake. He did not realize that as he began to move into the right lane Unit 1 had began to overtake his car. The front of Unit 1 was along side the rear of Unit 2 when Unit 2 began moving into the right lane. The left front corner of Unit 1 struck right rear quarter and wheel arch of Unit 2. Unit 1 then swerved to the right, travelling off the seal and onto the gravel shoulder. It then swerved back to the left across the road and struck Unit 2 a second time, contacting the right front door. Unit 1 continued in a slight anti-clockwise yaw for approximately 30 metres, travelling off the seal onto the left shoulder where the right front wheel struck a large tree. It then rotated anti-clockwise through 270° caning to rest on the seal facing in its original direction of travel. The front seat passenger was ejected onto the road and the driver partially ejected from the passenger's door.

Unit 2 ran off the road to the left crossing the gravel shoulder and travelling onto a broad grassed area. It travelled in a 30° anti-clockwise yaw for approximately 60 metres before it ran down into a 2.5 metre deep dry creek bed where it rolled, sustaining damage to the left front corner, left rear quarter and right front corner. It came to rest upside down facing south east with the boot resting against a tree. Both female passengers were ejected from the vehicle into the creek bed.

The occupants of Unit 1, a young male driver and his girlfriend, were friends of the occupants of Unit 2 and were also on their way to a party. However, the driver of Unit 2 stated that he was unaware that Unit 1 was following him. He also stated that prior to overtaking he checked for traffic following behind and saw none.

UNIT 1:

Vehicle Type: 1985 VK Holden Commodore Sedan

Driver: Male, 19 years, farm hand, BAC: zero, inertia reel 3 pint seat belt available, not worn

Injuries: Concussion: bruising of right side of chest with clinically fractured ribs: fractured right ulna: sprained left ankle. The right side injuries probably resulted from contact with the right front door, and the ankle injury from intrusion of the floor pan. The driver was partially ejected from the left front door. Hospitalized for 7 days. MAIS: 2

Front Seat Passenger: Female, 15 years, student, BAC: zero, inertia reel 3 pint seat belt available, not worn

Injuries: Fracture R femur with open reduction and nail fracture left thumb; laceration chin; laceration right and left knees: fracture right 9th rib. The thigh injuries probably resulted from impacting the grossly deformed instrument panel and console during impact with the tree. The passenger was ejected from the left front door and found lying on the road. Hospitalized for 7 days. MAIS: 3

UNIT 2:

Vehicle Type : 1984 Holden Camira Sedan

Driver: Male, 19 years, labourer, BAC: zero, inertia reel 3 pint seat belt probably worn

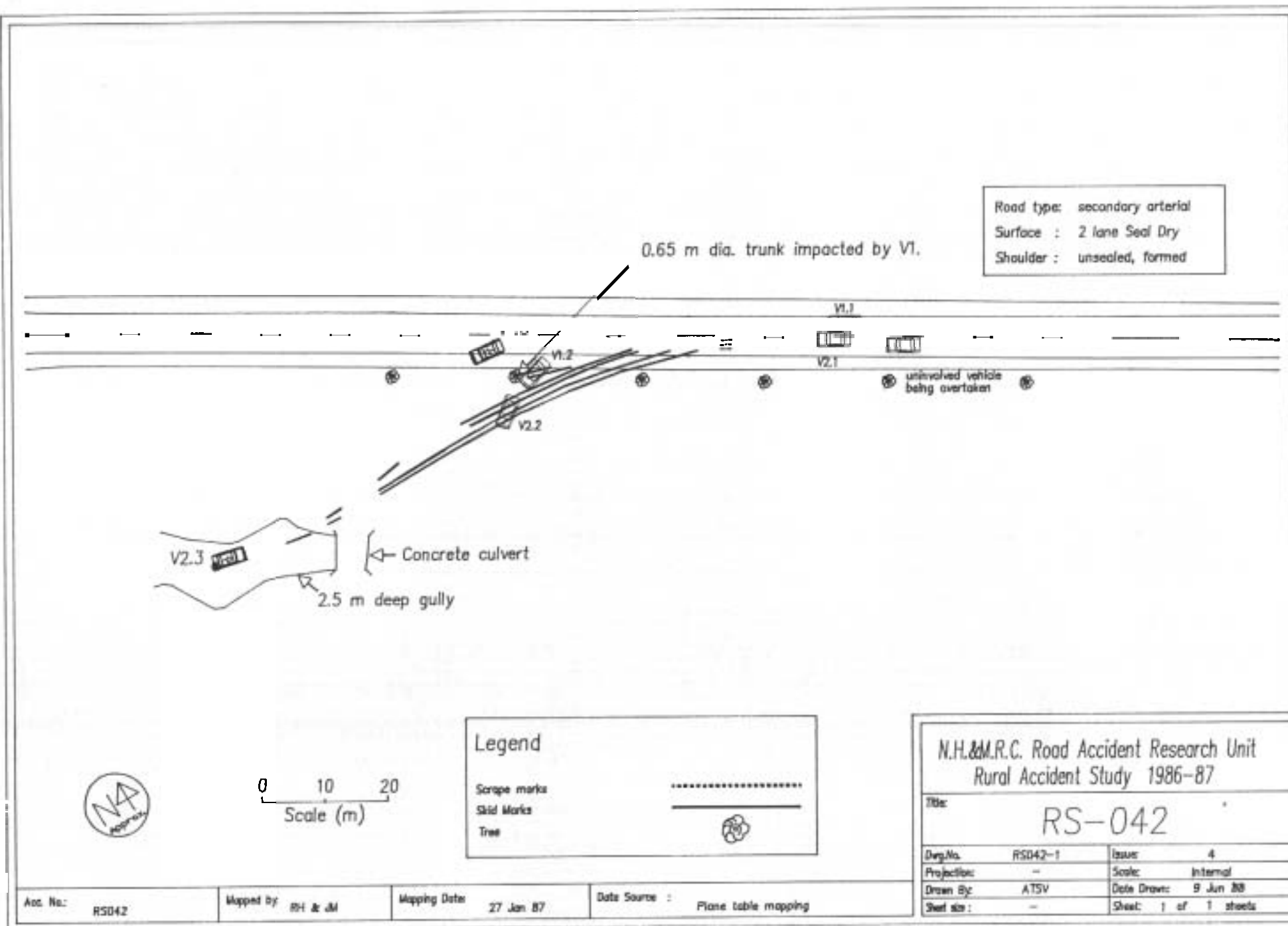
Injuries: Concussion; laceration to left side of forehead possibly from striking rear vision mirror; bruising to left shoulder and chest. Hospitalized < 24 hours. MAIS: 1

Left Front Seat Passenger: Female, 15 years, student, BAC: zero, inertia reel 3 point seat belt available, not worn

Injuries: Severe closed head injury: severe scalping with the loss of a skin flap measuring 20 cm x 17 cm; mid-shaft fracture of right tibia and fibula. The passenger was ejected via the left front window. Contact marks were evident on the inside edge of the window frame and this is thought to be the cause of the scalping injury. Hospitalized for 73 days before being transferred to Specialist Unit for head injury management. MAIS: 5

Left Rear Seat Passenger: Female, 15 years, student, BAC; zero, inertia reel 3 point seat belt available, not worn

Injuries: Unconscious for unspecified period; multiple abrasions and lacerations to back and left thigh. The passenger was ejected via the left rear window and was found unconscious in the creek bed. Back and leg injuries are thought to have resulted from contact with debris in the gully. Hospitalized for 6 days. **MAIS:** 2



GENERAL CHARACTERISTICS:

CRASH TYPE: Collision with tree - (Non-Fatal)
 VEHICLES: 1 four wheel drive utility
 DAY: Wednesday TIME: 1400 hours
 WEATHER: Fine LIGHTING CONDITIONS: Daylight, sunny, shadows on road
 ROAD SURFACE: Sealed, dry
 OCCUPANTS: 2
 SPEED LIMIT: 110 km/h

CRASH DESCRIPTION:

The vehicle was travelling west on a two-lane road at between 80-90 km/h. The two male occupants, who were brothers, were on their way to buy some farm supplies. While negotiating a sweeping right hand bend, the left wheels went off the bitumen onto the gravel shoulder. The driver steered back onto the seal and the vehicle travelled diagonally across the road leaving a skid mark from one of the right wheels. It continued across the right shoulder yawing clockwise slightly, and ran down a bank where it struck a large tree with the left front corner. The left front wheel was pushed back so that it was adjacent to the left front passenger seat. The left 'A' pillar and roof of the vehicle also contacted the tree. The left front seat passenger was trapped by the legs in the vehicle for approximately 45 minutes after the crash.

UNIT 1: vehicle Type : **1984 Toyota Hi-Lux 4WD Utility**

Driver: Male, 21 years, labourer, BAC: zero, inertia reel 3 point seat belt available but probably not worn

Injuries: Bruising to left shoulder, chest, abdomen and left leg. Transported to hospital but not admitted. MAIS: 1

Front Seat Passenger: Male, 15 years, student, BAC: zero, inertia reel 3 point seat belt available but probably not worn

Injuries: Concussion; laceration of left upper eyelid; laceration above left eyebrow; fractured nose; compression fracture of left femur; laceration to left calf: fractures of left metatarsals 2-5. The limb injuries probably resulted from intrusion of the instrument panel and floor pan into the occupant space. Head injuries are likely to have resulted from the passenger striking his head on the 'A' pillar. Hospitalised for 11 days. MAIS: 3

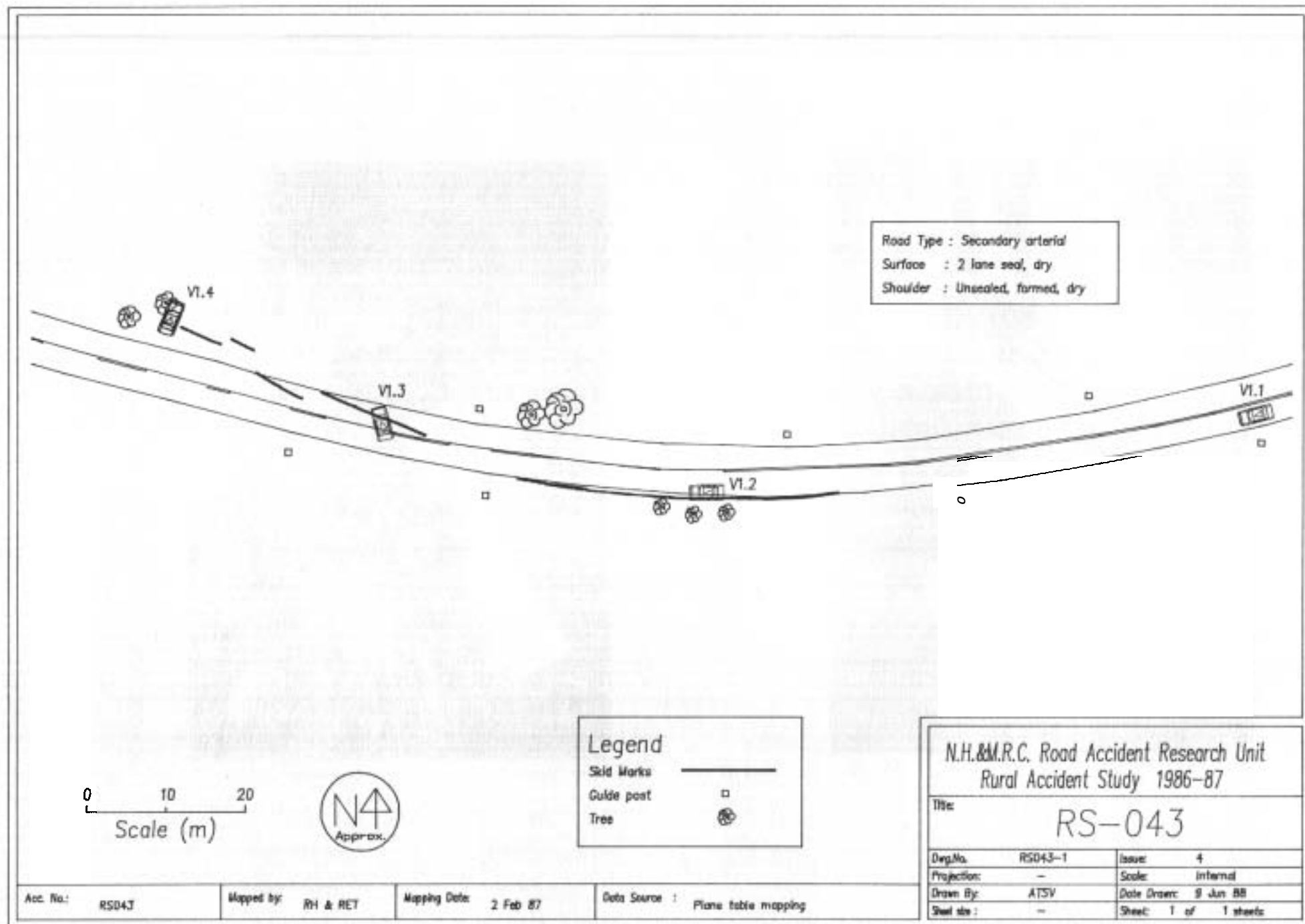




FIGURE A47: Crash 42. Damage to the right front side of Holden Commodore due to impact with tree.



FIGURE A48: Crash 43. Final position of the utility.

GENERAL CHARACTERISTICS:

CRASH TYPE: Collision with utility pole - (Non-Fatal)

VEHICLES: 1 car

DAY: Friday TIME: 0840 hours

WEATHER: Fine LIGHTING CONDITIONS: Daylight, sunny

ROAD SURFACE: Sealed, dry with multiple small undulations and loose gravel accumulated on the bitumen surface

OCCUPANTS: 1

SPEED LIMIT: 110 km/h

CRASH DESCRIPTION:

The car was travelling south west on a straight two-lane section of road at approximately 70 km/h. The young female driver, who was on her way to work, had had her probationary driver's licence for only five months and had only three weeks driving experience in the car. She travelled the road daily. The road had multiple small undulations and loose gravel had accumulated on its surface, particularly near the edges. The driver stated that she was travelling close to the edge of the seal. She considers that this in combination with the undulating road surface and loose gravel resulted in her running off the seal to the left and into the loose gravel shoulder. The car travelled completely on the shoulder for 55 metres before it regained the seal in a slight clockwise yaw and travelled into the right lane. The driver then steered back to the left causing the car to yaw anti-clockwise. It ran off the bitumen on the left and slid sideways along the shoulder where it struck a steel and concrete utility pole with right 'B' pillar. The driver stated that when she realized she was going to collide with the utility pole she let go of the steering wheel and covered her face. The car then rotated anti-clockwise about the utility pole coming to rest facing west having rotated clockwise through 240°. The impact with the utility pole displaced the right 'B' pillar and right rear door forwards by approximately 600 mm. The car was fitted with wider than standard wheels and tyres which may have affected its directional stability.

UNIT 1: Vehicle Type : 1972 Toyota Corona Sedan

Driver: Female, 17 years, shop assistant, BAC: zero, 3 point static seat belt worn

Injuries: Multiple small lacerations to back; bruise to lateral aspect of right arm; small laceration to right hand and right knee. The back and right arm injuries resulted from contact with the 'B' pillar and door frame. The right knee injury resulted from intrusion of the driver's door. Transported to hospital but not admitted.

MAIS: 1

GENERAL CHARACTERISTICS:

CRASH TYPE: Single vehicle rollover - (Non-Fatal)

VEHICLES: 1 car

DAY: Saturday TIME: 1715 hours

WEATHER: Fine LIGHTING CONDITIONS: Daylight, sunny

ROAD SURFACE: Sealed, dry

OCCUPANTS: 5

SPEED LIMIT: 110 km/h

CRASH DESCRIPTION:

The occupants of the car were returning home after an outing, travelling north on a straight two-lane section of road, when the right rear tyre failed. The driver stated that he heard a loud noise from the rear of the vehicle and almost immediately it pulled violently to the right, crossed over the centre line, and travelled for approximately 50 metres partially on the incorrect side of the road. The driver steered sharply back to the left to return to the correct side of the road. This put Unit I into an anti-clockwise yaw. It travelled in an increasing anti-clockwise yaw back across the road off onto the left shoulder and down an embankment. As the vehicle travelled down the embankment it had rotated through approximately 130° so that it was travelling almost backwards. The right rear corner dug into the ground at the bottom of the embankment causing the vehicle to roll onto its roof. It slid backwards on its **roof** for approximately 20 metres, coming to rest on its roof facing in the opposite direction to which it had originally been travelling. The occupants climbed out through the passengers door as the drivers side **door** could not be opened.

UNIT 1: Vehicle Type: 1981 Alfa Sud Sprint two-door sedan

*

Driver: Male, 23 years, clerk, BAC: zero , inertia reel 3
point seat belt worn

Injuries: Neck strain: laceration to right hand;
bruising to right knee. Transported to hospital,
but not admitted. MAIS: 1

*
self-reported BAC

Front Seat Passenger: Male, 58 years, retired, BAC: zero*, inertia reel 3 point seat belt worn

Injuries: Loss of consciousness briefly: neck strain: abrasion to forehead possibly from striking windscreen: bruising to right shoulder and chest: small laceration on right knee. Transported to hospital, but not admitted. MAIS: 2

Right Rear Seat Passenger: Female, 23 years, student, BAC: zero", 3 pint static seat belt worn

Injuries: Concussion: laceration to forehead: small laceration to right shoulder: bruise to right thigh: laceration of right index finger. Transported to hospital, but not admitted. MAIS: 1

*

Centre Rear Seat Passenger: Female, 19 years, BAC: zero , lap belt available, not worn

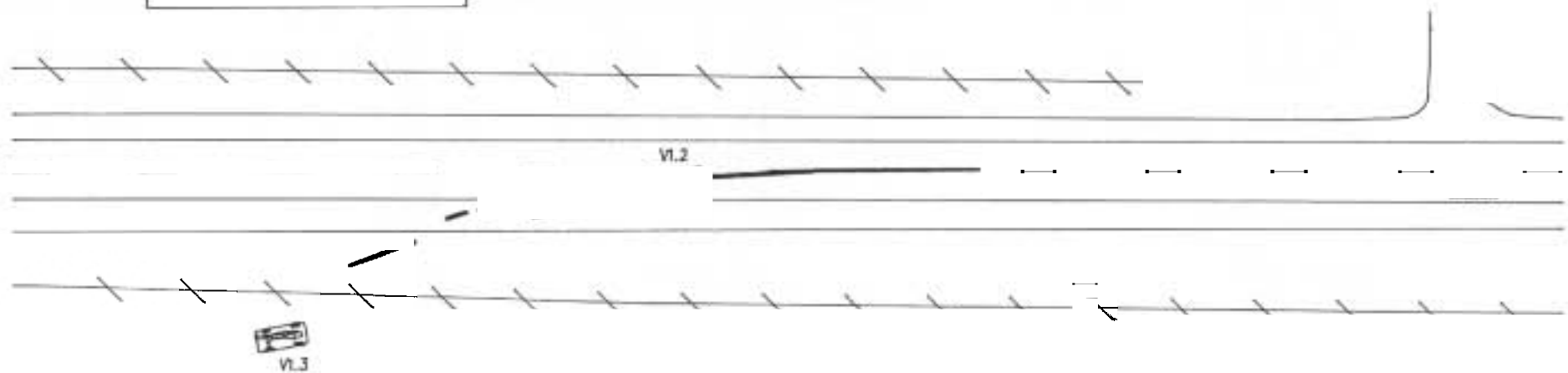
Injuries: Neck strain: bruise and abrasion to right cheek: laceration to right forearm. Transported to hospital but not admitted. **MAIS:** 1

Left Rear Seat Passenger: Female, 60 years, retired, BAC: zero*, 3 pint static seat belt worn

Injuries: Neck strain: bruise and laceration to top of head: bruise to abdomen from seat belt. Transported to hospital, but not admitted. **MAIS:** 1

* self-reported BAC

Road Type : Primary arterial
 Surface : 2 lane seal, dry
 Shoulder : Unsealed, formed, dry



0 10 20
 Scale (m)



Legend

Skid Marks

Fence (post and wire)



RS-045

Drawn By:	RS045-1	Issue:	4
Projection:	-	Scale:	Internal
Drawn By:	ATSP	Date Drawn:	9 Jan 88
Sheet size:	-	Sheet:	1 of 1 sheets

Acc. No.: RS045

Mapped By: M1 & M

Mapping Date: 13 Jan 88

Data Source : Aerial photograph and plane table mapping

GENERAL CHARACTERISTICS:

CRASH TYPE: Rear-end collision - (Non-Fatal)

VEHICLES: 2, motorcycle and tractor

DAY: Thursday TIME: 1055 hours

WEATHER: Fine LIGHTING CONDITIONS: Daylight, sunny

ROAD SURFACE: Sealed, dry

OCCUPANTS: unit 1, 1; Unit 2, 1

SPEED LIMIT: 100 km/h

CRASH DESCRIPTION:

The motorcycle was travelling north at approximately 80 km/h in the right lane of a four lane arterial road divided by a grassed median. The rider, a student, was on his way to university. A pantechnicon was travelling just ahead of the motorcycle in the left lane. The motorcyclist accelerated to overtake this vehicle when without warning it moved into the right lane. The rider then braked hard and swerved into the left lane to avoid colliding with the truck. As he swerved to the left he saw a tractor with slasher attached travelling slowly (about 25 km/h) in the left lane. The motorcycle struck the right rear corner of the slasher and slid down to the left as it crossed back into the right lane. The motorcycle came to rest in the right lane on its left side with the rider lying underneath.

UNIT 1: Vehicle Type : Honda XL 250

Driver: Male, 19 years, student, BAC: zero, full face helmet worn

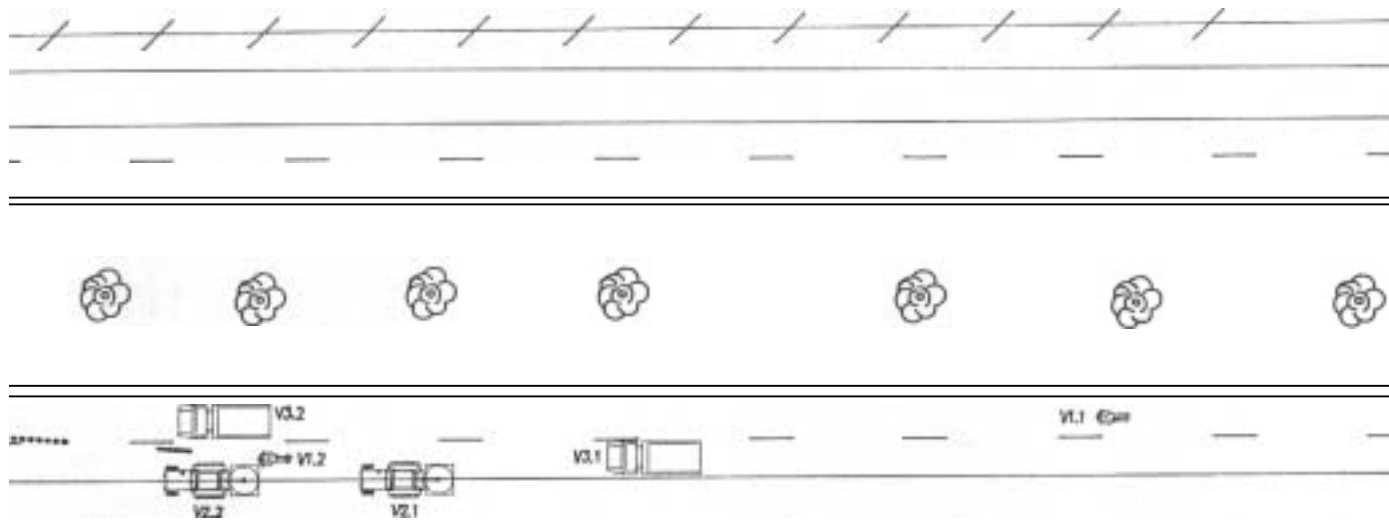
Injuries: Abrasions to left shoulder, elbow and hip; lacerations to the medial side of the left foot. Hospitalized for 5 days. MAIS: 2

UNIT 2: Vehicle Type : ~~Case~~ International Harvester 485 Tractor with slasher attachment

Driver: Male, 32 years, salesman, BAC: zero, no seat belt available

Injuries: Shock. Remained at scene. MAIS: 1

* self-reported BAC



Road Type : Primary arterial
 Surface : 4 lane Seal Div. Dry
 Shoulder : Unsealed formed. dry

Legend

- Skid Mark
- Scrape mark and fluid pool
- Fence (post and wire)
- Tree

Mapping Date: 1 Jan 88

Data Source: Aerial photograph and site measurements

N.H.M.R.C. Road Accident Research Unit
 Rural Accident Study 1986-87

Title:

RS-046

Proj.No.	RS046-1	Issue:	4
Projection:	-	Scale:	Island
Drawn By:	ATSV	Date Drawn:	6 Jan 88
Sheet size:	-	Sheet:	1 of 1 sheets



FIGURE A49: Crash 44. Final position of Toyota Corona. Note damage to right side and forward displacement of 'B' pillar due to impact with pole.



FIGURE A50: Crash 46. Tractor with mower attachment struck by motorcycle. The motorcycle contacted the right rear corner of the mower.

GENERAL CHARACTERISTICS:

CRASH TYPE: Collision with utility pole - (Fatal)
 VEHICLES: 1 car
 DAY: Thursday TIME: 1230 hours
 WEATHER: Fine LIGHTING CONDITIONS: Daylight, sunny
 ROAD SURFACE: Sealed, dry
 OCCUPANTS: 2
 SPEED LIMIT: 110 km/h

CRASH DESCRIPTION:

The car was travelling north on a two-lane road at a speed stated by the driver to have been 60 km/h although it is likely to be greater. The occupants, a young female driver and her boyfriend, were on holiday and visiting relatives. The driver had borrowed the car from a relative and had been driving it for only a few days. When approaching a right hand bend she said that she moved off the bitumen onto the gravel shoulder to the left to allow room for an on-coming vehicle to pass. When the vehicle passed she turned the steering wheel to the right to regain the bitumen whereupon the car yawed clockwise out of control across to the opposite side of the road where it struck a steel and concrete utility pole with the left front. There was considerable intrusion into the left passenger space with the left front wheel almost touching the front seat. A fire, its origin unknown, started in the occupant compartment. The driver was removed from the vehicle by passing motorists who needed a crow bar to pry open the driver's side door. The left side of the vehicle was engulfed in flames so that they were not able to remove the left front seat passenger. Two days earlier a car had hit a road sign 10 metres further north from the utility pole in a similar crash.

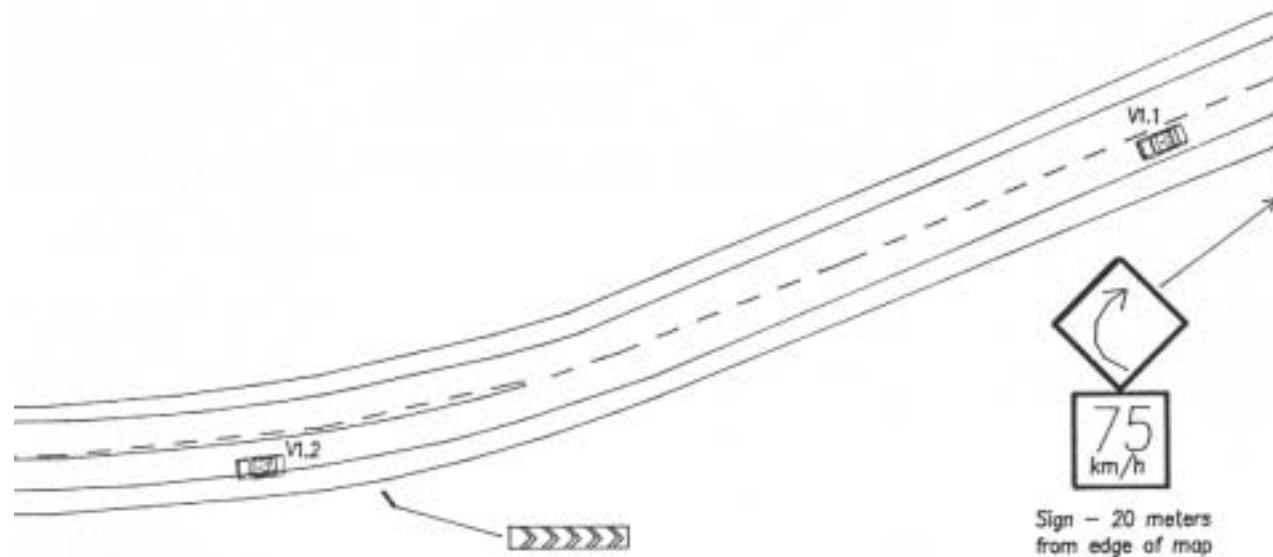
UNIT 1: Vehicle Type : 1971 XY Ford Fairmont Sedan

Driver: Female, 18 years, clerk, BAC: zero, 3 point static seat belt worn

Injuries: Concussion: bruising around left eye:
 compression fracture of distal end of left humerus:
 fracture of left tibia: soft tissue injury of left
 knee, ankle, chest, pelvis and right wrist.
 Hospitalized for 23 days. MAIS: 3

Front Seat Passenger: Male, 21 years, clerk, BAC: zero, 3 point static seat belt available but not worn

Injuries: Complete traumatic rupture of the aorta; laceration of the right lobe of the liver; bruising of right kidney; the **body was** extensively burnt on the right side resulting in heat fracturing of the right tibia and fibula and right elbow joint. **Dead** at scene. **MAIS: 6**



Legend

Skid Marks

Concrete/Steel Utility Pole

□ P

N.H.&M.R.C. Road Accident Research Unit
Rural Accident Study 1986-87

Title:

RS-047

Dep.No.	RSAC-1	Issue:	4
Projection:	-	Scale:	Intend
Drawn By:	ATV	Date Drawn:	6 Jan 88

GENERAL CHARACTERISTICS:

CRASH TYPE: Side-swipe collision - (Non-Fatal)

VEHICLES: 2, motorcycle and car

DAY: Sunday TIME: 1220 hours

WEATHER: Fine LIGHTING CONDITIONS: Daylight, sunny with shadows on road

ROAD SURFACE: Sealed, dry

OCCUPANTS: Unit 1, 1; unit 2, 4

SPEED LIMIT: 110 km/h

CRASH DESCRIPTION:

unit 1, a motorcycle, was negotiating a left hand bend over a crest when it crossed the centre line and struck the right side of Unit 2, a car travelling in the opposite direction of the two-lane road. The motorcycle's speed is not known but the driver of the car stated that it appeared to be travelling too fast for the corner. The motorcycle glanced along the side of the car, striking first just behind the right front wheel, then the right front door and right rear door with right handle bar striking the 'C' pillar. The motorcycle then slid down to the left and crossed back into the left lane, coming to rest on its left side against a small embankment at the edge of the road with the rider lying beneath the motorcycle. The rider stated that he had set out from home to go for a recreational ride through the Adelaide Hills.

UNIT 1: Vehicle Type : Suzuki RG 250 motorcycle

Rider: Male, 22 years, cadet, BAC: zero, full face helmet worn

Injuries: Fractured right femur; lacerations and abrasions of right lower leg; strain of left shoulder; abrasions of left side of back. The right leg injuries resulted from impact with Unit 1 and the left sided injuries from contact with the road. Hospitalized for 10 days. **MAIS:** 3

UNIT 2: Vehicle Type : 1971 XY Ford Falcon Sedan

Driver: Male, 24 years, tradesman, BAC: 0.12, 3 point static seat belt available but not worn

Injuries: Cuts and abrasions to right arm from splinters of glass from side window which shattered when struck by motorcyclist. Remained at scene. **MAIS:** 1

Front Seat Passenger: Male, 27 years, BAC: unknown, 3 point seat belt available but not worn

Injuries: None. Remained at scene. MAIS: 0

Right Rear Seat Passenger: Male, 25 years, BAC: unknown, static 3 point seat belt available, not known if worn

Injuries: None. Remained at scene. MAIS: 0

Left Rear Seat Passenger: Male, 25 years, BAC: unknown, static 3 point seat belt available, not known if worn

Injuries: None. Remained at scene. MAIS: 0

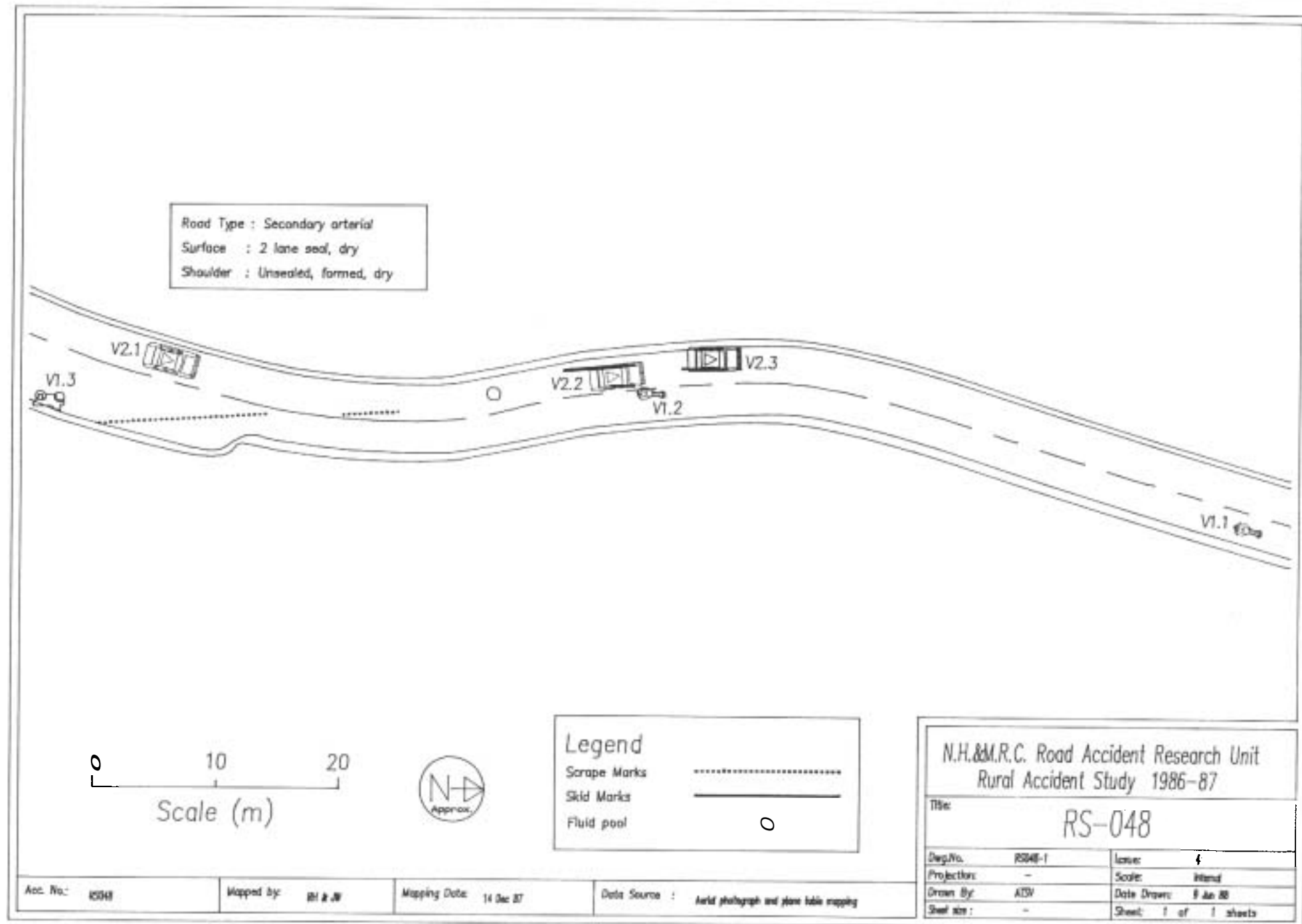




FIGURE A51: Crash 47. Final position of the car. Note damage to left front corner and scorching of the paint work from the fire which started after the impact.



FIGURE A52: Crash 48. Damage to the right side of the car due to impact with the motorcycle and rider.

GENERAL CHARACTERISTICS:

CRASH TYPE: Single vehicle rollover - (Non-Fatal)
 VEHICLES: 1 forward control van
 DAY: Monday TIME: 0830 hours
 WEATHER: Fine, windy LIGHTING CONDITIONS: Daylight, sunny
 ROAD SURFACE: Sealed, dry
 OCCUPANTS: 1
 SPEED LIMIT: 110 km/h

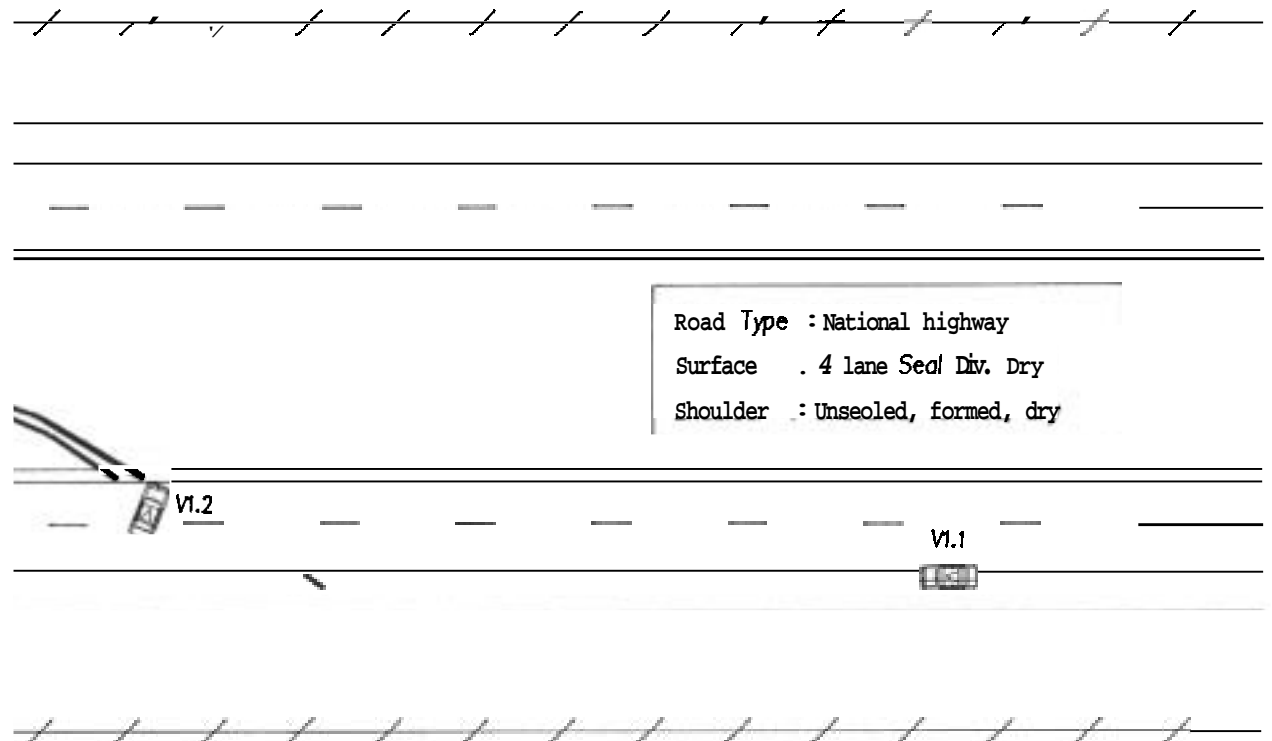
CRASH DESCRIPTION:

The vehicle ~~was~~ travelling south at approximately 90 km/h in the left lane of a four lane highway divided by a broad grassed median when it went off the seal to the left and ran onto the gravel shoulder. It then travelled back onto the road, crossing in a clockwise yaw to the right lane and onto the median. Once on the median the driver turned sharply to the left to try to regain the seal causing the vehicle to yaw anti-clockwise and roll to the right striking the ground first with its right rear corner and then the left front corner. As the vehicle rolled the driver was thrown to the rear, landing on the back seat. The van came to rest on its wheels on the eastern edge of the median facing north east. In trying to account for the vehicle initially leaving the road the driver thinks that she may have been reaching over to the passenger's side to get something from her handbag immediately prior to it leaving the road.

UNIT 1: Vehicle Type: 1985 Nissan Vanette

Driver: Female, 37 years, manager, BAC: zero, inertia reel
 3 point seat belt available but probably not worn

Injuries: Brief period of unconsciousness;
 laceration to top of head; neck strain; bruising
 to left thigh, hips, knees and right foot.
 Transported to hospital but not admitted. MAIS: 2



Legend

Fence (Post and Wire)

Skid Marks

Grassway

N.H.&M.R.C. Road Accident Research Unit
Rural Accident Study 1986-87

Title: RS-049

Projection: UTM	Scale: 1:1000
Date: 1988	Date: 1988

CASE: RS 50

GENERAL CHARACTERISTICS :

CRASH TYPE: Collision with utility pole - (Fatal)

VEHICLES: 1 prime mover

DAY: Wednesday TIME: 0600 hours

WEATHER: Fine LIGHTING CONDITIONS: Dawn

ROAD SURFACE: Sealed, dry

OCCUPANTS: 1

SPEED LIMIT: 110 km/h

CRASH DESCRIPTION:

The vehicle, a prime mover, was travelling in a northerly direction at an unknown speed. It had just negotiated a *sharp* right hand bend and entered a straight section of the two-lane road when it crossed the centre line and went off the right side of the road where it struck a steel and concrete utility pole to which was attached a large oil-filled transformer. The right front of the vehicle struck the pole which penetrated to the firewall. The upper part of the utility pole, to which the transformer was attached, folded down over the right side of the cab crushing the roof onto the drivers head. At impact with the pole the unrestrained driver was thrown forwards and to the left, striking the rim of the steering wheel. His head was trapped between the crushed roof and the instrument panel.

UNIT 1: Vehicle Type : 1982 International Harvester S2670 prime Mover

Driver: Male, 30 years, haulage contractor, BAC: zero, no seat belt available. A lap belt had been fitted to the vehicle but **one** part of the belt was no longer bolted to the attachment point and was lying loose on the floor of the vehicle

Injuries: Laceration across chin, left cheek and left ear; comminuted fracture of skull base extending into the front midline and backwards across the cribriform plate to bisect the pituitary fossa: meninges showed traumatic subarachnoid haemorrhage over the cerebellum; inhaled blood was also found in the lungs: abrasion on medial aspect of left calf. Dead at scene. MAIS: 5

Road Type : Secondary arterial
 Surface : 2 lane seal, dry
 Shoulder : Formed, dry

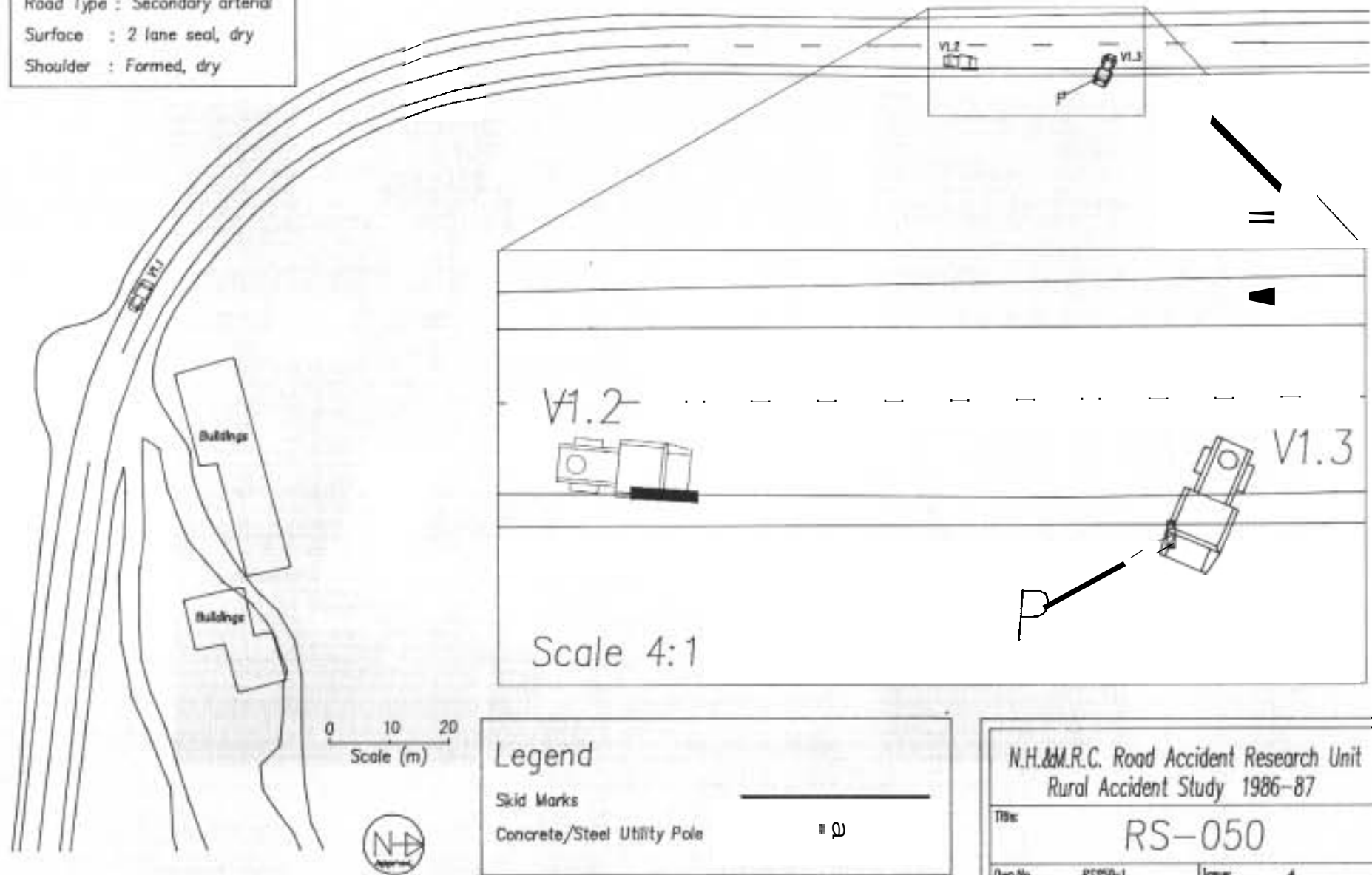




FIGURE A53: Crash 49. Final position of van showing damage sustained during rollover.



FIGURE A54: Crash 50. Final position of prime mover. Note deformation to right side of the roof due to impact with utility pole.

GENERAL CHARACTERISTICS:

CRASH TYPE: Single vehicle rollover - (Non-Fatal)
 VEHICLES: 1 forward control van
 DAY: Saturday TIME: 1630 hours
 WEATHER: Fine LIGHTING CONDITIONS: Daylight, sunny
 ROAD SURFACE: Sealed, dry
 OCCUPANTS: 1
 SPEED LIMIT: 110 km/h

CRASH DESCRIPTION:

The van was travelling south on a two-lane highway at between 100 and 110 km/h. The driver was returning home from work. He had spent the previous week working long hours and stated that he was feeling very tired. He had 'dozed off' several times during the journey home. The driver thinks that he must have fallen asleep with the vehicle crossing the centre line and running off the road onto the gravel shoulder. At this point the driver thinks he woke up and, seeing he was on the incorrect side of the road, turned sharply to the left to regain the bitumen, causing the vehicle to yaw anti-clockwise across the road onto the left shoulder. The driver then steered back to the right in an attempt to regain the bitumen once again, and the vehicle yawed clockwise on the gravel shoulder, struck the edge of the bitumen with its left wheels and rolled to the left, coming to rest on the road back on its wheels and facing west.

UNIT 1: Vehicle Type : 1983 SC Mitsubishi Starwagon

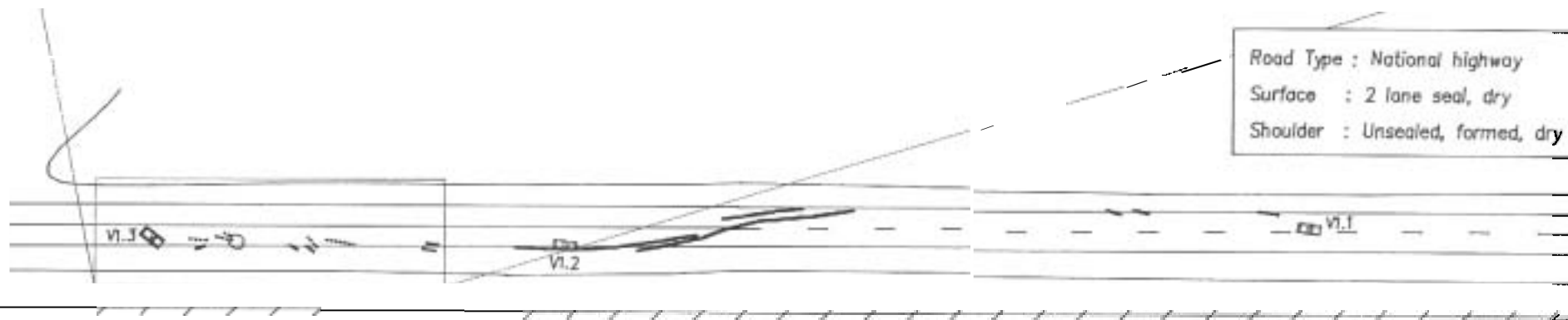
Driver: Male, 32 years, tradesman, BAC: zero , inertia reel
 3 point seat belt available, probably worn

Injuries: Brief period of unconsciousness; neck strain; bruised left and right shoulders; bruised left hip; bruised left ribs. Remained at the scene. MAIS: 2

*
 self-reported BAC



Scale 4:1



0 10 20
Scale (m)

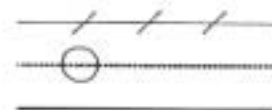


Legend

Fence (Post and Wire)

Scrape marks and liquid pool

Skid Marks



N.H.&M.R.C. Road Accident Research Unit
Rural Accident Study 1986-87

Title:

RS-051

Dwg.No.	RS051-1	Issue:	4
Projection:	-	Scale:	Internal
Drawn By:	ATSV	Date Drawn:	6 Jan 88

ACC. NO.: RS051

Mapped by: M. J. B.

Mapping Date: 17 Nov 87

Date Source: Road Accident Research Unit

GENERAL CHARACTERISTICS:

CRASH TYPE: Head-on collision - (Non-Fatal)

VEHICLES: 2, car and a car towing a laden trailer

DAY: Wednesday TIME: 1220 hours

WEATHER: Fine LIGHTING CONDITIONS: Daylight, sunny

ROAD SURFACE: Sealed, dry

OCCUPANTS: unit 1, 2; unit 2, 1

SPEED LIMIT: 110 km/h

CRASH DESCRIPTION:

Unit 1, towing a two wheel trailer loaded with household furniture, was travelling south on a two-lane road at a speed, estimated by the driver, of approximately 80 km/h. The vehicle's occupants, an elderly male driver and his young grandson were returning to Adelaide after visiting relatives. At the exit of a slight left hand bend Unit 1 crossed the centre line of the road and collided head-on with Unit 2, which was travelling north at about 110km/h, according to the driver. The vehicles struck left front to left front resulting in considerable intrusion into the left occupant space of each vehicle. Unit 1 left a skid mark of approximately 10 metres from its left front wheel and all four wheels of Unit 2 left skid marks measuring 17 metres. The unrestrained front seat passenger in unit 1 came to rest in the left front footwell with his head near the hand brake. The driver of Unit 2 claimed that after impact he was slumped forward with his head towards the floor.

UNIT 1: Vehicle Type : 1985 Toyota Corona Sedan with loaded two wheel trailer weighing approximately 1 tonne

Driver: Male, 65 years, retired, BAC: zero, inertia reel 3 point seat belt worn

Injuries: Concussion; laceration of right eyebrow: laceration of left knee: laceration of left wrist: fractures of left ribs 5-10. Chest injury resulted from impacting the steering wheel which was pushed back into the occupant space. Hospitalized for 10 days. MAIS: 3

Front Seat Passenger: Male, 4 years, inertia reel 3 point seat belt available but not worn

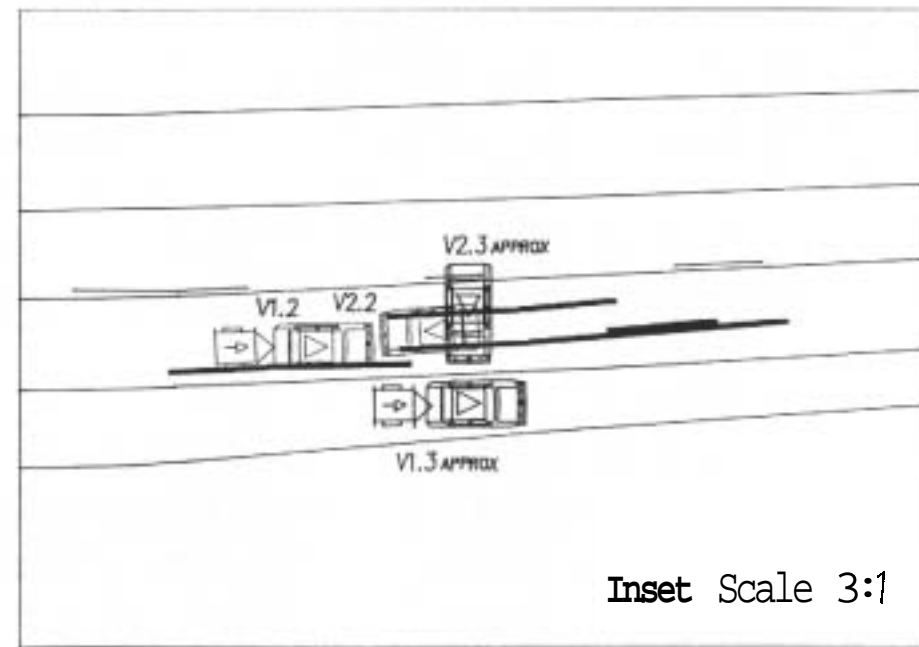
Injuries: Concussion: fracture left femur; fracture left tibia and fibula; bruising to left cheek; laceration to left buttock. Leg injuries are likely to have resulted from extensive intrusion of floor pan on the left side and the head injury due to contact with the instrument panel which intruded almost to the seat back. Hospitalized for an unknown time: **MAIS: 3**

UNIT 2:

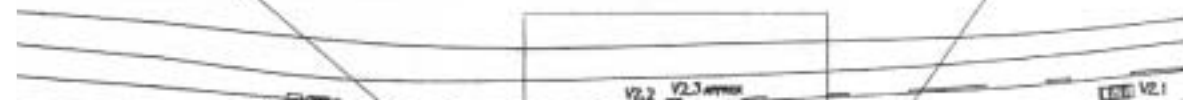
Vehicle Type: 1982 Mitsubishi Scorpion two door sedan

Driver: Male, 60 years, invalid pensioner, BAC: zero, inertia reel 3 point seat belt **worn**

Injuries: Concussion; laceration to left forehead; bruising to chest and across abdomen; laceration to left knee. Chest impact resulted from contacting steering wheel hub, and abdominal bruising from seatbelt. Hospitalized < 24 hours. **MAIS: 1**



Inset Scale 3:1



GENERAL CHARACTERISTICS:

CRASH TYPE: Head-on collision - (Non-Fatal)
 VEHICLES: 2 cars
 DAY: Thursday TIME: 1130 hours
 WEATHER: Fine LIGHTING CONDITIONS: Daylight, sunny
 ROAD SURFACE: Sealed, dry
 OCCUPANTS: unit 1, 2; Unit 2, 2
 SPEED LIMIT: 110 km/h

CRASH DESCRIPTION:

unit 1, containing a retired couple on holiday, was travelling west at approximately 85 km/h on a two-lane road approaching at right hand bend. Unit 2 appeared from around the bend on the incorrect side of the road attempting to overtake a station wagon which was travelling slowly. The driver of Unit 1 braked and steered to the right as there was a gully on the left. Unit 2 braked and skidded. The two vehicles collided head-on striking left front to left front. The driver of the station wagon stated that Unit 2 had been following behind her for sometime and had attempted to pass on several occasions. She concluded that the driver became impatient, assumed that the road ahead was clear, and decided to pass. The occupants of Unit 2 had left the scene when the study team arrived and later refused to be interviewed. Persons at the scene say that they sustained only minor injuries.

UNIT 1: Vehicle Type : 1985 Mitsubishi Magna Sedan

Driver: Male, 61 years, retired, BAC: zero*, inertia reel
 3 pint seat belt worn

Injuries: Bruising across chest from seatbelt.
 Remained at scene. MAIS: 1

Front Seat Passenger: Female, 58 years, home duties, BAC:
 zero*, inertia reel 3 pint seat belt worn

Injuries: Bruising across chest from seat belt.
 Remained at scene. MAIS: 1

UNIT 2: Vehicle Type : 1973 W valiant Sedan

Driver: Male, 55 years, no other details known

Front Seat Passenger: Male, 55 years. No other details
 known

*
 self-reported BAC

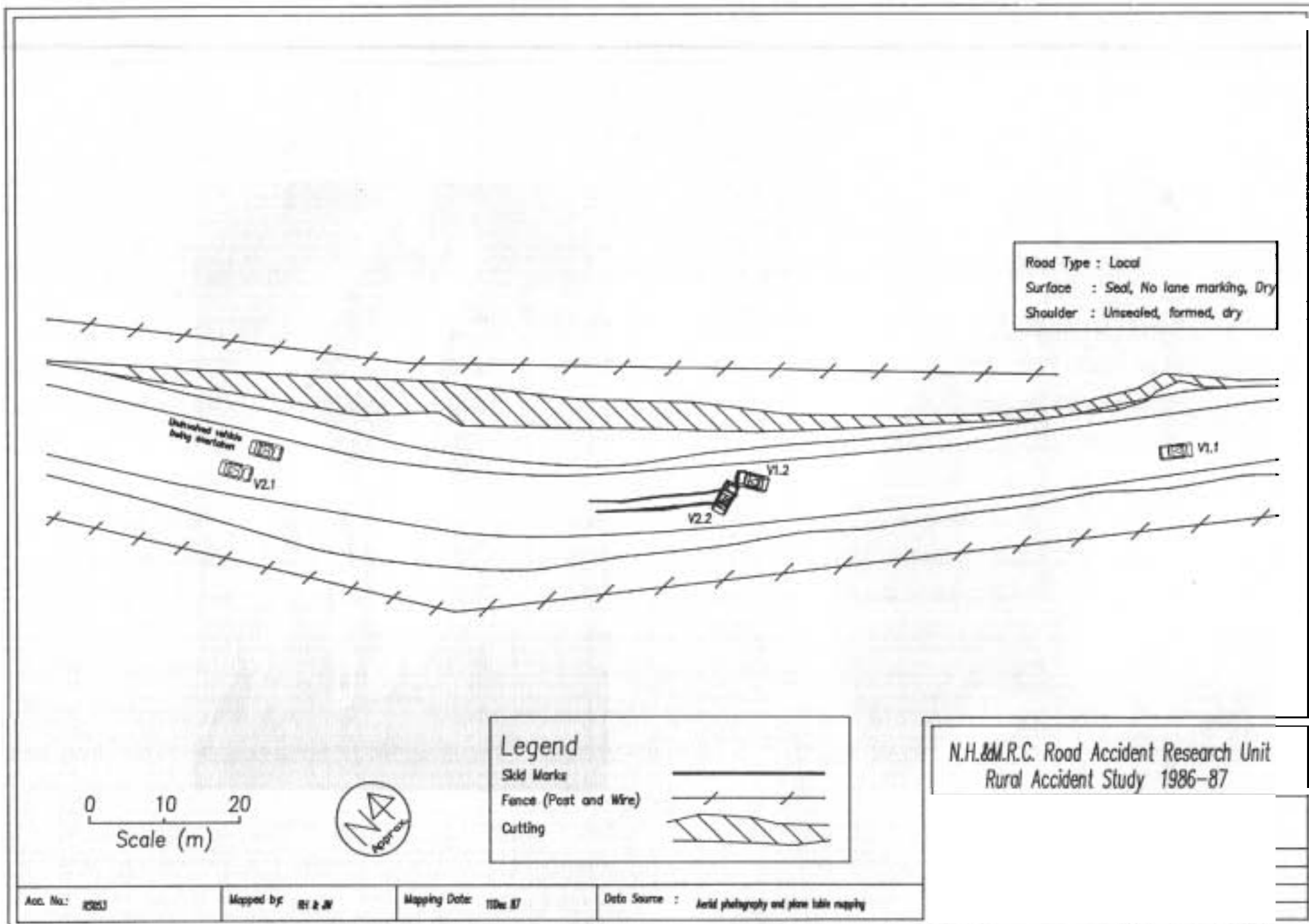




FIGURE A55: Crash 52. Frontal damage to Toyota Corona.



FIGURE A56: Crash 53. Frontal damage to Mitsubishi Magna.

GENERAL CHARACTERISTICS:

CRASH TYPE: Collision with embankment - (Non-Fatal)
 VEHICLES: 1 car
 DAY: Friday TIME: 1130 hours
 WEATHER: Fine LIGHTING CONDITIONS: Daylight, sunny
 ROAD SURFACE: Sealed, dry
 OCCUPANTS: 4
 SPEED LIMIT: 110 km/h

CRASH DESCRIPTION:

The car was travelling north on a two-lane road at a speed estimated by the driver at 70 km/h. The vehicle's elderly occupants were returning home after an outing. The vehicle was exiting from a left hand bend when it continued straight ahead, crossed the centre line and ran off the road on the right hand side. It travelled through a post and wire fence and came to rest with the left front against a bank and the right front against a fence post. The driver stated that he had been feeling weary for some time and was looking for somewhere to stop so that he could rest when he fell asleep. His next recollection is the front seat passenger yelling his name and awakening to see the car travelling through the fence.

UNIT 1: Vehicle Type : 1967 Rolls Royce Silver Shadow sedan

Driver: Male, 76 years, retired, BAC: zero*, 3 point static seat belt worn

Injuries: Superficial bruising. Transported to hospital but not admitted. MAIS: 1

Front Seat Passenger: Male, 59 years, retired, BAC: zero*, 3 pint static seat belt worn

Injuries: Superficial bruising. Transported to hospital but not admitted. MAIS: 1

Rear Right Seat Passenger: Female, 58 years, home duties, BAC: zero*, 3 point static seat belt worn

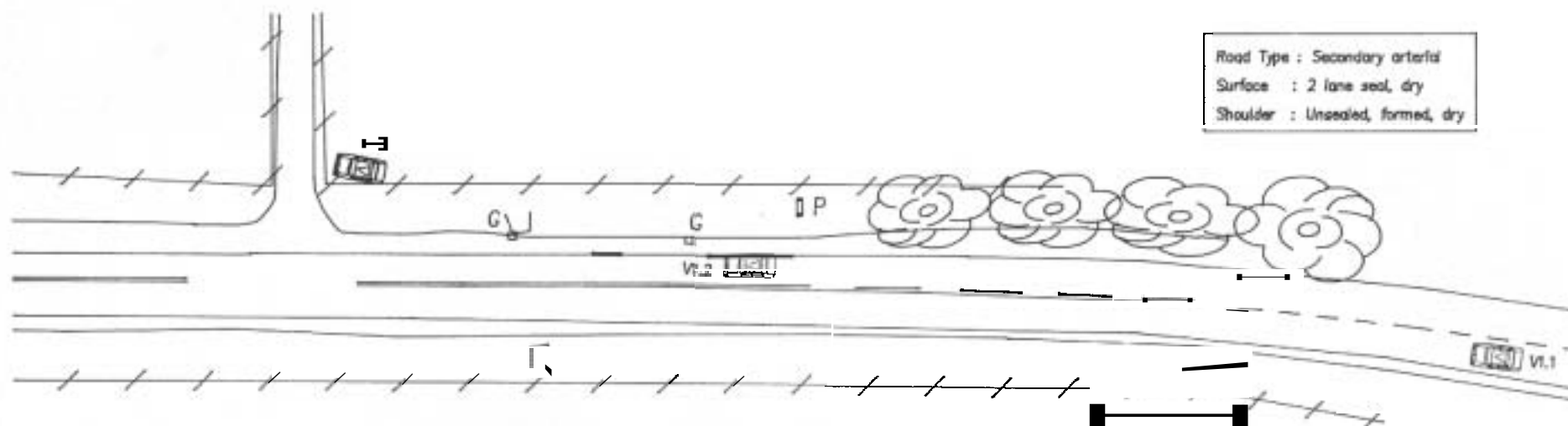
Injuries: Superficial bruising. Transported to hospital but not admitted. MAIS: 1

*

self-reported BAC

Rear Left Seat Passenger: Female, 75 years, home duties,
BAC: zero, 3 pint static seat belt worn

Injuries: Superficial bruising. Transported to
hospital but not admitted. MAIS: 1



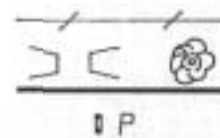
Road Type : Secondary arterial
 Surface : 2 lane seal, dry
 Shoulder : Unsealed, formed, dry

0 10 20
 Scale (m)



Legend

Fence (Post and Wire)
 Culvert, Tree
 Skid Marks
 Concrete/Steel Utility Pole



N.H.&M.R.C. Road Accident Research Unit
 Rural Accident Study 1986-87

Title:

RS-054

Dwg.No.	RS054-1	Issue:	1
Projection:	-	Scale:	Unscaled
Drawn By:	AISV	Date Drawn:	14 Jan 88
Sheet size:	-	Sheet:	1 of 1 sheets

Acc. No.: RS054

Mapped by: M & J

Mapping Date: 1 Jan 88

Data Source: Aerial photograph

GENERAL CHARACTERISTICS:

CRASH TYPE: Side impact intersection collision - (Non-Fatal)

VEHICLES : Forward control van and a car

DAY: Saturday TIME: 1125 hours

WEATHER: Fine LIGHTING CONDITIONS: Daylight, sunny

ROAD SURFACE: Sealed, dry

OCCUPANTS: Unit 1, 6; Unit 2, 2

SPEED LIMIT: 110 km/h

CRASH DESCRIPTION:

Unit 1, the occupants of which were on a weekend camping trip, was travelling east down a moderate grade on a two-lane road approaching an intersection at which the driver had to give way when he found that the brakes had failed. Continuing straight ahead, the driver of Unit 1 slaved from his initial speed of 75 km/h by engaging third and then second gear. As Unit 1 crossed the intersection it was struck on the left rear corner by the left front of Unit 2 travelling south on a two-lane road at 80 km/h. The driver of Unit 2, a middle aged woman on an outing with her husband, stated that she saw Unit 1 emerge from the side road, braked and steered to the left but was unable to avoid colliding with it. At impact, Unit 1 yawed anti-clockwise and rolled onto its right side, coming to rest facing west having rotated through 270°. The driver reported that there was extensive fuel leakage from the petrol filler cap after Unit 1 came to rest. The centre door latches of Unit 1 opened during the collision allowing the four rear occupants seated on the floor to be ejected. The rear door also opened in the collision. After impact Unit 2 rotated counter clockwise through 270° coming to rest also facing west.

The vehicle inspection of Unit 1 revealed that a rigid hydraulic brake line of its single brake circuit had failed where it passed through a chassis member towards the rear of the vehicle. Its appearance indicated that leakage had been occurring for some time. The driver reported that when he checked the brake fluid reservoir several days before the crash it was empty and he refilled it. He also reported that for some time the brake pedal had needed to be pumped to operate the brakes.

UNIT 1: Vehicle Type: Volkswagen Kombi Type I forward control van.
Year circa 1959

Driver: Male, 25 years, student, BAC: zero*, 3 point static seat belt available but not worn

Injuries: Superficial bruising. Remained at scene. MAIS: 1

* self-reported BAC

*

Front Seat Passenger: Male, 21 years, student, BAC: zero ,
static 3 point seat belt available but not worn

Injuries: Superficial bruising. Remained at
scene. MAIS: 1

*

Rear Occupant 1: Male, 23 years, tradesman, BAC: zero , no
seat or seat belt available

Injuries: Superficial bruising. Ejected fran
vehicle. Remained at scene. MAIS: 1

*

Rear Occupant 2: Male, 20 years, student, BAC: zero , no
seat or seat belt available

Injuries: Fractured right humerus resulting from
ejection fran vehicle: superficial bruising.
Transported to hospital, but not admitted. MAIS:
2

*

Rear Occupant 3: Female, 17 years, student, BAC: zero , no
seat or seat belt available

Injuries: Superficial bruising. Ejected from
vehicle. Transported to hospital but not admitted.
MAIS: 1

*

Rear Occupant 4: Female, 17 years, student, BAC: zero , no
seat or seat belt available

Injuries: Superficial bruising. Ejected from
vehicle. Transported to hospital but not admitted.
MAIS: 1

UNIT 2: Vehicle Type : 1978 Toyota Corona Sedan

*

Driver: Female, 59 years, hane duties, BAC: zero , inertia
reel 3 point seat belt worn

Injuries: Shock, neck strain. Remained at scene.
MAIS: 1

*

Front Seat Passenger: Male, 68 years, retired, BAC: zero ,
inertia reel 3 point seat belt worn

Injuries: Shock, neck strain. Remained at scene.
MAIS: 1

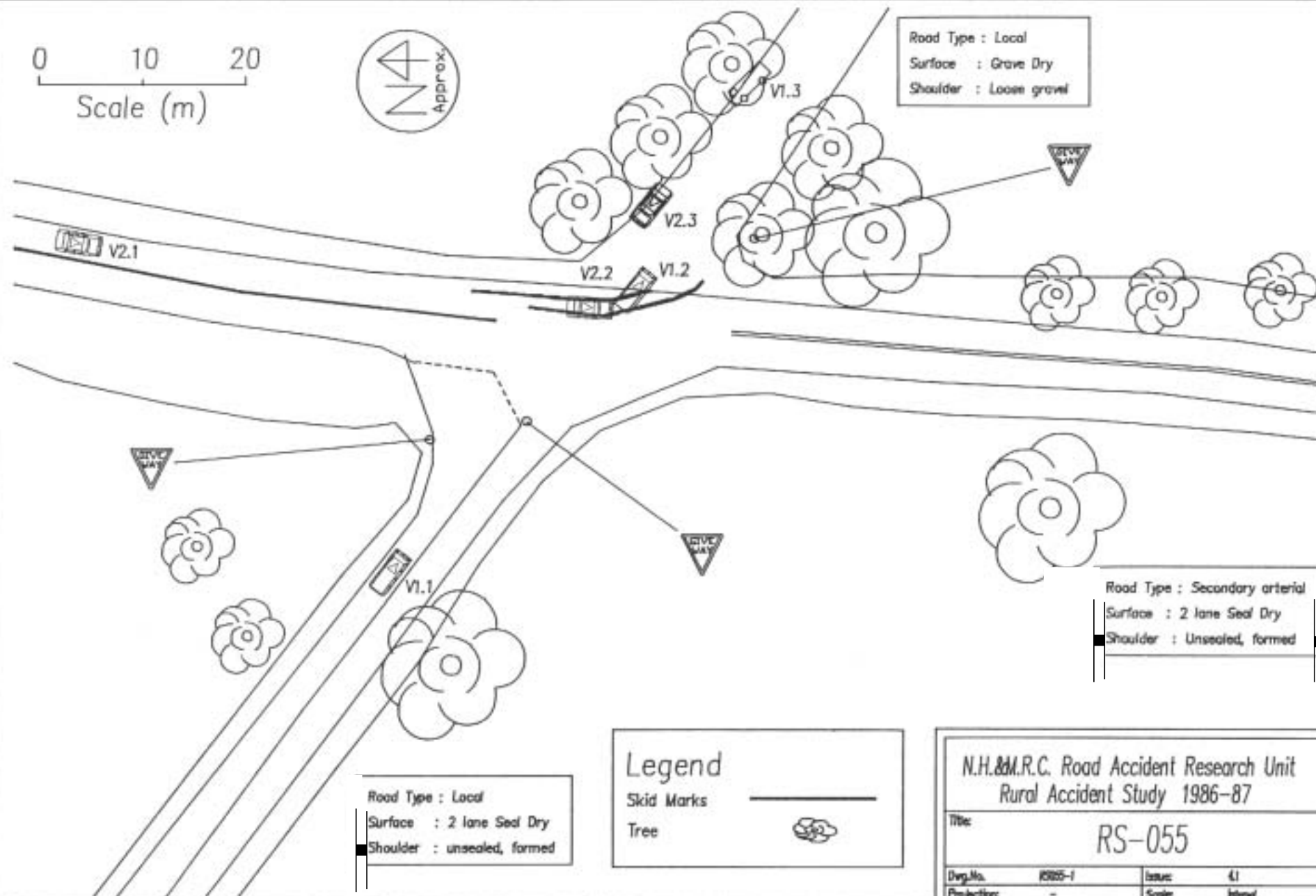
*

self-reported BAC

0 10 20
Scale (m)



Road Type : Local
Surface : Gravel Dry
Shoulder : Loose gravel



N.H.&M.R.C. Road Accident Research Unit
Rural Accident Study 1986-87

Title: RS-055

Dwg. No.	RS055-1	Issue:	4/1
Projections:	-	Scale:	Isoterial
Drawn By:	ATSV	Date Drawn:	14 Jan 88
Sheet size:	-	Sheet:	1 of 1 sheets

Acc. No.: RS055

Mapped by: RH & JH

Mapping Date: 11 Dec 87

Data Source: Aerial photograph and plane table mapping



FIGURE A57: Crash 54. Final position of Rolls Royce, and frontal damage due to impact with fence post.



FIGURE A58: Crash 55. Damage to left side of van. Centre and rear doors opened during the rollover allowing the rear occupants to be ejected.

GENERAL CHARACTERISTICS:

CRASH TYPE: Side impact intersection collision - (Non-Fatal)

VEHICLES: 2, utility and car

DAY: Sunday TIME: 1700 hours

WEATHER: Fine LIGHTING CONDITIONS: Daylight, sunny

ROAD SURFACE: Unsealed, dry

OCCUPANTS: unit 1, 2; unit 2, 3

SPEED LIMIT: 110 km/h

CRASH DESCRIPTION:

Unit 2 was travelling west on a dry, unsealed road approaching an uncontrolled intersection. On reaching the intersection the driver of Unit 2 stated that she slowed, changing down to second gear, and seeing no conflicting traffic proceeded through the intersection. It was then struck on the left 'B' pillar by Unit 1 travelling north, also on a dry unsealed road, at 90 km/h. Immediately prior to impact the driver of Unit 2 noticed unit 1 approaching and attempted to accelerate out of its path. A subsequent examination of the intersection revealed that due to sight restrictions on the left it was not possible for persons travelling west to check for north bound traffic until they were positioned well into the intersection. This indicates that while Unit 2 may have slowed for the intersection the driver could not have adequately checked for traffic travelling north. After impact, Unit 2 yawed through 90° clockwise and travelled up a slight embankment and through a post and wire fence. It came to rest on the northern shoulder on the western side of the intersection facing north west. Unit 1 continued through the intersection caning to rest on the western edge of the road facing north. The driver of Unit 1 travelled the road almost daily. She stated that when she approached the intersection she checked for dust to indicate the presence of traffic on the intersecting road. On this occasion she saw none and therefore did not reduce her speed, despite the fact that sight restrictions prevented her directly checking for vehicles on the intersecting road to her right. She also stated that she thought that she was travelling on a priority road and all traffic on the intersecting road had to stop and give way. After both vehicles came to rest all persons involved in the crash except the driver of Unit 2 were unconscious. She removed all other persons from the vehicles. She found that the seat belt buckle of the rear seat occupant of Unit 2 was jammed and she had to cut the belt to release him.

UNIT 1: Vehicle Type: 1984 Subaru 4WD Utility

Driver: Female, 52 years, home duties, BAC: zero , inertia
reel 3 point seat belt available but not worn

* self-reported BAC

Injuries: Loss of consciousness for unspecified period; vertical laceration to forehead from striking instrument panel and/or windscreen; fractured third left rib posteriorly; laceration to both knees from underside of dash board. Hospitalized for 10 days. MAIS: 2

*

Passenger: Male, 78 years, farmer, BAC: zero, inertia reel 3 point seat belt available but not worn

Injuries: Loss of consciousness for unspecified period; laceration to left eyelid; left thumb; left knee; right shin and right elbow: fractured left ribs; fractured right maxilla from contacting dashboard on the passenger's side. Hospitalized for 13 days. MAIS: 2

UNIT 2:

Vehicle Type: 1975 XB Ford Falcon sedan

Driver: Female, 23 years, home duties, BAC: zero, inertia reel 3 point seat belt available but not worn

Injuries: Neck strain; bruising to chest, abdomen, lumbar region, left elbow and left thigh. Transported from scene but not hospitalized. MAIS: 1

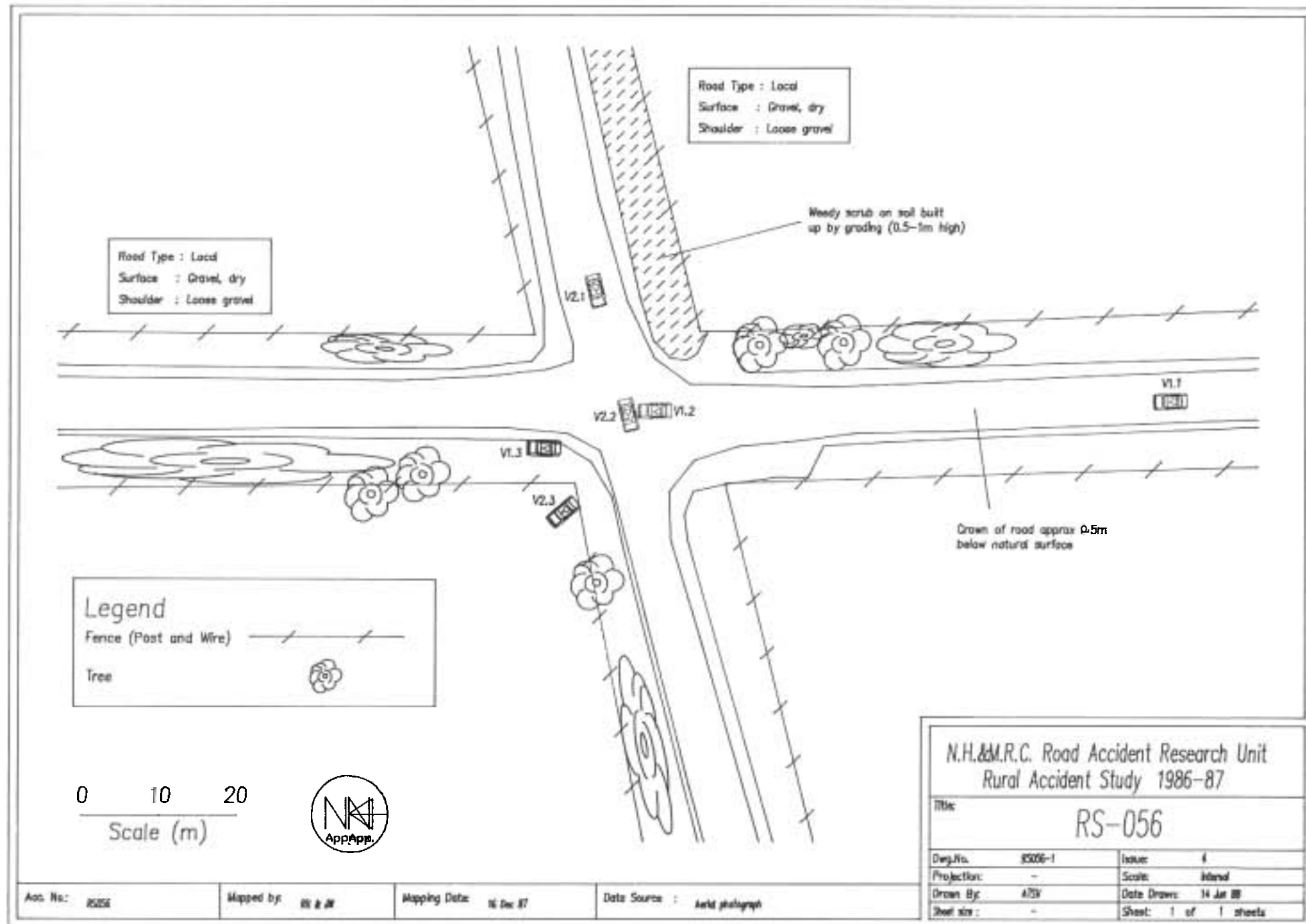
Front Seat Passenger: Male, 42 years, labourer, BAC: zero, inertia reel 3 point seat belt available but not worn

Injuries: Loss of consciousness for 30 minutes; laceration to left side of head; neck strain; fractured ribs with associated laceration to lung. Hospitalized for 14 days. MAIS: 3

Right Rear Seat Passenger: Male, 15 years, student, BAC: zero, static 3 point seat belt worn

Injuries: Loss of consciousness for unspecified period; bruising to right arm, abdomen, left hip, lumbar region and left thigh; fractured left iliac crest. Hospitalized for 3 days. MAIS: 3

* self-reported BAC



GENERAL CHARACTERISTICS:

CRASH TYPE: Side-swipe collision - (Non-Fatal)
 VEHICLES: 2, car and utility
 DAY: Saturday TIME: 0930 hours
 WEATHER: Fine LIGHTING CONDITIONS: Daylight, sunny
 ROAD SURFACE: Sealed, dry
 OCCUPANTS: unit 1, 1: unit 2, 2
 **
 SPEED LIMIT: 60 km/h

CRASH DESCRIPTION:

Unit 2, travelling north, was positioned near the centre line of a two-lane road and was about to turn right into a side road when the driver saw Unit 1, travelling south, approaching over a crest. Unit 1 appeared to be travelling fast and so the driver of Unit 2 decided that it would be safer to let Unit 1 pass before she completed her turn. The driver of Unit 1, travelling at over 110 km/h, saw Unit 2 waiting to turn right. He presumed that it was going to complete its turn and so decided to move into the right lane and pass on its outside. When the driver of Unit 1 realized that Unit 2 was not going to turn he braked and veered back to the left leaving skid marks of 16 metres before colliding with Unit 2. The right side of Unit 1 struck and slid along the right side of Unit 2, pushing it back off the road. Unit 2 rotated clockwise through approximately 90° and came to rest facing east with the front half protruding out onto the seal. After impact, Unit 1 continued south in a slight anti-clockwise yaw for 33 metres caning to rest with its front angled onto the eastern shoulder.

UNIT 1: Vehicle Type : 1979 XD Ford Falcon utility

Driver: Male, 26 years, fisherman, BAC: zero , inertia
 reel 3 point seat belt available, probably worn

Injuries: Laceration to face from striking
 tempered glass windscreen: grazed left shin from
 contact with hand brake. Treated at doctor's
 surgery. MAIS: 1

* self-reported BAC

** When Unit 1 was first observed, it was travelling in a 110 km/h section of road. The speed limit changed to 60 km/h as the road entered a small township.

UNIT 2:

Vehicle Type: 1971 XY Ford Falcon sedan

Driver: Female, 21 years, manager, BAC; zero , static 3
point seat belt worn *

Injuries: Bruised right hip from contact with arm
rest. Remained at scene. **MAIS:** 1

Front Seat Passenger: Male, 22 years, labourer, BAC; zero ,
static 3 point seat belt worn *

Injuries: Superficial bruising. Remained at
scene. **MAIS:** 1

*

self-reported BAC

Scale 3:1

v2.3

V1.3



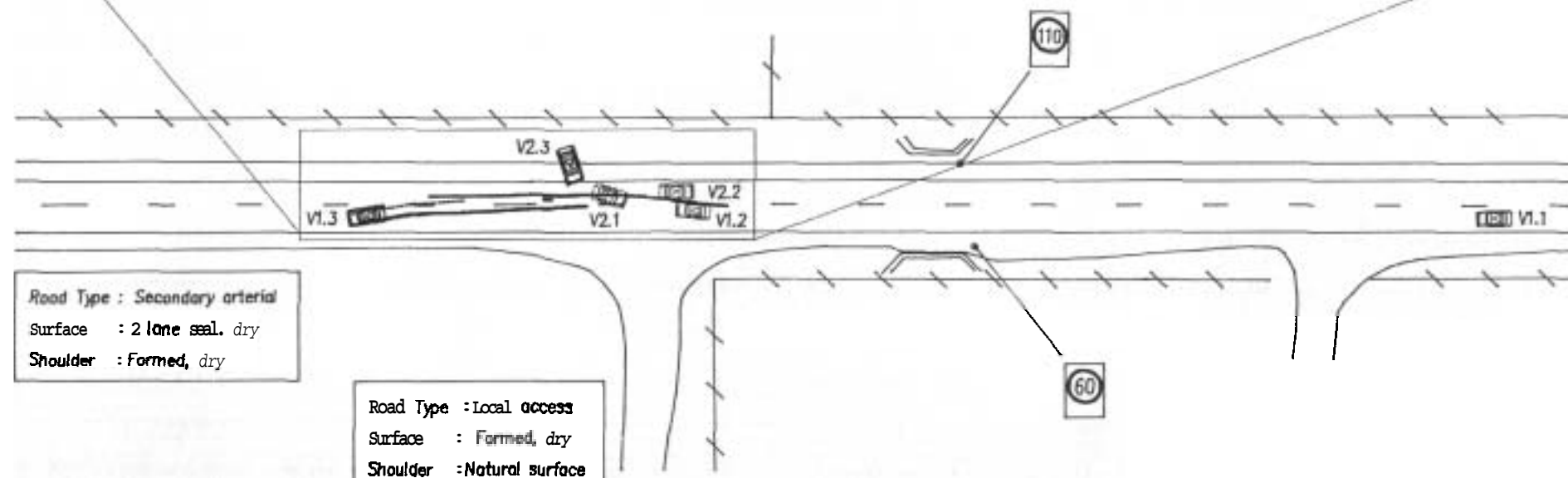
V2.1



V2.2



V1.2



Legend

Fence (Post and Wire)



Scrapes



Skid Marks



Culvert



N.H.M.R.C. Road Accident Research Unit
Rural Accident Study 1986-87

Title

RS-057

Drawn By:	ATSV	Date Drawn:	14 Jun 88
Sheet No.:	1	Sheet:	1 of 1 sheets
Drawn No.:	RS057-1	Issue:	4
Projection:	-	Scale:	Internal

Acc. No: RS057

Mapped by: JW & RH

Mapping Date: 7 Dec 87

Data Source: Plane table & aerial photograph

CASE: RS 58

GENERAL CHARACTERISTICS:

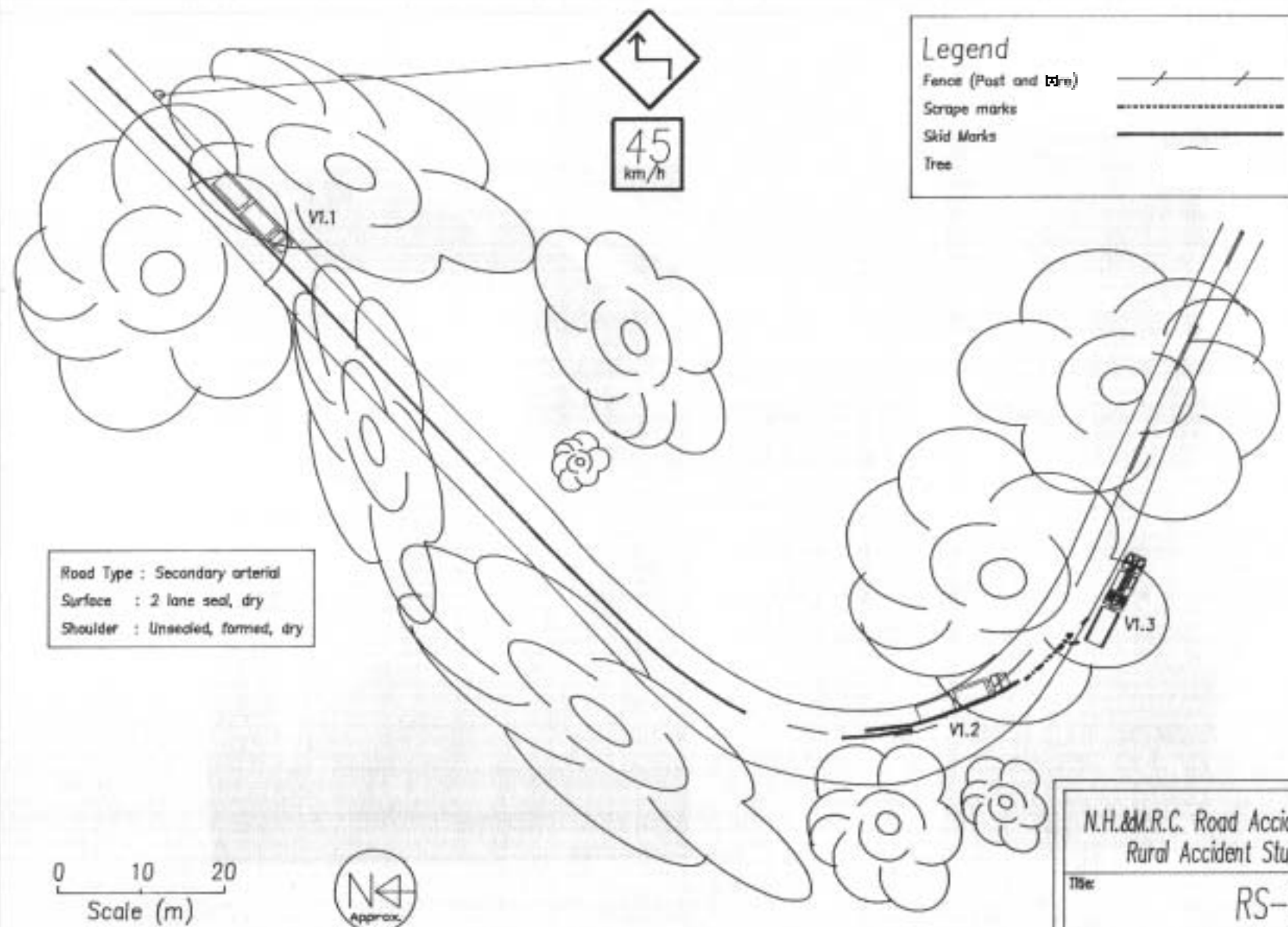
CRASH TYPE: Single vehicle rollover - (Non-Fatal)
VEHICLES: 1 tip truck with 3 axle trailer
DAY: Thursday **TIME:** 0430 hours
WEATHER: Fine **LIGHTING CONDITIONS:** Night, road not lit
ROAD SURFACE: Sealed, dry
OCCUPANTS: 1
SPEED LIMIT: 110 km/h

CRASH DESCRIPTION:

A tip truck with a 3 axle trailer was travelling south west downhill on a winding two-lane road early in the morning. It failed to negotiate a sharp left hand bend, crossing the centre line of the road and onto the gravel shoulder where it struck a concrete culvert and rolled to the right onto its roof, spilling its load of superphosphate. The trailer remained upright and rode up under the inverted truck. The driver stated that as he attempted to slow for the corner, the truck's brakes failed causing the vehicle to go out of control. An examination of the brakes at the scene revealed no defect. The driver was trapped in the cab for several hours before being found by a passing motorist. After extrication he was transported to hospital but received only superficial soft tissue injuries.

UNIT 1: Vehicle Type : Ford 9000 Tip Truck with dog trailer, both loaded with superphosphate
Driver: Male, 23 years, truck driver, SAC: unknown, no seat belt available.

Injuries: Superficial soft tissue injuries.
Transported to hospital but not admitted. **MAIS:** 1



N.H.&M.R.C. Road Accident Research Unit
 Rural Accident Study 1986-87

Title:

RS-058

Drawn By:	RS058-1	Issue:	1
Projection:	-	Scale:	Internal
Drawn By:	ATW	Date Drawn:	14 Jan 88
Sheet size:	-	Sheet:	1 of 1 sheets

Acc. No.: RS058

Mapped By: R. & J.

Mapping Date: 17 Dec 87

Date Source: Aerial photograph and plane table mapping



FIGURE A59: Crash 57. Final position of Ford Falcon and damage to right side.



FIGURE A60: Crash 58. Final position of the tip truck.

GENERAL CHARACTERISTICS:

CRASH TYPE: Single vehicle rollover - (Non-Fatal)
 VEHICLES: 1 car
 DAY: Wednesday TIME: 0200 hours
 WEATHER: Fine LIGHTING CONDITIONS: Night, road not lit
 ROAD SURFACE: Sealed, dry
 OCCUPANTS: 2
 SPEED LIMIT: 110 km/h

CRASH DESCRIPTION:

The vehicle was travelling west on a winding two-lane road through undulating terrain. It failed to negotiate a sharp right hand bend and instead continued straight ahead running onto the left shoulder and up a rocky embankment where it rolled to the right, coming to rest on its roof. The driver of the rented vehicle was on his way home with a friend. They had both spent the evening drinking with friends. The driver had no recollection of the crash. Skid marks indicate braking prior to the vehicle leaving the bitumen surface and suggest that the driver attempted to slow the car before it ran off the road. The driver, who could have travelled home on a newer, more direct road, indicated that he chose the older road as he was less likely to encounter a random breath testing unit. Inspection of the vehicle revealed that three tyres were bald and all four tyres were different brands and sizes. The left front tyre was also seriously under-inflated. These factors are likely to have affected the directional stability of the vehicle.

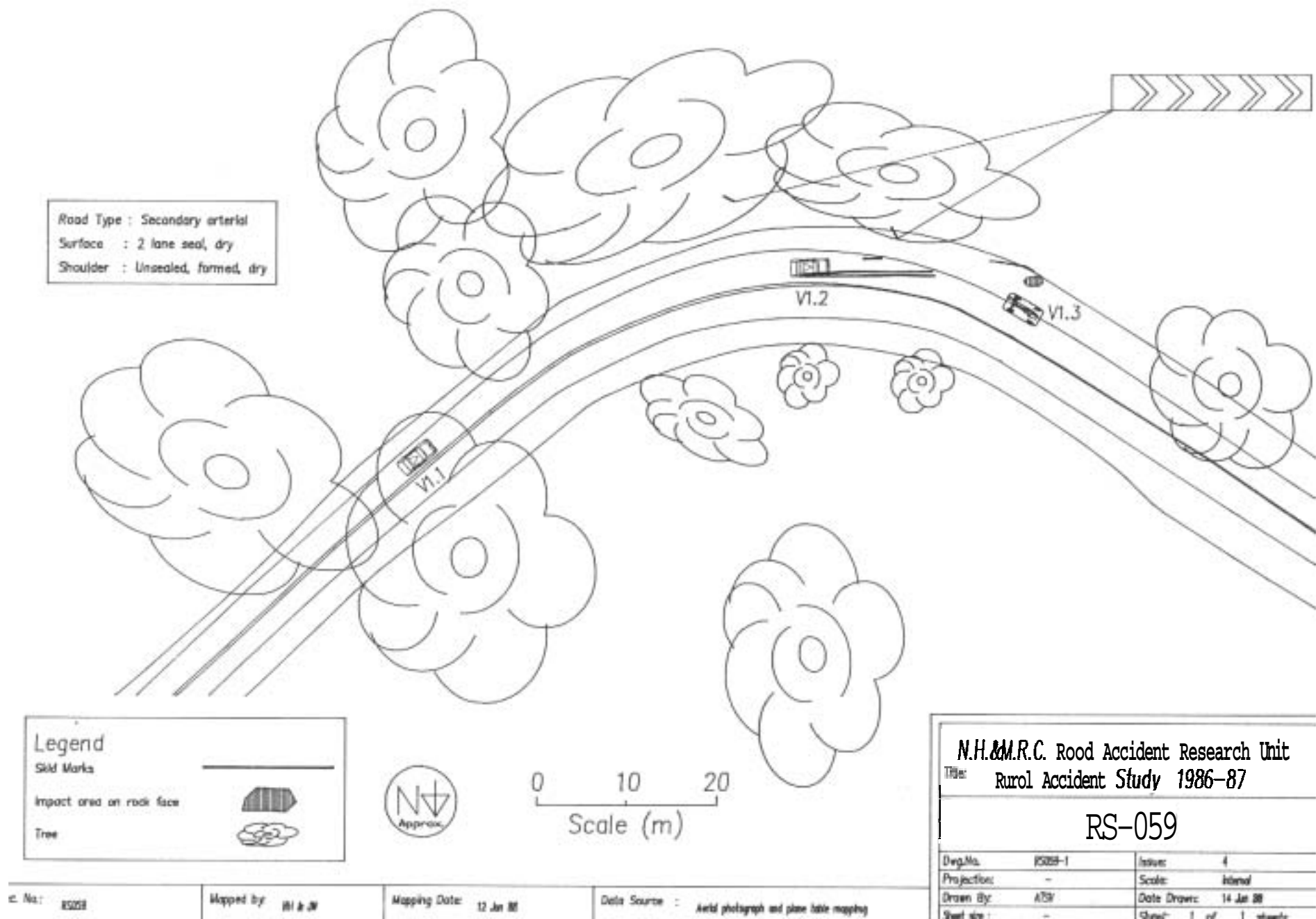
UNIT 1: Vehicle Type : 1980 Chrysler Valiant Station wagon

Driver: Male, 34 years, shearer, BAC: 0.142, inertia reel
 3 point seat belt available but not worn

Injuries: Concussion; laceration of forehead;
 fractured nose; neck strain; bruising of chest;
 laceration of right elbow; laceration right hand;
 bruising both knees. MAIS: 2

Front Seat Passenger: Male, 31 years, BAC unknown, inertia
 reel 3 point seat belt available but not worn

Injuries: Concussion; laceration to face; neck
 strain; bruising of chest, left wrist and knees.
 MAIS: 2



GENERAL CHARACTERISTICS:

CRASH TYPE: Side impact intersection collision - (Fatal)
 VEHICLES: 2, car and semi-trailer
 DAY: Wednesday TIME: 1050 hours
 WEATHER: Fine LIGHTING CONDITIONS: Daylight, sunny
 ROAD SURFACE: Sealed, dry
 OCCUPANTS: Unit 1, 2; Unit 2, 1
 SPEED LIMIT: 110 km/h

CRASH DESCRIPTION:

Little information is available regarding the events preceding this crash. Both occupants of Unit 1 were killed and it was not possible to interview the driver of Unit 2. Unit 1, the occupants of which were an elderly couple on holiday, was facing west on a two-lane road, stopped at a Give Way sign at a channellised T-junction waiting to turn right. Witnesses reported that opposite and slightly to the left of Unit 1 was a bus stopped in a right turn lane in the median, waiting to turn right. Unit 1 drove out into the intersection directly in front of Unit 2, a laden semi-trailer travelling south on the intersecting two-lane highway. There were no braking marks left by Unit 2 prior to the point of impact. The front of the truck struck the right side of the car, the impact centred on the 'A' pillar and right front wheel. The car was pushed along the road and down an embankment where it came to rest on its wheels facing south west. Due to the severe intrusion of the right side into the occupant space the occupants were trapped in the front seats and required extrication. The driver died at the scene and his wife 13 days later in hospital. By the time the study team arrived at the site, the truck, which sustained only minimal damage, had been allowed to leave the scene and so no examination of it was possible. The driver and semi-trailer were from interstate.

UNIT 1: Vehicle Type : 1982 JB Holden Camira sedan

Driver: Male, 76 years, retired, BAC: zero, inertia reel
 3 point seat belt **worn**

Injuries: Fracture of base of skull with contusion over the right parieto-temporal region; and haemorrhage over the left parietal area. Multiple contusions of the lung, haemthorax. Fractures of both wrists; fracture of the pelvis (pubic symphysis); fracture of the right tibia and fibula.

MAIS: 5

Front Seat Passenger: Female, 76 years, home duties, BAC: zero, inertia reel 3 point seat belt **worn**

Injuries: Fractures of left 1-2 ribs and right 1-4 ribs: laceration of right ventricle of the heart. This lead to cardiac tamponade and cardiac arrest. This was successfully relieved at operation. Other injuries were a fracture of pelvis and fracture of mid shaft of right femur. She died 13 days later of congestive cardiac failure. **MAIS: 5**

UNIT 2:

Vehicle Type: 1977 Kenworth prime mover with pantechinicon semi-trailer. Gross weight 31 tonnes

Driver: Male, 51 years, driver, BAC: unknown.

Injuries: **None.** **MAIS: 0**

Road Type : Local
Surface : 2 lane seal, dry
Shoulder : Unsealed, formed, dry

Road Type : Primary arterial
Surface : 2 lane seal, dry
Shoulder : Unsealed, famed. dry

Uninvolved Bus awaiting right turn

V2 stopped under own
braking on shoulder

Legend

Special Marks

Scrape Ma*

Ripple strip median

Raised Median

A horizontal scale bar with a bracket underneath. The bracket is labeled "Scale (m)". Above the bar, there are three tick marks labeled "0", "10", and "20".



N.H.&M.R.C. Rood Accident Research Unit	
Rural Accident Study 1986-87	
Title	
US-060	
Dwg. No.	RS060-1
Projection:	-
Drawn By:	ATSV
Sheet size:	-
Issues:	4
Scale:	Internal
Date Drawn:	14 Jan 88
Checked:	100%



FIGURE A61: Crash 59. Final position of the station wagon.



FIGURE A62: Crash 60. Final position of Holden Camira showing extensive damage to the right side due to impact with the semi-trailer.

GENERAL CHARACTERISTICS:

CRASH TYPE: Single vehicle rollover - (Non-Fatal)
VEHICLES: 1 car
DAY: Friday TIME: 0715 hours
WEATHER: Fine LIGHTING CONDITIONS: Daylight, overcast
ROAD SURFACE: Sealed, dry
OCCUPANTS: 1
SPEED LIMIT: 110 km/h

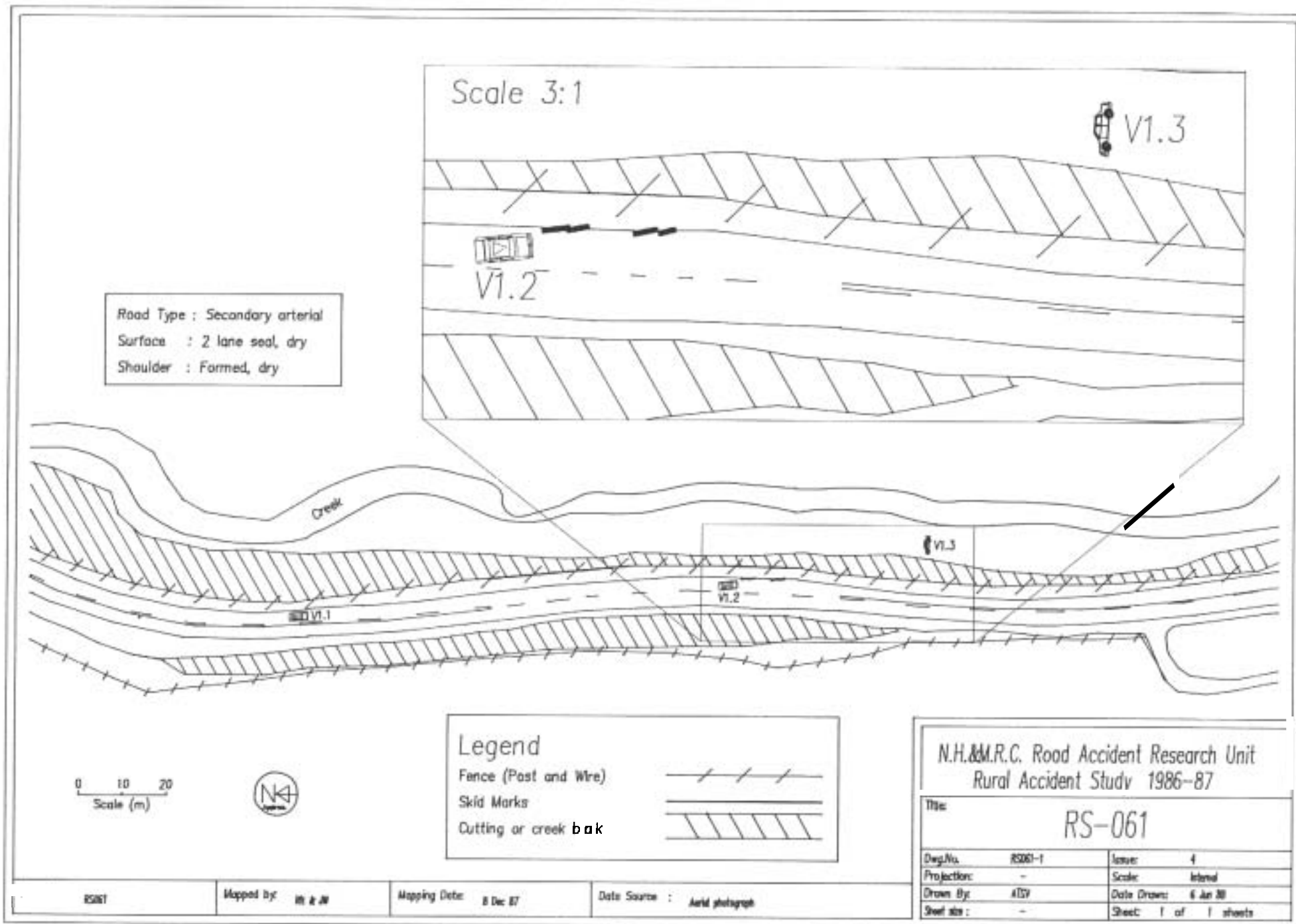
CRASH DESCRIPTION:

The driver of the case vehicle, a young female with a probationary driver's licence who was on her way to school, has no recollection of the crash events. The evidence suggests that the car went straight ahead at a slight right bend, leaving the two-lane road and running through a wire fence and down the side of an embankment. The car landed onto its left side then rolled on to its right side, where it came to rest. The driver thinks she may have been distracted by her attempts to operate a tape recorder on the seat beside her. Prior to leaving the road she stated that the car was travelling at 80 km/h.

UNIT 1: Vehicle Type : 1970 Datsun 1200 sedan

Driver: Female, 17 years, school student, BAC: zero, static 3 point seat belt worn

Injuries: Brief loss of consciousness; bruising to both eyes; laceration left forehead from striking steering wheel rim; bruising neck, chest, left hip from seat belt; lacerations both knees and right hand. Hospitalised for 2 days. MAIS: 2.



CASE: RS 62

GENERAL CHARACTERISTICS:

CRASH TYPE: Single vehicle rollover - (Non-Fatal)
VEHICLES: 1 forward control van towing a laden trailer
DAY: Wednesday TIME: 1045 hours
WEATHER: Fine LIGHTING CONDITIONS: Daylight , sunny
ROAD SURFACE: Sealed, dry
OCCUPANTS: 1
SPEED LIMIT: 110 km/h

CRASH DESCRIPTION:

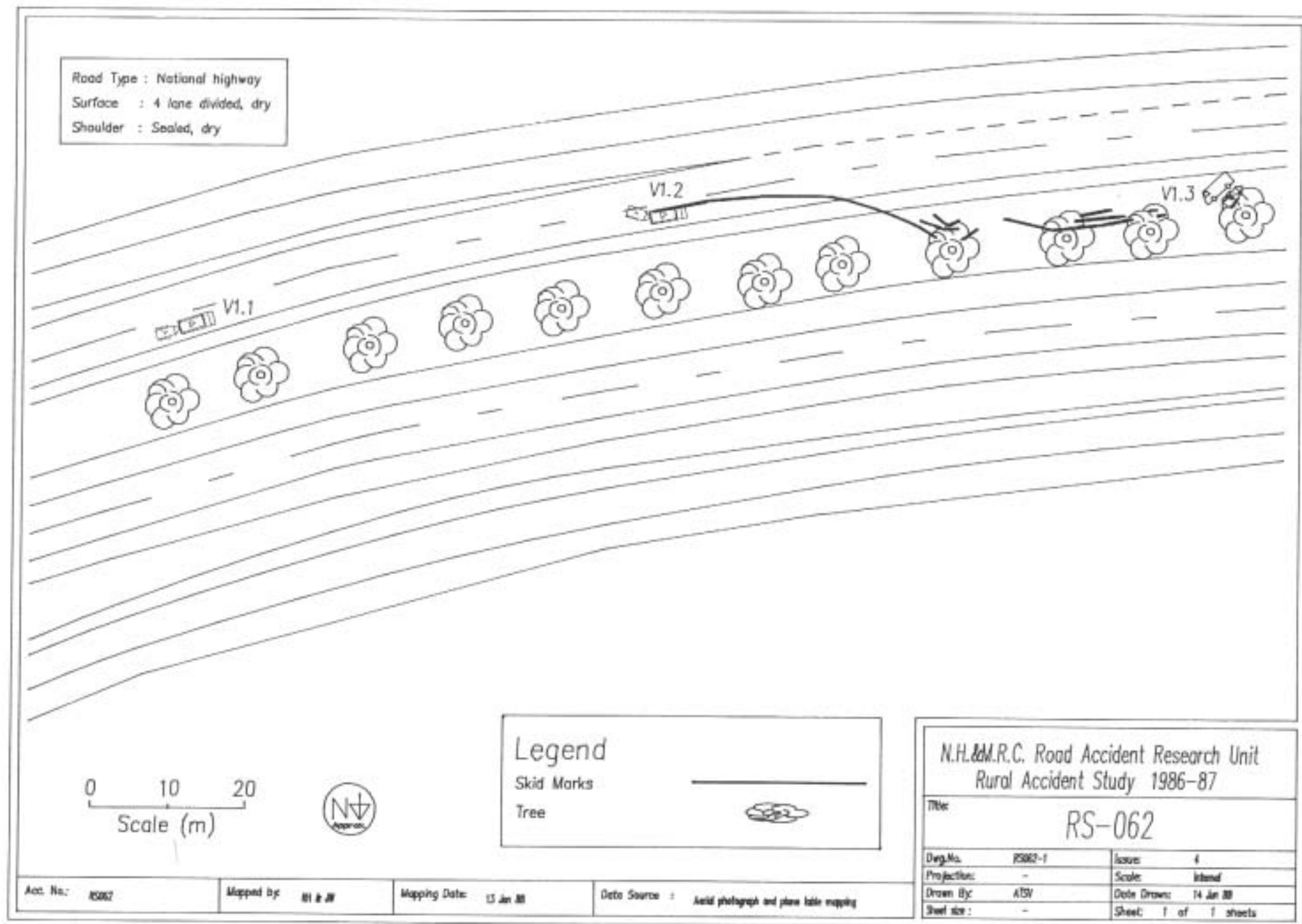
An unladen forward control van towing a laden trailer, was travelling west, downhill in the left lane of a four lane divided highway at a speed the driver said was approximately 95 km/h. The driver was on his way to Adelaide on a business trip and was running slightly behind schedule. The wind gust from a semi-trailer passing in the right lane started the van swaying from side to side. This motion was transferred to the trailer which in turn increased the sideways oscillation of the van. The driver accelerated, believing that doing so would correct the vehicle's motion. In front was another vehicle so the van driver moved into the right lane. However, trailer and van continued swaying from side to side and went increasingly out of control, striking the right curb and running up onto the grassed median where the van and trailer yawed anti-clockwise and rolled. The van came to rest on the median on its right side facing east with the trailer positioned against the underside of the van. The weight of the laden trailer exceeded that of the van.

UNIT 1: Vehicle Type: 1983 Toyota Hiace forward control van with laden four wheel trailer. Van weight = 1.3 tonnes. Trailer weight = 1.75 tonnes

Driver: Male, 36 years, nursery man. BAC: zero , inertia reel 3 point seat belt available but not worn

Injuries: Superficial bruising. Treated at doctors surgery. MAIS: 0

*
self-reported BAC



GENERAL CHARACTERISTICS:

CRASH TYPE: Collision with embankment - (Non-Fatal)
 VEHICLES: 1 car
 DAY: Sunday TIME: 2345 hours
 WEATHER: Fine LIGHTING CONDITIONS: Night, road not lit
 ROAD SURFACE: sealed, dry
 OCCUPANTS: 3
 SPEED LIMIT: 80 km/h

CRASH DESCRIPTION:

Unit 1 was travelling uphill at night at between 70-80 km/h in the left lane of a four lane arterial road winding through undulating terrain. The driver was on holiday from interstate visiting his estranged family. He had decided to take his children for a drive to look at the lights of Adelaide. Unit 1 failed to negotiate a sharp right hand bend, travelling off the bitumen onto the gravel shoulder on the left in a clockwise yaw and struck a rock embankment with the left front corner and side. The driver stated that he had not driven on the road before. He had a BAC of 0.112 and had also been smoking marijuana shortly before setting out on the journey. He had owned the car for only four days and did not consider himself familiar with its handling characteristics.

UNIT 1: Vehicle Type : 1970 VG Chrysler Valiant sedan

Driver: Male, 36 years, labourer, BAC: 0.112, 3 point static seat belt worn

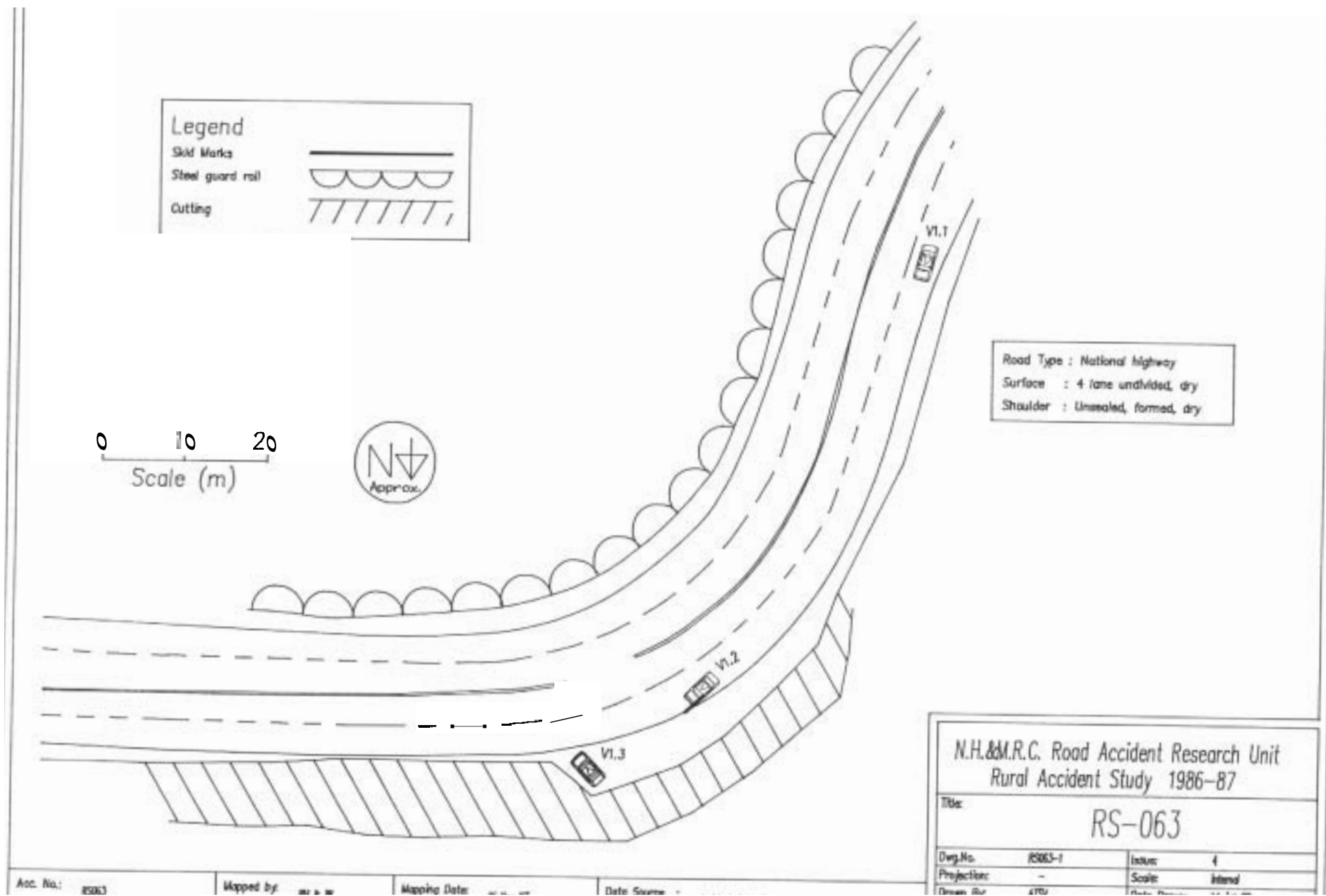
Injuries: Laceration right forehead; bruise left eye: bruise right ribs: laceration left elbow. Hospitalised for 6 days. MAIS: 1

Front Seat Passenger: Female, 17 years, BAC: zero, 3 point static seat belt worn

Injuries: Concussion; abrasions to right side of face; fracture of right wrist: abrasion left knee. Hospitalised 3 days. MAIS: 1

Left Rear Seat Passenger: Female, 15 years, BAC: zero, no seat belt fitted

Injuries: superficial soft tissue injuries. Transported to hospital but not admitted. MAIS: 1



CASE: RS 64

GENERAL CHARACTERISTICS:

CRASH TYPE: Head-on collision - (Non-Fatal)
VEHICLES: 2 cars
DAY: Monday TIME: 1515 hours
WEATHER: Drizzle LIGHTING CONDITIONS: Daylight, overcast
ROAD SURFACE: Sealed, wet
OCCUPANTS: unit 1, 1; Unit 2, 1
SPEED LIMIT: 80 km/h

CRASH DESCRIPTION:

Unit 1 was travelling at a speed the driver said was about 80 km/h around a moderately tight left hand bend, with a slight uphill grade, when it lost adhesion and skidded across the raised median and struck Unit 2 which was travelling in the opposite direction, in the left lane of the four-lane road. The centre of the front of Unit 1 struck the right front corner of Unit 2. The driver of Unit 2 was trapped in the car by her right leg, and had to be removed through the passenger side door. The driver of Unit 1 had been smoking marijuana within a few hours of the crash and had possibly taken other drugs.

UNIT 1: Vehicle Type: 1973 **Toyota** Celica sedan

Driver: Male, 24 years, unemployed, BAC: zero, static 3 point seat belt worn

Injuries: Concussion; lacerated upper lip; bruising front of chest, both knees. Transported to hospital but not admitted. MAIS: 1

UNIT 2: Vehicle Type: 1968 Morris Mini Deluxe sedan

Driver: Female, 18 years, student, BAC: zero, 3 point static seat belt probably worn

Injuries: Concussion; laceration under chin; bruising to right shoulder and left hip probably from seat belt; bruising to left forearm; laceration to right forearm; fractured right femur and left upper tibia. MAIS: 3

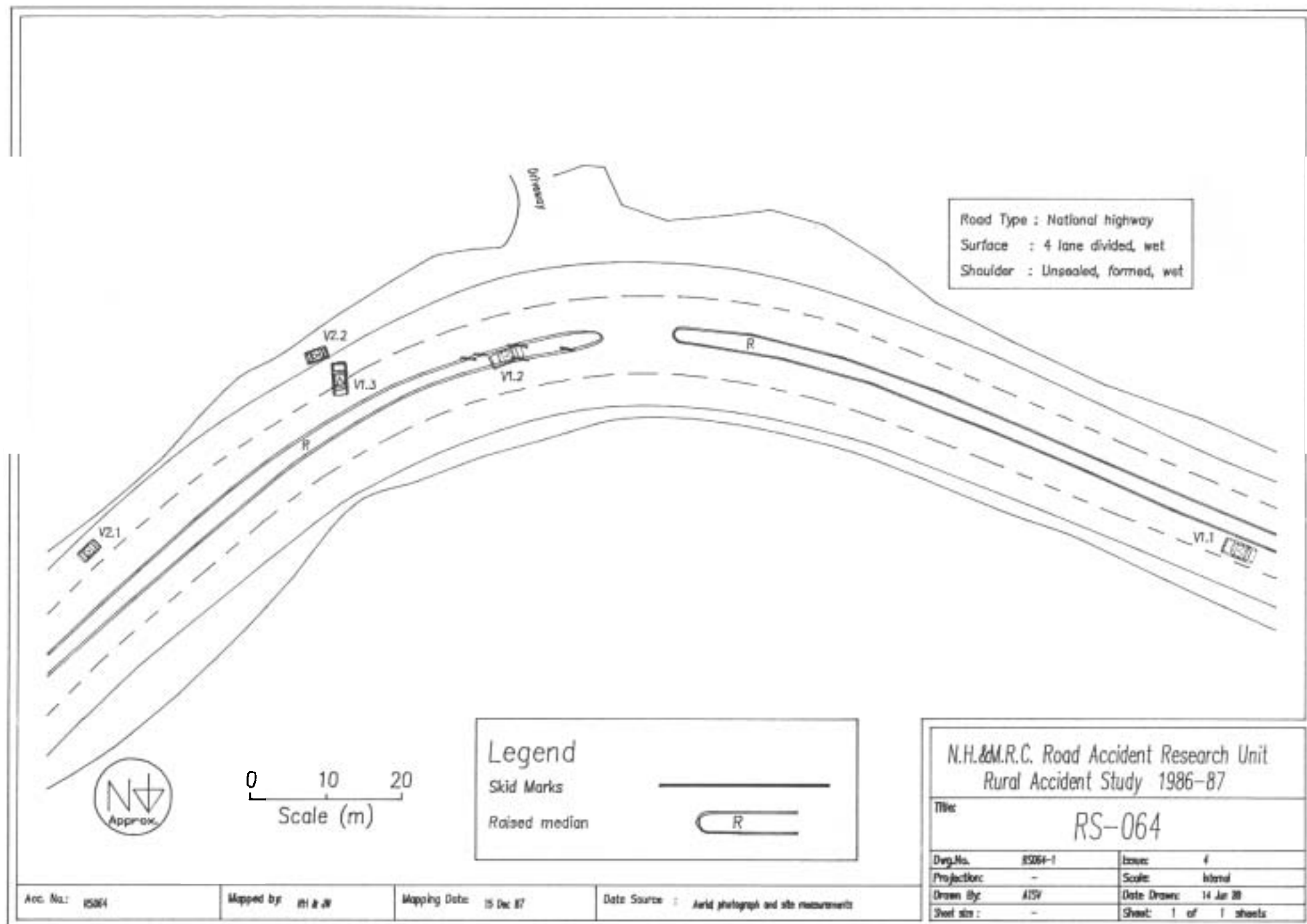




FIGURE A63: Crash 63. Final position of Valiant sedan against embankment.



FIGURE A64: Crash 64. Final position of Toyota Celica sedan and Morris Mini sedan.

CASE: RS 65

GENERAL CHARACTERISTICS:

CRASH TYPE: side impact intersection collision - (Fatal)
VEHICLES: 2 cars
DAY: Friday TIME: 1725 hours
WEATHER: Fine LIGHTING CONDITIONS: Daylight, overcast
ROAD SURFACE: Sealed, dry
OCCUPANTS: unit 1, 3; Unit 2, 5
SPEED LIMIT: 110 km/h

CRASH DESCRIPTION:

Unit 1, travelling north, passed a Give Way sign and entered an intersection where it was struck on the right front corner by the left front corner of Unit 2 which was travelling west. Following the initial impact, there was contact between the right side of Unit 1 and the left side of Unit 2. Both vehicles came to rest in the north west corner of the intersection, Unit 2 upside down, facing west, Unit 1 facing east. There was considerable intrusion into the front seat space of Unit 2. No information about the events leading up to the crash could be obtained from the two drivers. The driver of Unit 1 died at the scene, and the driver of Unit 2 had no recollection of events, before or during the impact. witnesses suggest that Unit 2 was pursuing another car, after an argument, at speeds of up to 130 km/h. Other witnesses reported that Unit 1 was travelling at at least 80 km/h, and did not stop at the Give Way sign. The driver of Unit 1 did not have a driving licence (nor had she ever had one), and the driver of Unit 2 had a probationary licence.

UNIT 1: Vehicle Type : 1973 Ford Cortina TC sedan

Driver: Female, 48 years, hane duties, BAC: zero, inertia reel 3 point seat belt worn

Injuries: Lacerations both sides of head; subdural haemorrhage; bruising front of chest, right lung; fracture right radius and ulna; fracture left tibia and fibula. Dead at scene.

MAIS: 5

Front Seat Passenger: Male, 21 years, BAC: zero, inertia reel 3 point seat belt available but not worn

Injuries: Subdural haemorrhage; laceration right side of neck; bruising of front of chest; right and left hamthorax; rupture of the aorta; laceration of the right side of the liver. Dead at scene. MAIS: 6

Left Rear Seat Passenger: Female, 16 years, BAC: zero, static 3 point seat belt worn

Injuries: Bruising of chest: laceration of left elbow; bruise right wrist, and left leg. Hospitalised for 3 days. MAIS: 1

UNIT 2:

Vehicle Type : 1975 Datsun 1808 sedan

Driver: Female, 17 years, machinist, BAC: zero, inertia reel 3 point seat belt worn

Injuries: Concussion; laceration to face; fracture of nose: fracture of left wrist; fracture of right patella; laceration of left knee. Hospitalized for 5 days. MAIS: 2

Front Seat Passenger: Male, 15 years, unemployed, inertia reel 3 point seat belt worn

Injuries: Lacerated chin and right side of neck: bruising of chest: bilateral haemothorax: laceration of heart, and aorta. Fracture of mandible, and fractures of right ribs 4-9. Dead at scene. MAIS: 6

Left Rear Seat Passenger: Male, 14 years, student, BAC: zero, 3 point static seat belt available, not known if worn

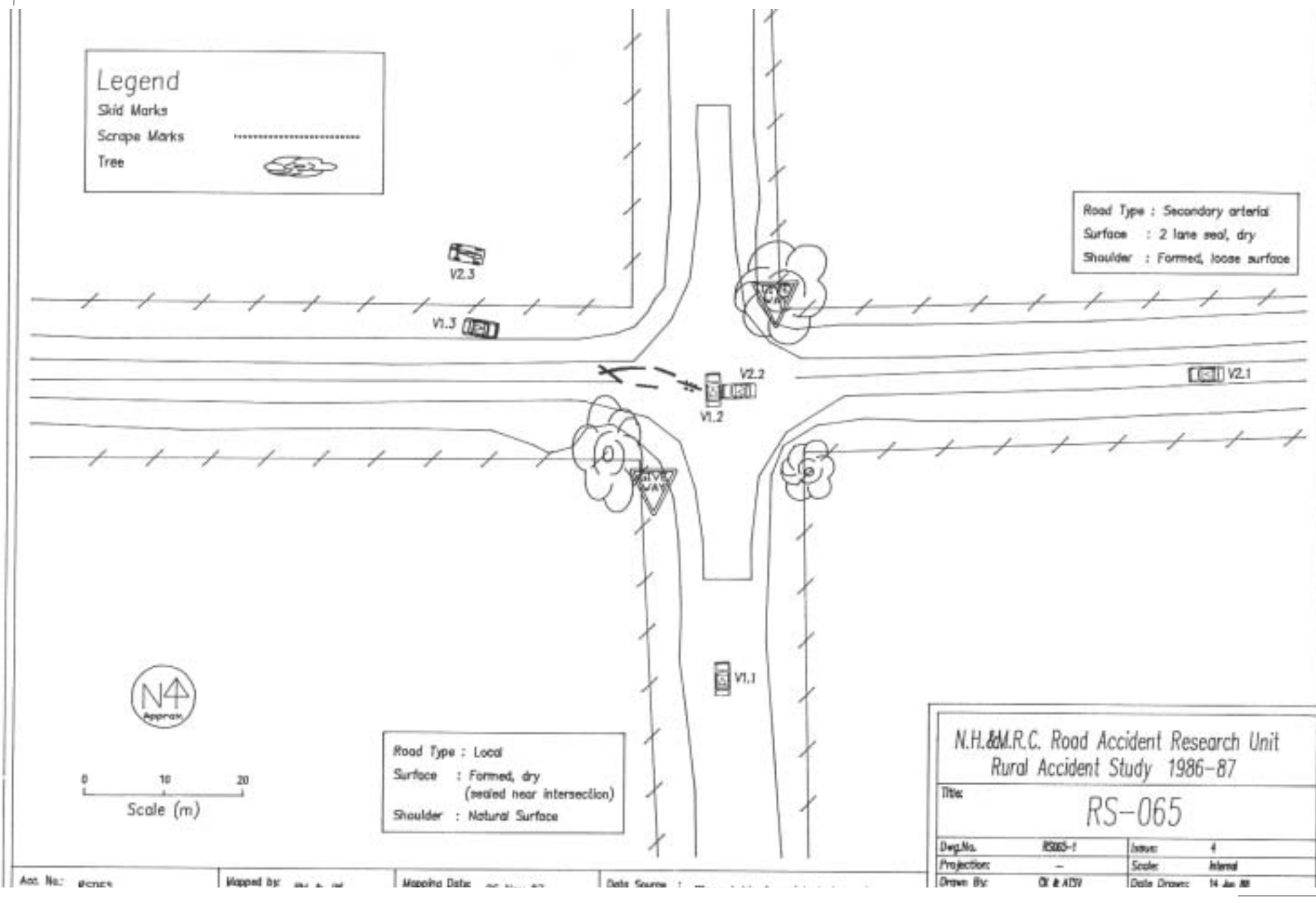
Injuries: Laceration left side of head. Subdural haemorrhage; fracture of right femur: lungs oedematous. Death due to pulmonary oedema, secondary to brain injury. Died in hospital < 24 hours. MAIS: 5

Centre Rear Seat Passenger: Male, 17 years, unemployed, BAC: zero, lap seat belt available not known if worn

Injuries: Laceration to cheek: fracture of left side of mandible: fracture of left clavicle; minor lacerations to legs. Hospitalised 15 days. MAIS: 2

Right Rear Seat Passenger: Male, 15 years, student, BAC: zero, 3 point static seat belt available, not known if worn

Injuries: Concussion; two lacerations to left side of scalp; fracture of right tibia and fibula. Five weeks later, died of rupture of congenital aneurysm of heart. MAIS: 2



Acc. No.: 263

Mapped by: CK & ATSV

Map Date: 14 Jan 88

Data Source: N.H. & M.R.C.

GENERAL CHARACTERISTICS:

CRASH TYPE: Head-on collision - (Non-Fatal)

VEHICLES: 2, motorcycle and car

DAY: Wednesday TIME: 1730 hours

WEATHER: Fine LIGHTING CONDITIONS: Daylight, sunny with shadows on road

ROAD SURFACE: Sealed, dry

OCCUPANTS: unit 1, 1; unit 2, 1

SPEED LIMIT: 110 km/h

CRASH DESCRIPTION:

A motorcycle, Unit 1, was travelling on a straight, downhill section of a two-lane road approaching a left hand bend at 80 km/h when the rider decided to move into the right lane to overtake a slower moving vehicle. As Unit 1 moved into the right lane a car, Unit 2, appeared around the bend. The rider braked and began to move back into the left lane behind the car he was attempting to overtake. It's driver, however, seeing Unit 2 approach, had braked to allow Unit 1 to pass on the right. The motorcyclist then swerved back to the right lane intending to travel down the far side of Unit 2 but the motorcycle skidded and slid down onto the bitumen. The motorcycle collided low down with the front of Unit 2 which had braked and was almost stationary at impact. The rider came to rest on the centre line between Unit 2 and the vehicle he had tried to pass. The rider stated that on seeing Unit 2 he would have ridden down the centre line but it veered to the centre of the road. The rider had owned the second-hand motorcycle, a high performance machine, for only a few hours. This was his first ride on it. He had left home intending to ride along a winding road to test its handling and performance.

UNIT 1: Vehicle Type : 1985 Kawasaki KR 250 motorcycle

Driver: Male, 21 years, technician, BAC: zero, full face helmet worn

Injuries: Laceration to right knee: abrasions to body. Transported to hospital but not admitted.
MAIS: 1

UNIT 2: Vehicle Type : 1982 Ford Laser KA sedan

Driver: Female, 33 years, hospital scientist, BAC: zero, inertia reel 3 point seat belt worn

Injuries: None. MAIS: 0

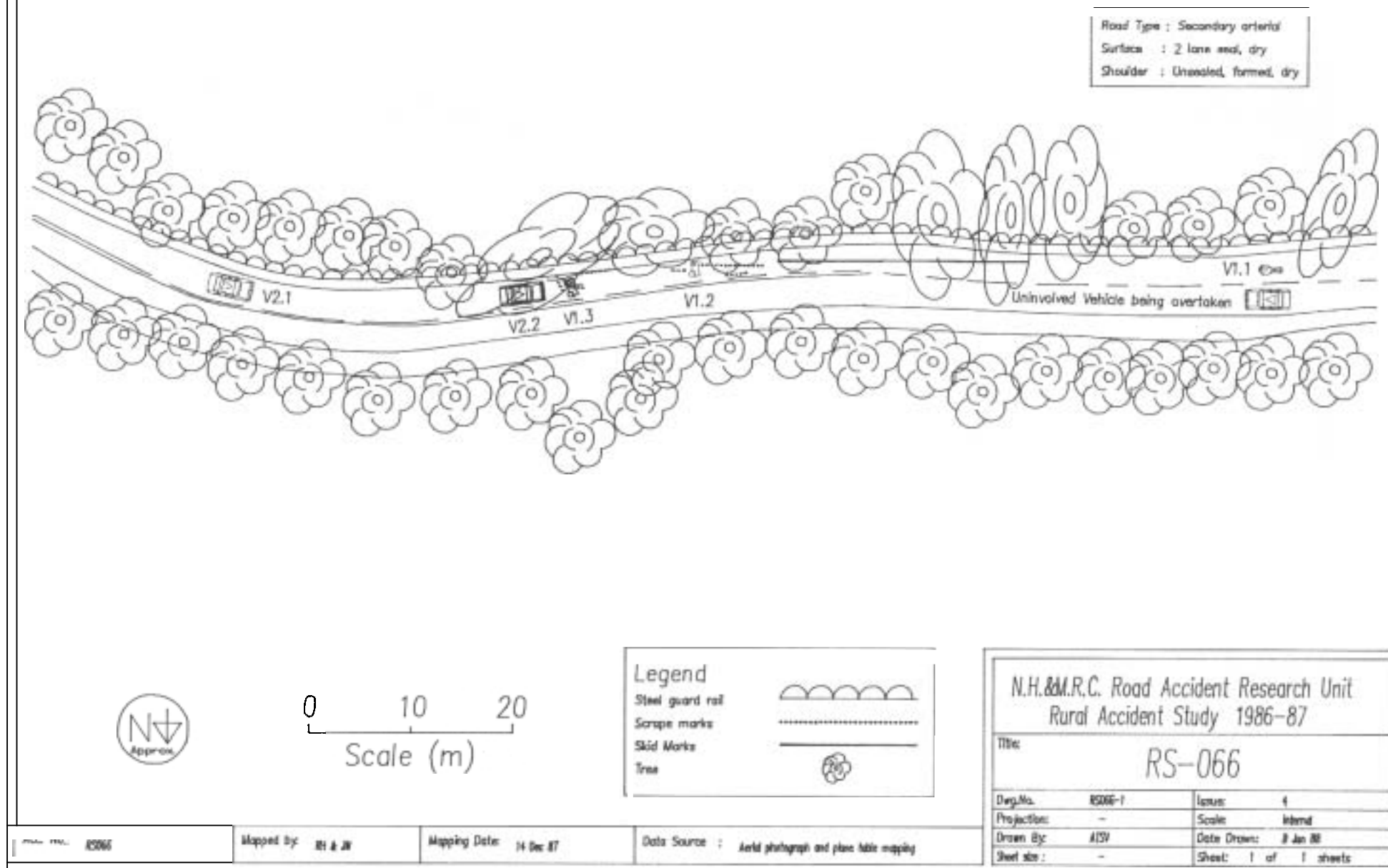




FIGURE A65: Crash 65. Final position of Ford Cortina showing damage to front and right side. The Datsun 180B is visible in the background surrounded by Emergency Service personnel.



FIGURE A66: Crash 67. Final position of semi-trailer inside the rear of a house. Note Holden Commodore trapped beneath the prime mover.

CASE: RS 67

GENERAL CHARACTERISTICS:

CRASH TYPE: Head-on collision - (Fatal)

VEHICLES : 4, semi-trailer, 2 cars, forward control van

DAY: Thursday TIME: 1630 hours

WEATHER: Intermittent rain LIGHTING CONDITIONS: Overcast

ROAD SURFACE: Sealed, wet

OCCUPANTS: unit 1, 1; Unit 2, 1; Unit 3, 2; Unit 4, 1

SPEED LIMIT: 80 km/h

CRASH DESCRIPTION:

Unit 4, a forward control passenger vehicle, was travelling down hill at 75 km/h in the right lane of a four-lane highway divided by a raised median, and approaching a sharp left hand bend when it passed a semi-trailer (Unit 1) travelling in the left lane. The driver of Unit 4 slowed for the corner, and noticed that Unit 1 did not slow. It continued straight ahead, veering towards her. She accelerated to try to get out of its path and felt the right front corner of the prime mover strike the left rear corner of the van. The van spun through 180° anti-clockwise, crossing the median. The driver saw the truck continue straight across the median, where it struck Unit 3 which was travelling uphill in the right lane. The impact with Unit 3 was on the right side 'A' pillar and tore off the right side of the car, roof, and rear seat, leaving the occupants seated in the front half of the car, which came to rest on the median. Unit 1 then struck the right side of Unit 2 which became jammed upside down between the front and rear wheels of the prime mover as it slid for 100 metres across an unpaved parking area and then down a slope, coming to rest inside the rear of a house, which it demolished. The driver of the semi-trailer had driven from Melbourne during the previous night. He reported that when his vehicle struck the median he was thrown from the driver's seat to the left of the cab.

UNIT 1: Vehicle Type: Semi-trailer. Gross weight 22 tonnes

Driver: Male, 54 years, transport driver, BAC: zero, no seat belt worn

Injuries: Laceration to top of head, bruising to right leg and ankle. MAIS: 1

UNIT 2: Vehicle Type: 1983 VH Holden Commodore sedan

Driver: Female, 47 years, nurse, BAC: zero, inertia reel 3 point seat belt worn

Injuries: Gross fracturing of the right side of head and face: multiple fractures of the base of skull: fracture of the right humerus; contusions of lung and mediastinum: bruising of front of chest: lacerations of right thigh and both knees. Dead at scene. MAIS: 6

UNIT 3: Vehicle Type : 1984 KB Ford Laser sedan

Driver: Female, 62 years, home duties, BAC: zero, inertia reel 3 point seat belt worn

Injuries: Neck strain: abrasion right side of neck: bruise left side of chest and shoulder and across abdomen; bruising to both eyes. Hospitalised 13 days. MAIS: 2

Front Seat Passenger: Male, 70 years, industrial chemist, BAC: zero, inertia reel 3 point seat belt worn

Injuries: Bruise to right side of head: abrasion to right side of chest: back strain. Hospitalised for 4 days. MAIS: 1

UNIT 4: Vehicle Type : 1983 Toyota Tarago van

Driver: Female, 33 years clerk, BAC: zero, inertia reel 3 point seat belt worn

Injuries: Neck strain; bruise over right shoulder and chest. Remained at scene. MAIS: 1

Legend

Skid Marks



Steel guard rail



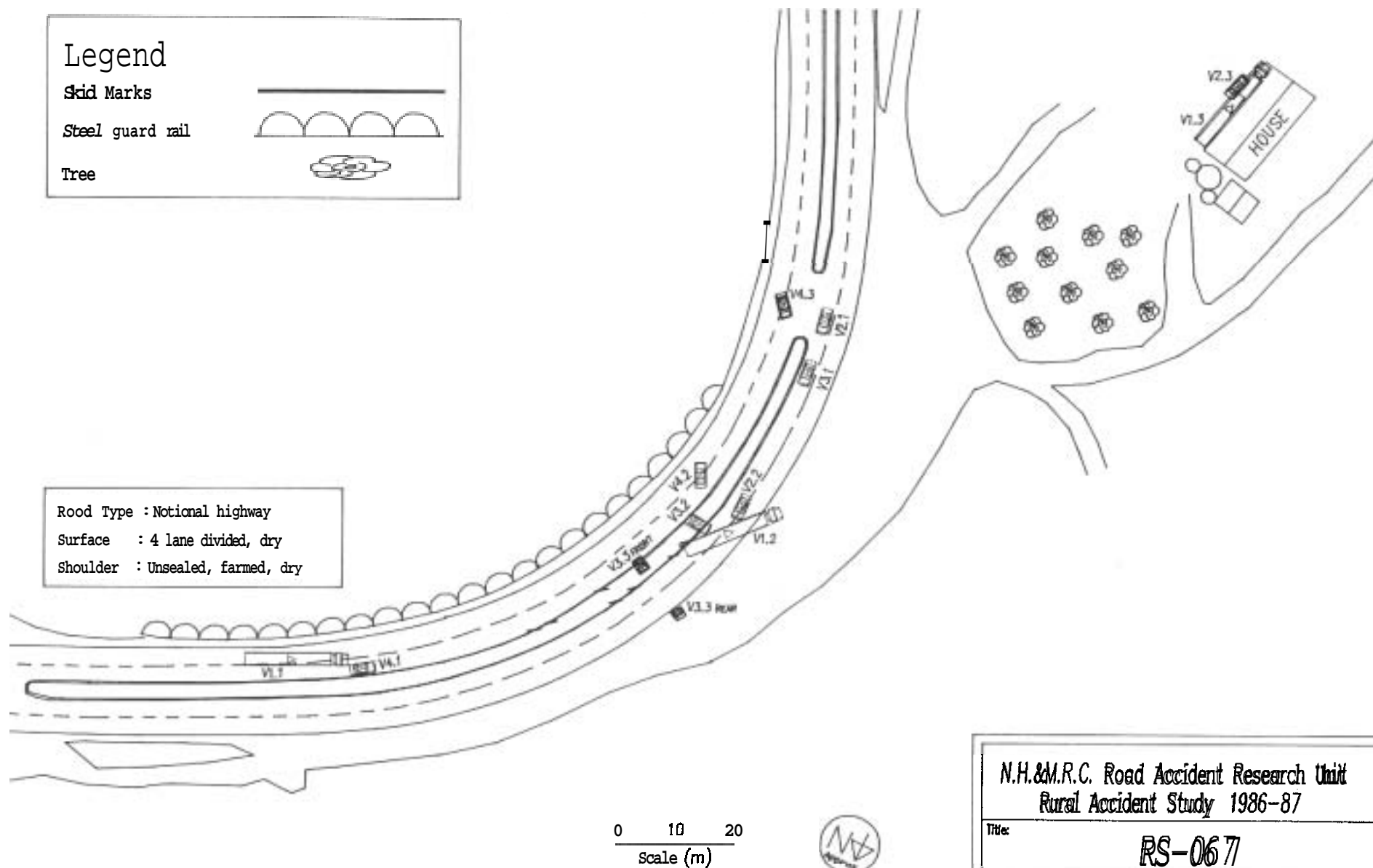
Tree



Road Type : Notional highway

Surface : 4 lane divided, dry

Shoulder : Unsealed, farmed, dry



0 10 20
Scale (m)



N.H.&M.R.C. Road Accident Research Unit
Rural Accident Study 1986-87

Title:

RS-067

Org.No.	RS067-1	Issue:	1
Projection:	-	Scale:	Internal
Drawn By:	1987	Drawn By:	1987

GENERAL CHARACTERISTICS:

CRASH TYPE: Motorcycle slidedown - (Non-Fatal)
 VEHICLES: 1 motorcycle
 DAY: Friday TIME: 1105 hours
 WEATHER: Fine LIGHTING CONDITIONS: Daylight, sunny
 ROAD SURFACE: Sealed, dry
 OCCUPANTS: 2
 SPEED LIMIT: 110 km/h

CRASH DESCRIPTION:

Unit 1, a motorcycle, was travelling west on a two-lane road at a speed the rider said was approximately 110 km/h. The rider and pillion passenger were both unemployed and had decided to go on a recreational ride in the country. At the end of a long straight road they came over a crest and entered a deceptively sharp right hand curve. The rider braked and the motorcycle ran off the bitumen onto the gravel shoulder on the left where it slid down onto its right side. The rider reported that he was unfamiliar with the road, and as he approached the bend it appeared to curve relatively gently to the right. There were numerous skid marks on the bend indicating where other vehicles had run off the road.

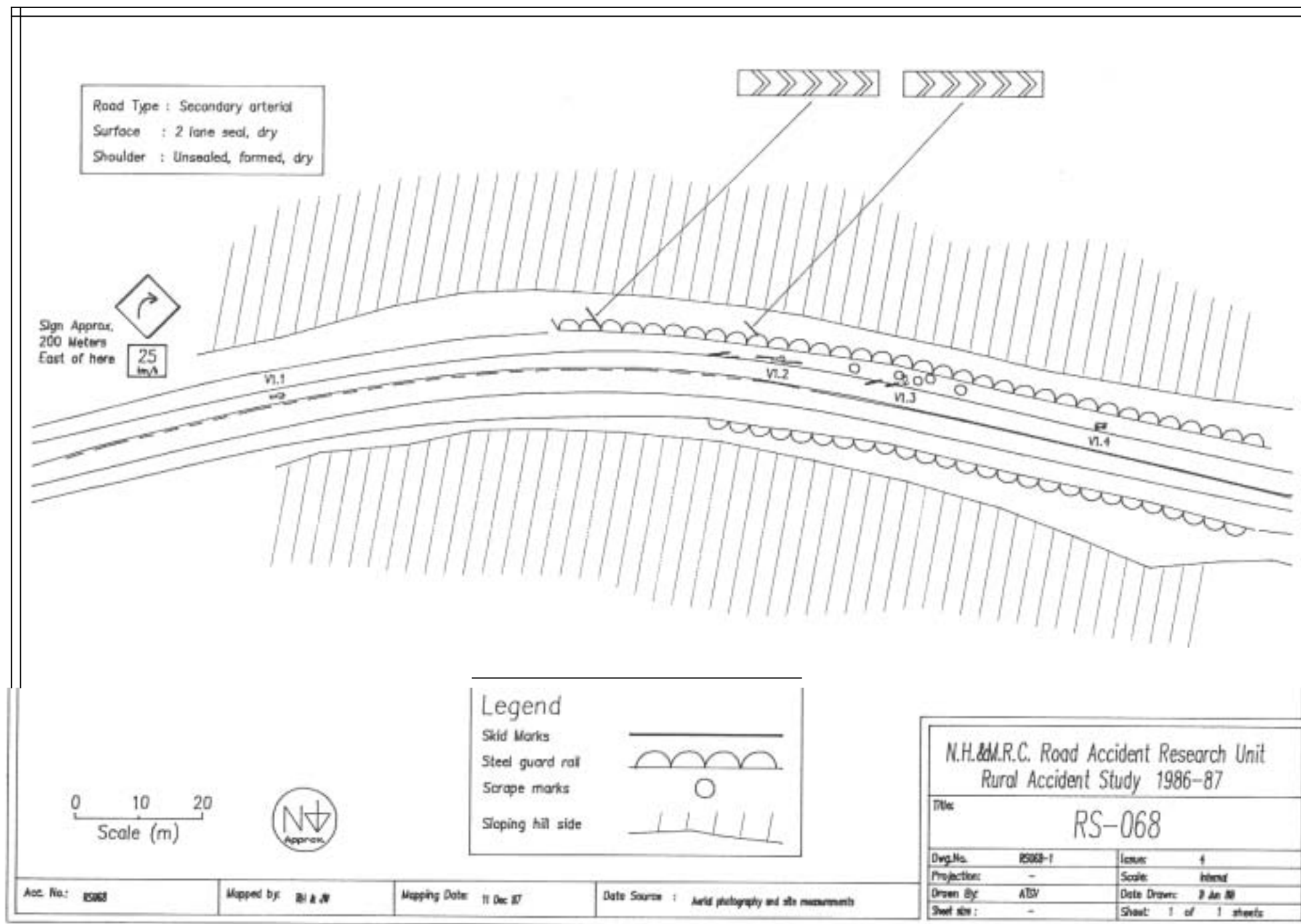
UNIT 1: Vehicle Type : Honda CBX 150 motorcycle.

Rider: Male, 20 years, unemployed, full face helmet worn, BAC: 0.040

Injuries: Fractured left clavicle; grazes and bruising down left side and to knees, elbows and back. Hospitalised for 2 days. MAIS: 1

Pillion Passenger: Male, 20 years, unemployed, full face helmet worn, BAC: 0.079

Injuries: Bruises and abrasions on back and side. Transported to hospital but not admitted. MAIS:



GENERAL CHARACTERISTICS:

CRASH TYPE: Side impact intersection collision - (Non-Fatal)

VEHICLES: 2 cars

DAY: Sunday TIME: 1815 hours

WEATHER: Fine LIGHTING CONDITIONS: Night, road no lit

ROAD SURFACE: Sealed, dry

OCCUPANTS: unit 1, 2; Unit 2, 2

SPEED LIMIT: 110 km/h

CRASH DESCRIPTION:

The two male occupants of Unit 1 were returning home after a fishing trip. They were approaching an intersection in a northerly direction at a stated speed of 80 km/h. Ahead of them were two vehicles waiting to turn right at the intersection. The two-lane road was wide enough to permit Unit 1 to pass to the left of these vehicles and through the intersection. As Unit 1 was about to enter the intersection, Unit 2, travelling south, turned right across the path of Unit 1. The driver of Unit 1 braked and the car skidded before its left front corner struck the left side of Unit 2, the impact being centred on the 'A' pillar. After impact Unit 1 yawed anti-clockwise coming to rest in the intersection facing east. Unit 2 yawed clockwise and travelled off the bitumen onto the eastern shoulder coming to rest with its front wheels in a culvert. The driver of Unit 2 stated that he had stopped at the intersection and was waiting to turn right. He saw the stationary vehicles opposite him and commenced his turn and then discovered Unit 1 proceeding through the intersection towards him.

UNIT 1: Vehicle Type : 1971 HG Holden Kingswood sedan

Driver: Male, 25 years, fitter and turner, BAC: zero, 3 point static seat belt worn

Injuries: Neck strain; bruised right shoulder.
Remained at scene. MAIS: 1

Front Seat Passenger: Male, 24 years, BAC: Zero, 3 point static seat belt worn

Injuries: Neck strain; bruising to abdomen from seat belt. Remained at scene. MAIS: 1

UNIT 2

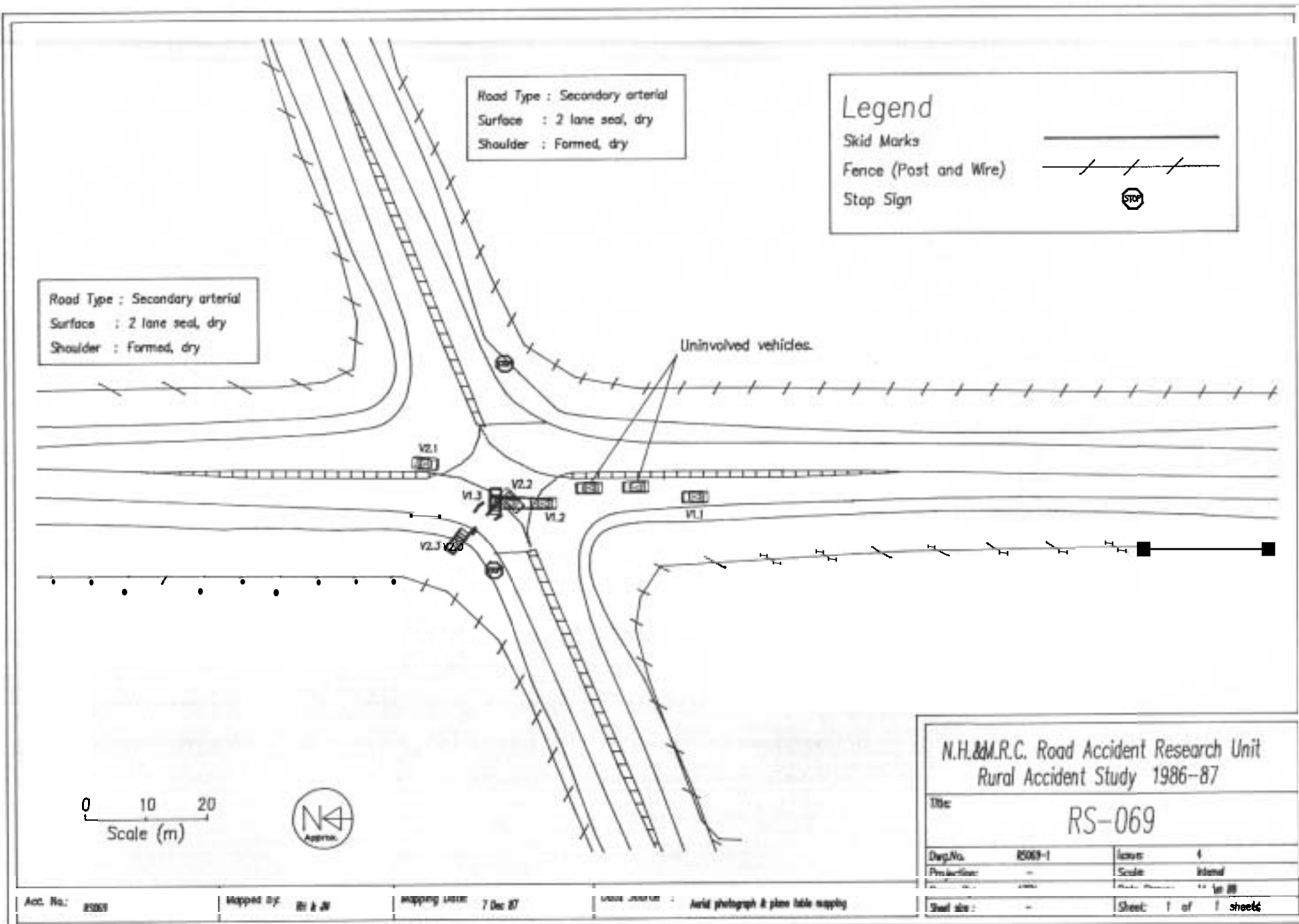
Vehicle Type: 1978 Holden Torana Sunbird sedan

Driver: Male, 28 years, salesman, **BAC:** zero, inertia reel
3 pint seat belt worn

Injuries: Neck strain, bruising right shoulder,
chest from seat belt. Transported to hospital but
not admitted. **MAIS:** I

Wont Seat Passenger: Female, 26 years, **BAC:** zero, inertia
reel 3 point seat belt not worn

Injuries: Lacerations to Eace; neck strain:
bruised ribs; lacerations to both knees.
Transported to hospital but not admitted. **MAIS:** 1



CASE: RS 70

GENERAL CHARACTERISTICS:

CRASH TYPE: Collision with tree - (non-fatal)
VEHICLES: 1 car
DAY: Thursday TIME: 0045 hours
WEATHER: Fine LIGHTING CONDITIONS: Night, road not lit
ROAD SURFACE: Unsealed, loose gravel, dry
OCCUPANTS: 1
SPEED LIMIT: 110 km/h

CRASH DESCRIPTION:

The driver stated that she was travelling along a winding two-lane road at 70 km/h when, rounding a left hand bend over a crest, the right front wheel of the car struck a rock in the road surface, wrenching the steering wheel from her hands. **She** braked hard, the car yawed clockwise and collided head on with a tree on the right side of the road. The car then continued to rotate through another 180°, caning to rest with its front half on the road surface and the rear on the shoulder. The unrestrained driver came to rest lying across the front seats. She then got out of the car and went for help, The driver was returning home from a hotel where she had gone to "drown her sorrows" after discontinuing a close personal relationship.

UNIT I: Vehicle Type : 1977 Ford Escort sedan

Driver: Female, 19 years, fruit packer, BAC: 0.05, inertia reel 3 point seat belt available but not worn

Injuries: Brief loss of consciousness: lacerations of the face from striking rear vision mirror: bruising to knee from instrument panel; bruising to shins from pedals. Hospitalised for 2 days. **MAIS:**
2

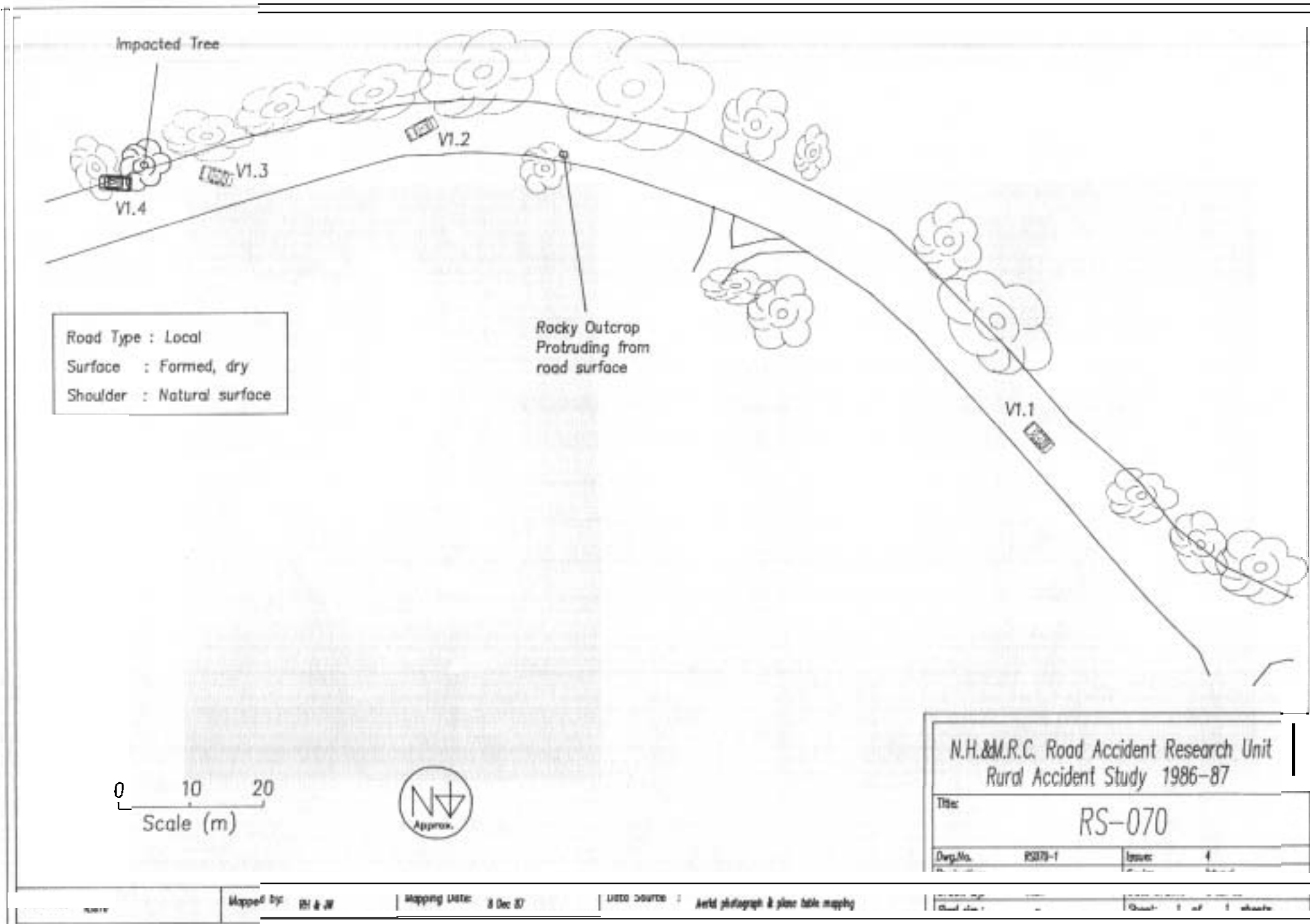




FIGURE A67: Crash 69. Final position of Holden Torana showing impact damage to left side.



FIGURE A68: Crash 70. Final position of Ford Escort showing crash damage to front and right side. Note windscreen broken from contact by the unrestrained driver.

GENERAL CHARACTERISTICS:

CRASH TYPE: Collision with fixed object - (Non-Fatal)

VEHICLES: 1 forward control passenger vehicle towing a laden trailer

DAY: Friday TIME: 1300 hours

WEATHER: Wet, windy LIGHTING CONDITIONS: Daylight, overcast with fog

ROAD SURFACE: Sealed, wet

OCCUPANTS: 7

SPEED LIMIT: 110 km/h

CRASH DESCRIPTION:

The forward control passenger vehicle, towing a two-axle enclosed trailer, was travelling east in the left lane of a four-lane divided freeway. It had just negotiated a right hand curve and was beginning to descend a medium slope entering a left-hand curve. The vehicle's occupants, a group of musicians, were on their way to a concert in the country. The weather was windy, with rain and patches of fog. The driver accelerated from 45 km/h to 75 km/h on the downhill slope when a passenger suggested he slow down as the road was dangerous given the weather conditions. The driver took his foot off the accelerator, which precipitated trailer sway. The driver attempted to slow further by braking gently but the trailer did not respond, continuing to sway from side to side. The van mounted the kerbing to the left and travelled onto a graded grassed verge where it struck a slip-base lamp standard, which broke away, with the right front. The driver braked harder and tried to steer back onto the road. The vehicle yawed clockwise and it slid along the grassy verge in an increasing clockwise yaw until the left side adjacent to the rear wheel hit a rigid pole where it came to rest, 180° from its original path. The towbar on the vehicle failed and the trailer broke free coming to rest behind the vehicle, also having rotated through 180° clockwise. The loaded trailer weighed approximately the same as the loaded towing vehicle. The rear tyres of the vehicle had 2 mm of tread.

UNIT 1: Vehicle Type : 1906 Toyota Tarago with 4 wheel enclosed trailer (both rented)

Driver: Male, 25 years, unemployed, BAC: zero, seat belt not worn

Injuries: Shock and superficial bruising.
Remained at scene. MAIS: 1

Front Seat Passenger: Male, 28 **years**, BAC: zero, inertia
reel 3 point seat belt not worn

Injuries: Shock and superficial bruising.
Remained at scene. MAIS: 1

Left Middle Rear Seat Passenger: Male, 31 years, BAC: zero,
inertia reel 3 point seat belt worn

Injuries: Shock and superficial bruising.
Remained at scene. MAIS: 1

Centre Middle Rear Seat Passenger: Female, 22 years, BAC:
zero, lap belt available but not worn

Injuries: Shock. Remained at scene. MAIS: 0

Right Middle Rear Seat Passenger: Male, 27 years, **BAC:**
zero, inertia reel 3 point seat belt worn

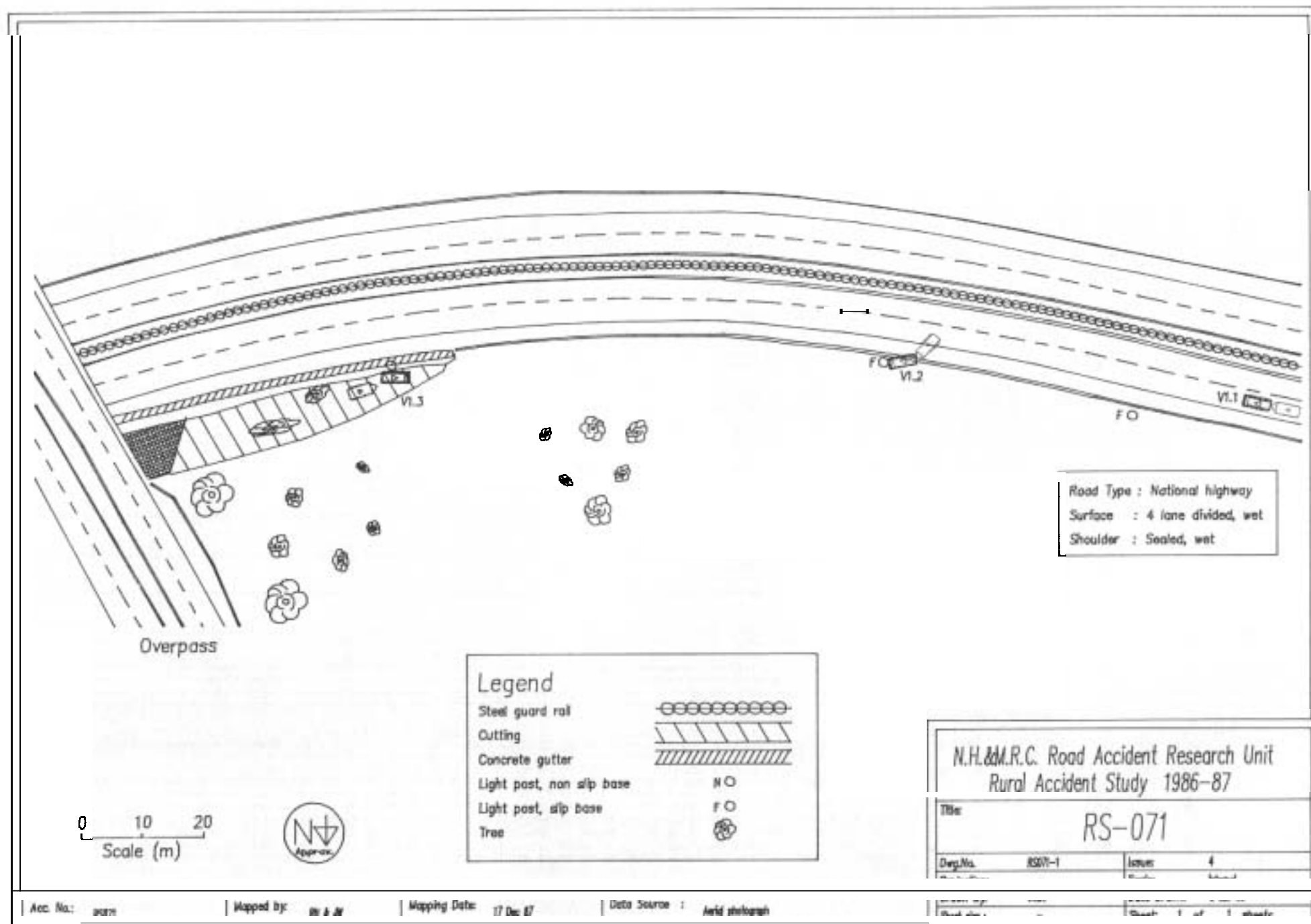
Injuries: Nil stated. Remained at scene. MAIS:
0

Left Rear Seat Passenger: Male, 25 years, **BAC:** zero,
inertia reel 3 point seat belt worn

Injuries: Neck strain: concussion: small
laceration to left side of face. Transported to
hospital but not admitted. MAIS: 1

Right Rear Seat Passenger: Male, 27 years, **BAC:** zero,
inertia reel 3 point seat belt possibly worn

Injuries: Neck strain. Transported to hospital
but not admitted. MAIS: 1



GENERAL CHARACTERISTICS :

CRASH TYPE: Single vehicle rollover - (Non-Fatal)
 VEHICLES: 1 car
 DAY: Monday TIME: 1340 hours
 WEATHER: Fine LIGHTING CONDITIONS: Daylight, sunny
 ROAD SURFACE: Dry, sealed
 OCCUPANTS: 1
 SPEED LIMIT: 110 km/h

CRASH DESCRIPTION:

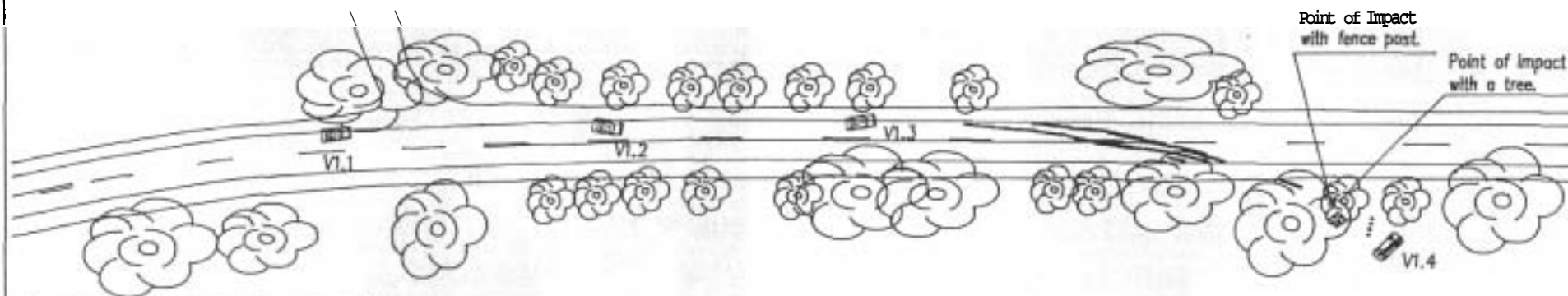
The car was travelling north on an undulating two-lane road at between 110-120 km/h when the driver overtook a slower vehicle travelling in the same direction and, to avoid an oncoming car, quickly had to return to the left lane just as he entered a right hand bend. Both left wheels went off the bitumen on to the gravel shoulder. The driver turned to the right to regain the bitumen and the car yawed clockwise across the road. The driver then turned to the left and the car yawed anti-clockwise off the bitumen onto the gravel shoulder on the left. The driver turned to the right once more and the car yawed clockwise and travelled across the road to the right. It then became airborne, struck a tree with the rear of the left side, and came to rest on its roof in a paddock at the foot of a steep embankment, facing away from the road. The driver was conscious, but trapped upside down in his seat by the intrusion of the roof. He sustained a fracture dislocation of the sixth cervical vertebrae with damage to the spinal cord. He lost sensation below his shoulders and could not move his arms or legs. An inlet manifold with carburettor attached (weight about 5 kgs) which had been stowed behind the driver's seat on the floor, was found wedged between his back and the seat back. This may have been the cause of the laceration to the left side of his head. The neck injury may have occurred when his head hit the intruding roof as the vehicle landed upside down. The front left tyre pressure was measured at the scene as 69 kpa (rather than a recommended pressure of 210 to 230 kpa), and two days later, as 55 kpa. The slowly deflating left front tyre may have contributed to the driver's difficulties in controlling the car.

UNIT 1: Vehicle Type: 1982 Ford QA Meteor sedan

Driver: Male, 17 years, parts salesman, BAC: zero, inertia reel 3 point seat belt worn

1

Injuries: Laceration left scalp above left eye to left ear. Fracture dislocation of 6th and 7th cervical vertebrae, with cord damage at that level. Incomplete quadriplegia. **MAIS:** 5



Road Type : Secondary arterial
 Surface : 2 lane sealed, dry
 Shoulder : Unsealed, formed, dry

0 10 20
 Scale (m)

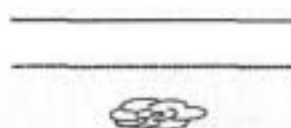


Legend

Skid Marks

Scrape Marks

Tree



N.H.&M.R.C. Road Accident Research Unit
 Rural Accident Study 1986-87

Title

RS-072

Dep. No.	RS072-	Issue:	4
Projection:	-	Scale:	Internal
Drawn By	ATSV	Date Drawn:	31 Jun 88
Sheet Size	34	Sheet No.	1 of 1



FIGURE A69: Crash 71. Final position of the van which came to rest against a non-frangible pole. Note the trailer which has become detached after breaking off the towbar from the van.



FIGURE A70: Crash 72. Final position of the car. Note extensive crushing of the roof into the occupant space.

CASE: RS 13

GENERAL CHARACTERISTICS:

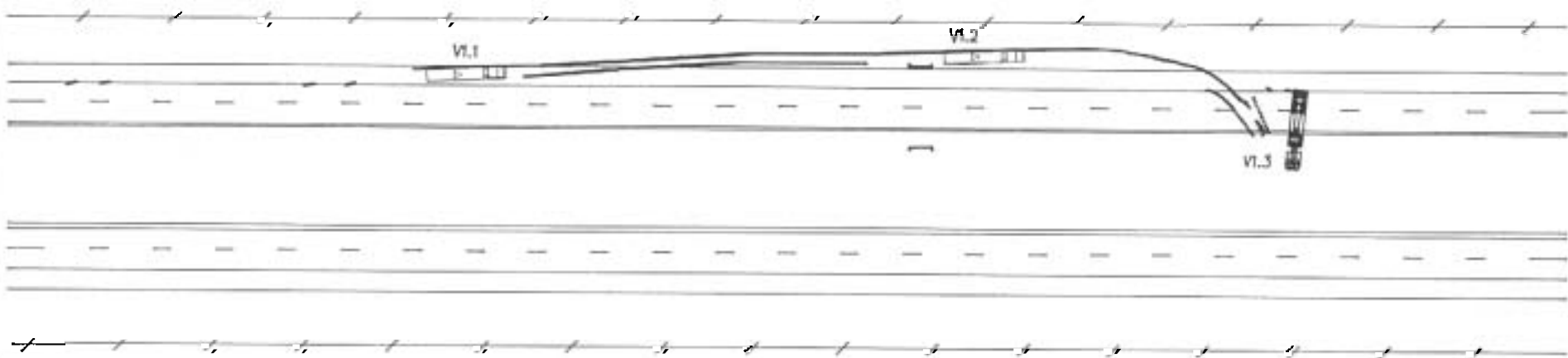
CRASH TYPE: Single vehicle rollover - (Non-Fatal)
VEHICLES : 1 semi-trailer
DAY: Thursday TIME: 2300 hours
WEATHER: Fine LIGHTING CONDITIONS: Night, road not lit
ROAD SURFACE: Sealed, dry
OCCUPANTS: 1
SPEED LIMIT: 110 km/h

CRASH DESCRIPTION:

A loaded semi-trailer was travelling north along a straight, level section of a four-lane divided highway, when it ran off the left side down the road's formation embankment. It ran along the natural surface alongside the road for 150 metres and, as the driver attempted to regain the bitmen, the truck yawed clockwise and rolled onto its left side, caning to rest partially blocking both north bound lanes. The driver reported that had been feeling tired and must have fallen asleep, resulting in the semi-trailer running off the road.

UNIT I: Vehicle Type: 1977 Mack prime mover, with loaded semi-trailer
Driver: Male, 31 years, truck driver, BAC: zero, no seat belt available
Injuries: None stated. MAIS: 0





Road Type : Notional highway
 Surface : 4 lone Seal Div. Dry
 Shoulder : Unsealed, formed, dry



0 10 20
 Scale (m)



Legend

- Fence (Post and Wire) 
- Gauges 
- Skid Marks 
- Culvert 

N.H.&M.R.C. Road Accident Research Unit
 Rural Accident Study 1986-87

Title **RS-073**

Dep.No.	RS073-1	Issue	1
Production	-	Scale	Actual

GENERAL CHARACTERISTICS:

CRASH TYPE: Collision with tree - (Fatal)
 VEHICLES: 1 car
 DAY: Sunday TIME: 0130 hours
 WEATHER: Raining LIGHTING CONDITIONS: Night, road not lit
 ROAD SURFACE: Sealed, wet
 OCCUPANTS: 5
 SPEED LIMIT: 110 km/h

CRASH DESCRIPTION:

The car was travelling at a speed estimated by the driver to have been 110 km/h, on a winding, two-lane road, in the rain, at night. The vehicle's five teenage occupants were on their way to a party. On entering a right hand bend the rear wheels slid to the left and the car yawed clockwise. Despite the driver's attempts to control the slide it went off the road sideways and struck a tree on the left rear door. It then rotated through 300° anti-clockwise, coming to rest partially on the left seal and shoulder. The driver stated that he always drove at high speed, and during the journey had reached speeds in excess of 180 km/h. He also reported that on the open road he commonly travelled around corners in an oversteer slide. On this occasion he turned into the slide to correct it but before the car straightened up it struck a tree. After impacting the tree both front seat occupants were conscious but the right and centre rear seat occupants were unconscious and the left rear seat occupant, dead.

UNIT 1: Vehicle Type : 1982 GH Sigma Turbo sedan

Driver: Male, 18 years, clerk, BAC: zero; wearing inertia reel 3 point seat belt

Injuries: Laceration to fore head from striking roof console; bruised chest from seat belt.
 Hospitalized < 24 hours. MAIS: 1

Front Seat Passenger: Male, 17 years, BAC: 0.008, inertia reel 3 point seat belt worn

Injuries: Neck strain; bruising to chest from seat belt; bruising to knees from underside of instrument panel. Transported to hospital but not admitted. MAIS: 1

Right Rear Seat Passenger: Female, 17 years, BAC: zero, 3 point static seat belt worn

Injuries: Concussion; bruising of chest and abdomen from seat belt; fracture of left radius and ulna. Hospitalized < 24 hours. MAIS: 2

Centre Rear Seat Passenger: Female, 18 years, BAC: zero, wearing lap belt

Injuries: Concussion; laceration left forehead, fracture left mandibula; fracture left clavicle; fracture of pubic body of pelvis; right brachial plexus injury. Hospitalized 16 days. MAIS: 2

Left Rear Seat Passenger: Male, 17 years, BAC: 0.055, 3 point static seat belt **worn**

Injuries: Abrasions to the left side of face, below chin and right side of neck. Transverse fracture of the vault of the skull, connecting with fractures of the base of the skull through the venous sinuses, causing bleeding into the pharynx. Rupture of the aorta at the isthmus. Dead at scene. MAIS: 5

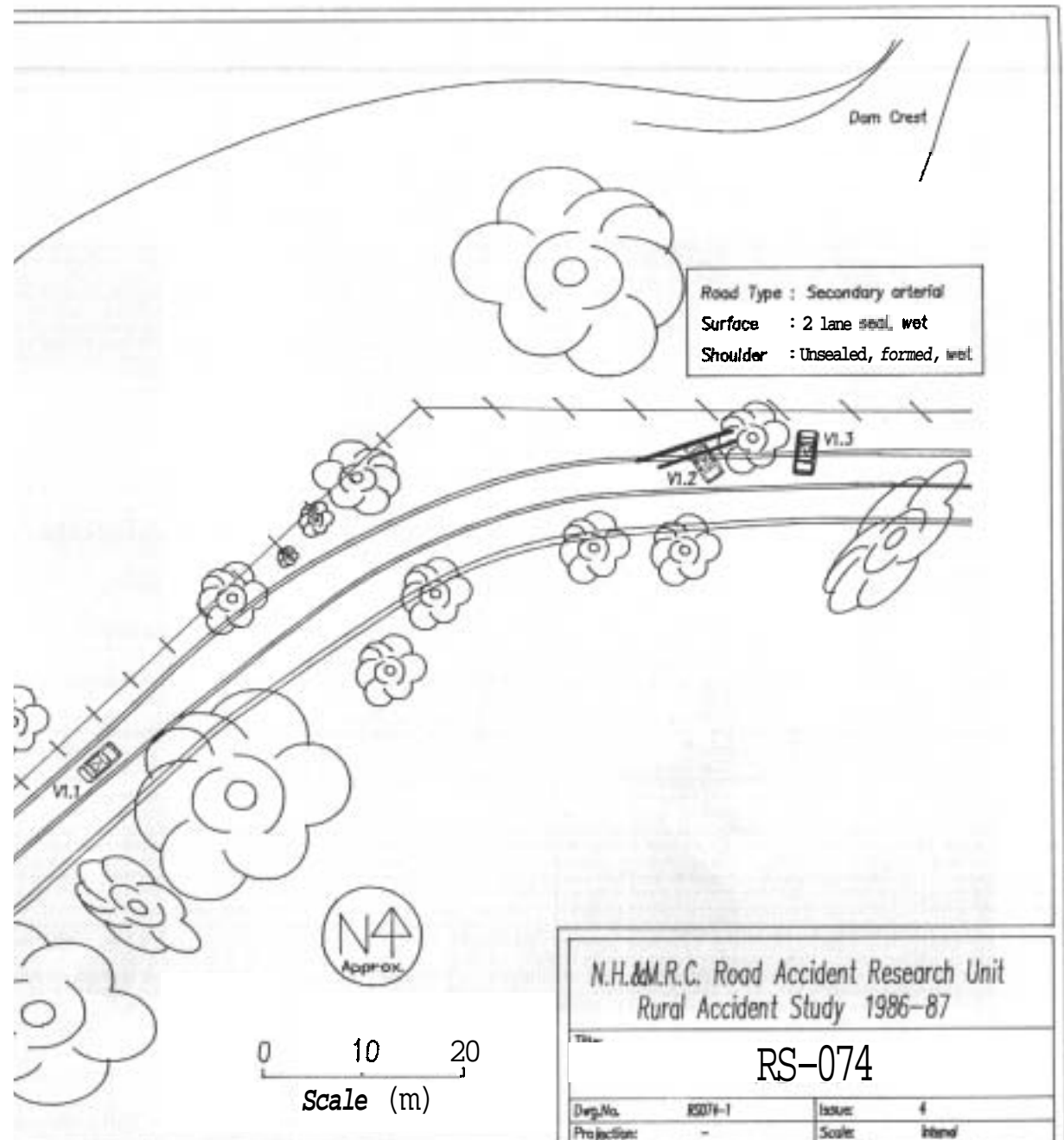




FIGURE A71: Crash 73. Final position of the semi-trailer showing partial loss of load.



FIGURE A72: Crash 74. Left side of Sigma sedan which struck a tree on the left rear door. Note the intrusion into the rear seat occupant space. Left rear seat passenger was killed.

CASE: RS 75

GENERAL CHARACTERISTICS:

CRASH TYPE: Single vehicle rollover (Non-Fatal)
VEHICLES: 1 car
DAY: Monday TIME: 0900 hours
WEATHER: Fine LIGHTING CONDITIONS: Daylight, sunny
ROAD SURFACE: Sealed, dry
OCCUPANTS: 3
SPEED LIMIT: 110 km/h

CRASH DESCRIPTION:

The car was travelling west on a winding two-lane road at a speed, estimated by the driver, of 60 km/h when, approaching a right hand bend, the left wheels went off the bitumen onto the gravel shoulder. The car travelled completely onto the shoulder and up an embankment before travelling across the road in a clockwise yaw and running down into a 5 metre deep gully leading into a stream. As the car ran down the gully, the right front corner impacted the ground. The car came to rest on its right side in the stream. The driver and the two passengers, children being taken to school by their mother, climbed out of the left front door. The driver was a known epileptic and on medication. It seems likely that she had a mild seizure which precipitated the crash. She has a partial memory of events before the accident, including her son operating the brake pedal as the car left the road. The driver drove only occasionally and only on rural roads as she considered that her epilepsy made it too dangerous to drive in built up areas.

UNIT 1: Vehicle Type: 1966 XP Ford Falcon sedan, no seat belts fitted

Driver: Female, 34 years, home duties, BAC: zero, no seat belt available

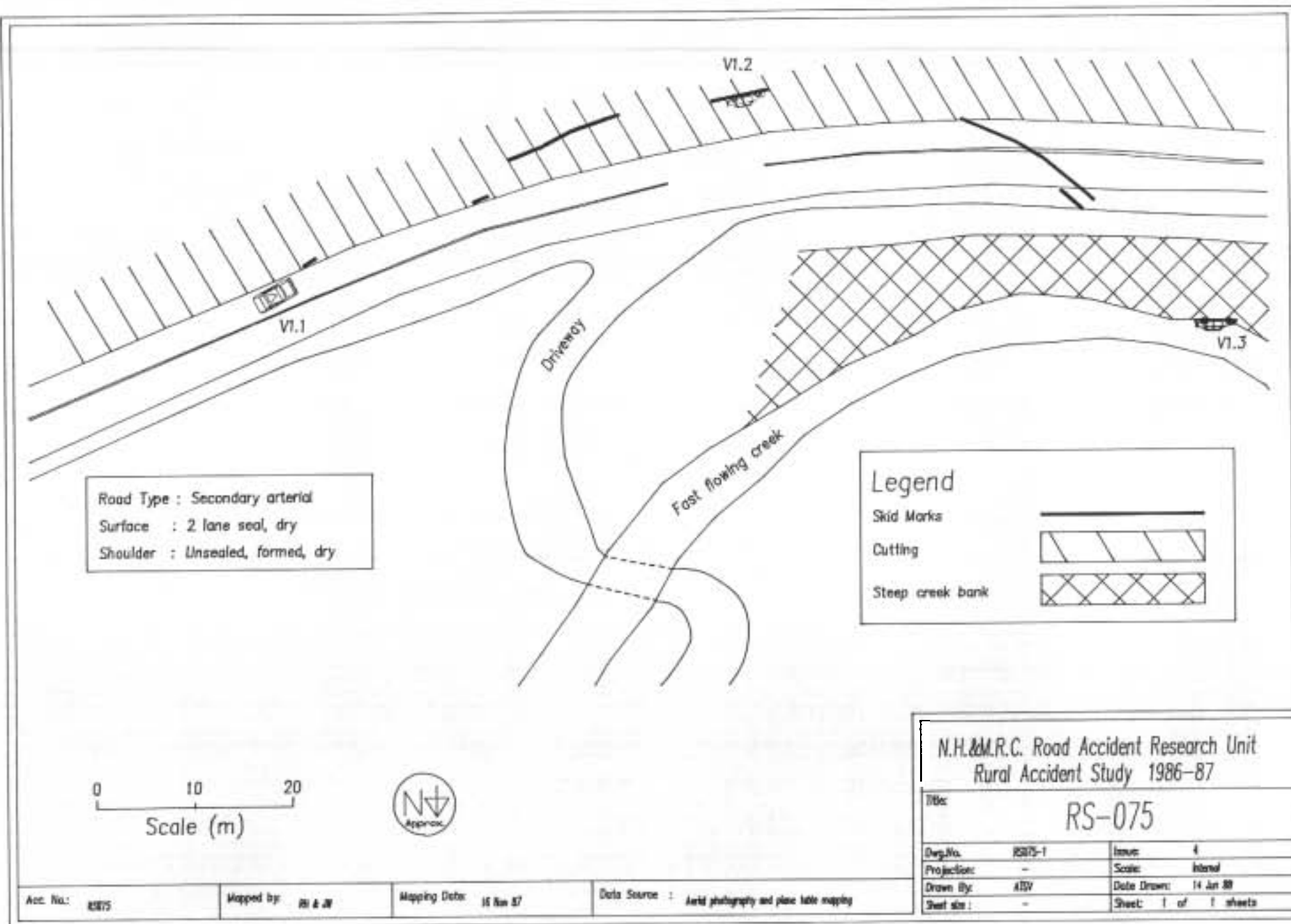
Injuries: Bruising to right thigh, knee and ankle; laceration to right arm; abrasion to left forehead and nose. Transported to hospital but not admitted. MAIS: 1

Front Seat Passenger: Male, 11 years, student, no seat belt available

Injuries: Lacerations to right temporal region, eyebrow, lip and right hand probably from striking windscreen. Hospitalized for 10 days. MIS: 1

Rear Seat Passenger: Male, 8 years, student, no seat belt
available

Injuries: Bruising to head and shoulders.
Transported to hospital but not admitted. **MAIS:** 1



GENERAL CHARACTERISTICS:

CRASH TYPE: Single vehicle rollover - (Non-Fatal)

VEHICLES : 1 four wheel drive utility

CAY: Wednesday TIME: 1145 hours

WEATHER: Rain LIGHTING CONDITIONS: Overcast

ROAD SURFACE: Sealed, wet

OCCUPANTS: 1

SPEED LIMIT: 110 km/h

CRASH DESCRIPTION:

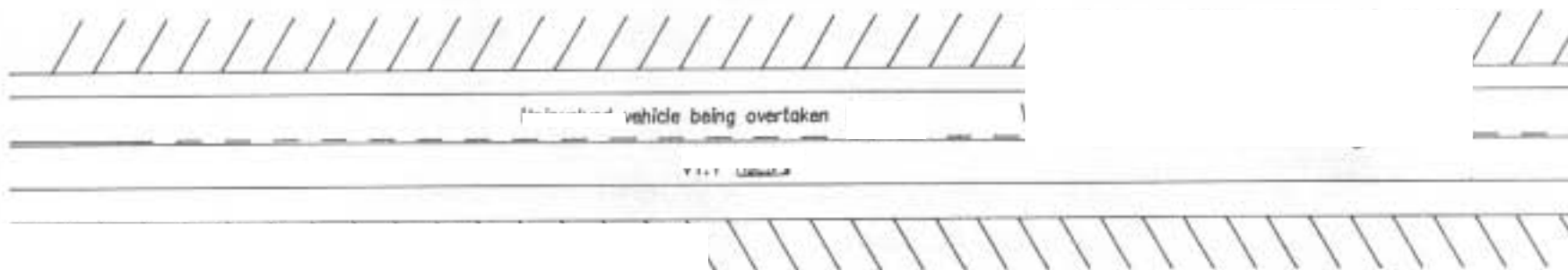
The unladen vehicle was travelling down hill on a two-lane road behind a slower car. The driver started to overtake, then braked hard and swerved to the left as an oncoming vehicle appeared from a dip created by the convex vertical curvature of the slope in the road in front of him. The rear wheels locked under braking and the vehicle skidded across the left side of the road, yawing anti-clockwise and, while going partially backwards, struck an embankment with the right front corner which dug into the soft earth. The vehicle then rolled to its right and the right rear corner of the tray struck the embankment. The vehicle then pivoted and rolled end for end, landing on its roof, and slid across the road, caning to rest on the centre line facing the way it had come. The driver climbed out of the driver's door which opened during the rollover. The vehicle was fitted with worn, full lug, off road, tyres.

UNIT 1: Vehicle Type : 1984 Daihatsu F25P Series four wheel drive tray-top utility

Driver: Male, 20 years, agricultural labourer, BAC; zero, inertia reel 3 point seat belt available, but not worn

Injuries: Laceration right wrist; bruised right knee. Treated at doctor's surgery. **MAIS:** 1

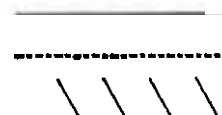
Road Type : Local
 Surface : 2 lane seal, wet
 Shoulder : Unsealed, formed, wet



0 10 20
 Scale (m)



Skid Marks
 Scrape Marks
 Cutting



rch Unit
 87

Title
 RS-076

Orig.No. 85076-1 Issue 4

Internal
 14 Jan 88
 1 sheets

Aerial photography and plans table 1



FIGURE A73: Crash 75. Final position of the car which came to rest on its right side in a fast flowing stream.



FIGURE A74: Crash 76. Final position of the utility. Note panels from the rear tray on the shoulder of the road.

GENERAL CHARACTERISTICS:

CRASH TYPE: Single vehicle rollover - (Non-Fatal)

VEHICLES: 1 car

DAY: Sunday TIME: 2215 hours (see text)

WEATHER: Possibly raining LIGHTING CONDITIONS: Night, road not lit
(see text)

ROAD SURFACE: Sealed, wet

OCCUPANTS: 1

SPEED LIMIT: 80 km/h

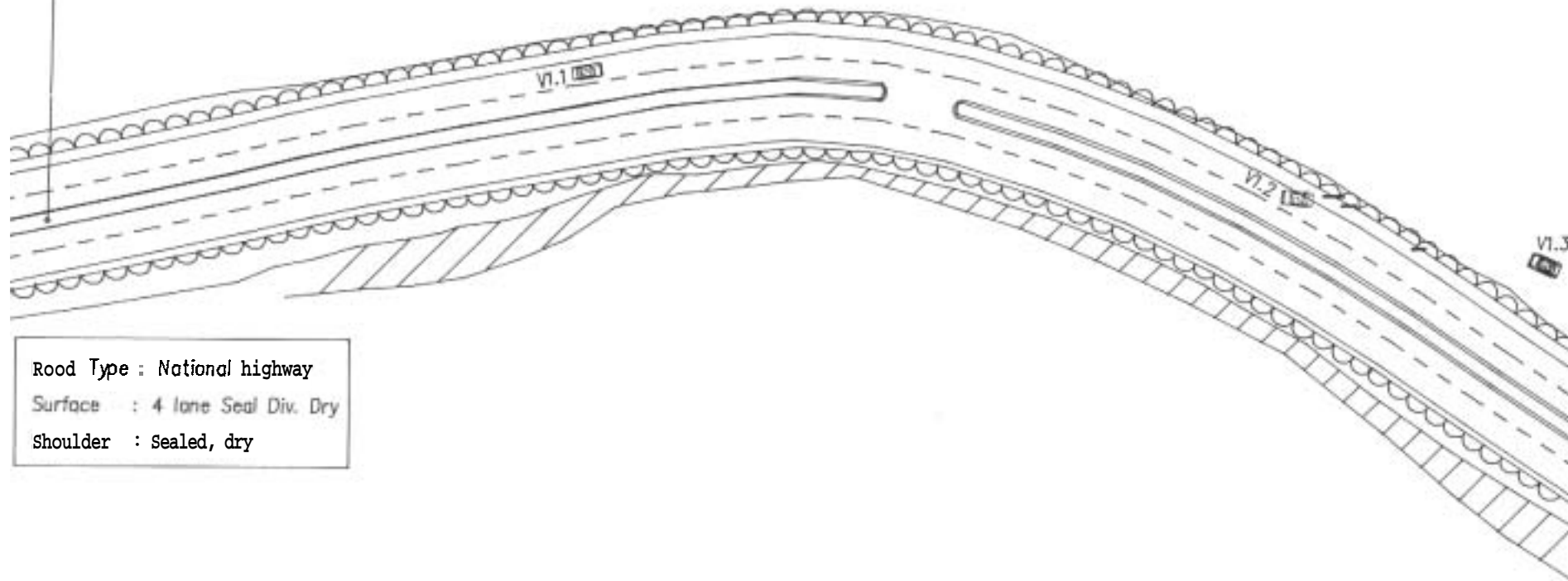
CRASH DESCRIPTION:

The driver has only a fragmentary recollection of the events before the accident. There were no witnesses. He had spent the afternoon at home drinking alcohol. He decided that he should go and check on some property he owned, and it was while returning home after doing this that the crash occurred. The car was travelling downhill in the left lane of a four-lane, divided highway when, while negotiating a long left hand bend, the car struck the armco railing at the left side of the road. The reinforced concrete posts supporting the guard rail failed, allowing the car to ride up and over the rail. The car then slid backwards down a steep embankment coming to rest on its wheels facing the way it had came. A driver who had been passed by the case vehicle reported that it had been travelling erratically and at high speed. Whilst he was travelling in the right lane at 110 km/h the case vehicle had passed him on the right by driving along the paved shoulder. It is likely that it was some time after the crash before the car was found, the driver reportedly sitting in the driver's seat and attempting to drive his severely damaged vehicle back up the embankment.

UNIT 1: Vehicle Type : 1978 TE Ford Cortina sedan

Driver: Male, 39 years, clerk, BAC: 0.160, inertia reel 3 point seat belt worn

Injuries: Concussion; neck strain. Transported to hospital but not admitted. MAIS: 1



Road Type : National highway
 Surface : 4 lane Seal Div. Dry
 Shoulder : Sealed, dry

0 10 20
 Scale (m)

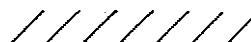


Legend

Steel guard rail



Cutting



Skid Marks



N.H.M.R.C. Road Accident Research Unit
 Rural Accident Study 1986-87

Title:

RS-077

Dwg. No.

RS077-1

Issue:

1

Production:

Scale:

Sheet:

GENERAL CHARACTERISTICS:

CRASH TYPE: Side impact intersection collision - (Non-Fatal)

VEHICLES: 2 cars

DAY: Tuesday TIME: 0930 hours

WEATHER: Fine LIGHTING CONDITIONS: Daylight, sunny

ROAD SURFACE: unsealed, damp

OCCUPANTS: unit 1, 2; unit 2, 1

SPEED LIMIT: 110 km/h

CRASH DESCRIPTION:

Unit 1 was travelling south on a gravel road approaching a Give Way sign at a right angled intersection. The driver stated that she looked both left and right several hundred metres before the intersection and when closer she looked to the right, but her view to the left was obscured by trees. She then saw Unit 2 approaching from the left, braked hard and skidded for 23 metres before impact. Unit 2 was travelling west at approximately 80 km/h also on a gravel road. The driver slowed for the intersection then braked hard when she saw Unit 1 and skidded for 20 metres to the impact point. The front of Unit 2 struck the left front wheel of Unit 1, then the right rear of Unit 2 struck the left rear corner of Unit 1 and the cars came to rest in the south west corner of the intersection. Examination of the site showed there were no obstructions to vision between the two roads. The driver of Unit 1 had only travelled on this road once before. She said she was in a "thinking mood" because of personal troubles and did not see the Give Way signs.

UNIT 1: Vehicle Type : 1969 HT Holden Premier sedan

Driver: Female, 28 years, home duties, BAC: zero, static 3 pint seat belt worn

Injuries: None. Transported to hospital but not admitted. MAIS: 0

Front Seat Passenger: Female, 4 years, static 3 pint seat belt worn

Injuries: None. Transported to hospital but not admitted. MAIS: 0

UNIT 2: Vehicle Type: Circa 1973 Ford Escort sedan

Driver: Female, 29 years, unemployed, BAC: zero, inertia reel 3 pint seat belt available but not worn

Injuries: Neck strain; back strain; lacerations to left upper leg; bruising to knee, ribs, ankles. Hospitalized for 4 days. MAIS: 1

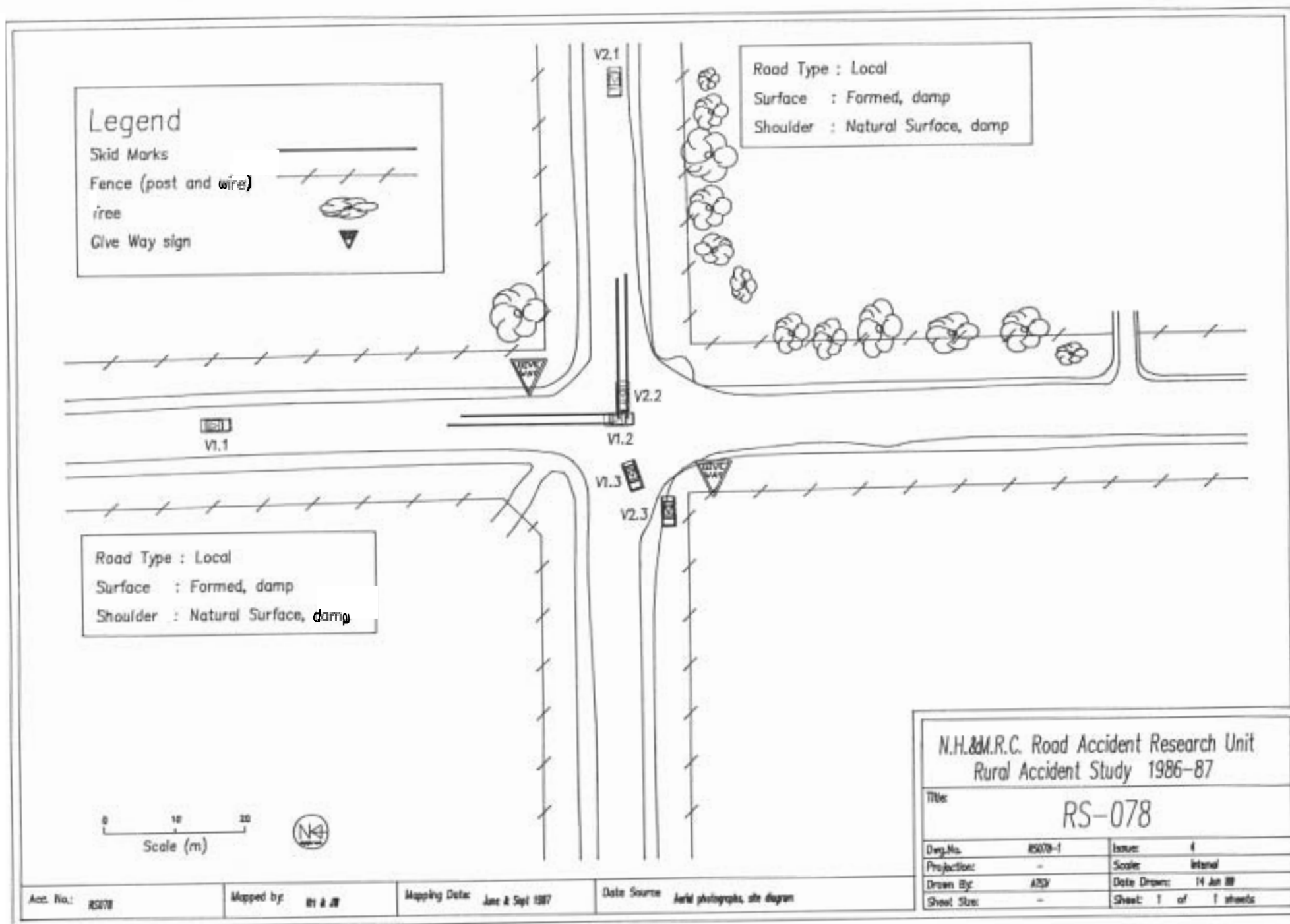




FIGURE A75: Crash 77. Final position of the car down an embankment.



FIGURE A76: Crash 78. Final positions of Holden Premier sedan and Ford Escort sedan. Note skid marks indicating the vehicles' paths after impact.

GENERAL CHARACTERISTICS :

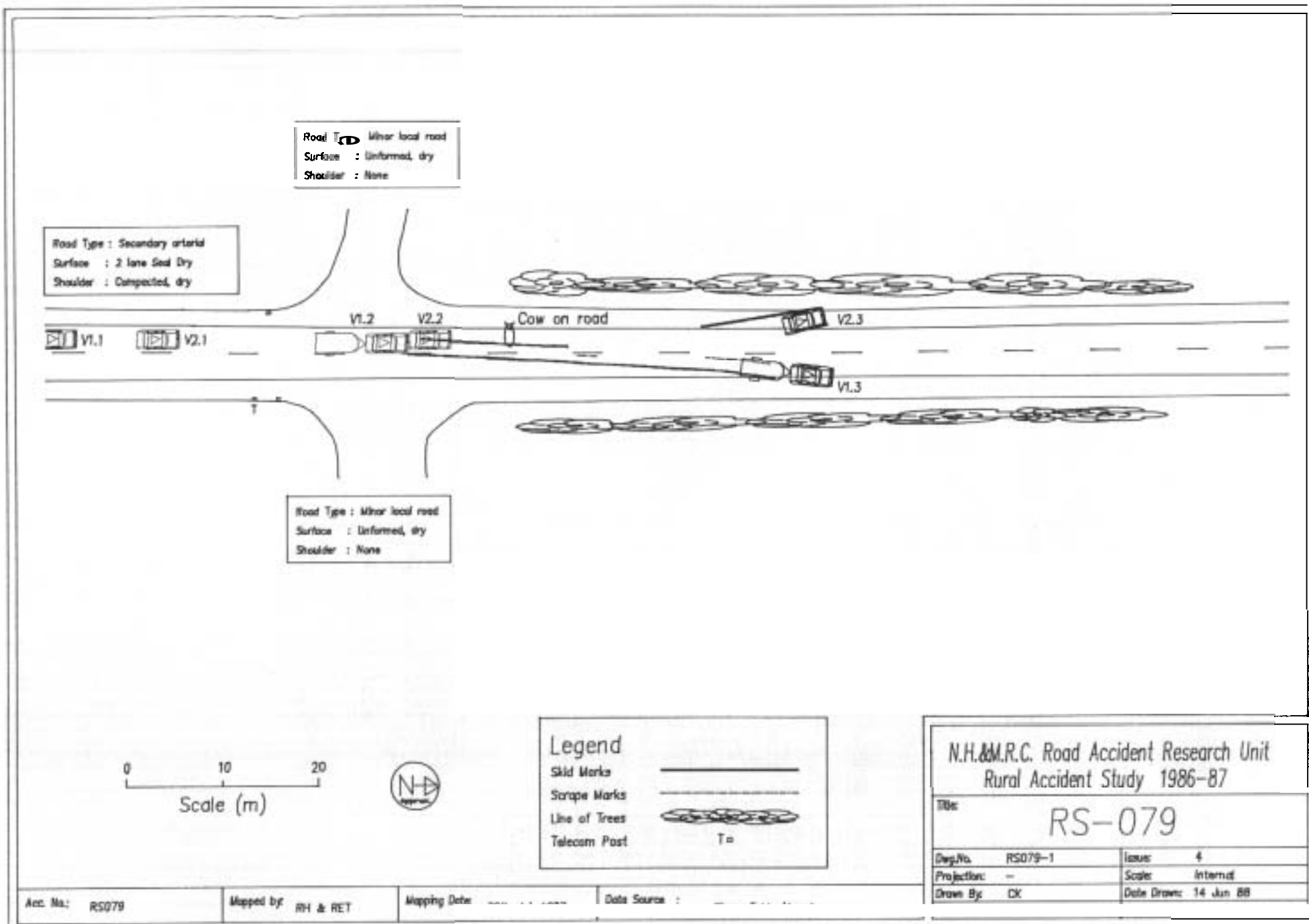
CRASH TYPE: Rear-end collision - (Non-Fatal)
 VEHICLES: 2, car towing laden horse float and a utility
 DAY: Wednesday TIME: 1245 hours
 WEATHER: Fine LIGHTING CONDITIONS: Daylight, sunny
 ROAD SURFACE: Sealed, dry
 OCCUPANTS: Unit 1, 1; Unit 2, 2
 SPEED LIMIT: 110 km/h

CRASH DESCRIPTION:

Unit 2, a utility, was travelling on a straight two-lane road at a claimed speed of 70 km/h when a cow appeared out of a ditch on the left side of the road, immediately after a vehicle ahead had passed. The driver braked quickly to a stop, without skidding, and without hitting the cow. The driver of Unit 1, which was following Unit 2, saw its brake light came on, but didn't brake hard because of the loaded horse float. She tried to drive around Unit 2 but struck its right rear corner. Skid marks at the scene suggested that the trailer brakes operated, locking the wheels. Unit 1 was travelling at approximately 85 km/h before braking according to the driver.

UNIT 1: Vehicle Type : 1986 Ford XF Falcon sedan with loaded horse float
 Driver: Female, 17 years, stable hand, BAC: zero, inertia reel 3 pint seat belt worn
 Injuries: None. Remained at scene. MAIS: 0

UNIT 2: Vehicle Type : 1973 Ford XD Falcon utility
 Driver: Male, 57 years, bus driver, BAC: zero, static 3 point seat belt worn
 Injuries: Concussion: neck strain: bruising to chest: back pain. Hospitalized for 2 days. **MAIS:** 2
 Front Seat Passenger: Female, 50 years, static 3 point seat belt worn
 Injuries: None. Transported to hospital but not admitted. **MAIS:** 0



GENERAL CHARACTERISTICS:

CRASH TYPE: Side impact intersection collision - (Non-Fatal)
 VEHICLES : 2 cars
 DAY: Friday TIME: 0845 hours
 WEATHER: Fine LIGHTING CONDITIONS: Daylight, sunny
 ROAD SURFACE: Sealed, dry
 OCCUPANTS: Unit 1, 2; Unit 2, 2
 SPEED LIMIT: 110 km/h

CRASH DESCRIPTION:

Unit 1 stopped at a Give Way sign before turning right into a two-lane highway. The driver, who was travelling with his wife and on the way to a doctor's surgery, said he looked both ways, saw no vehicles, and moved off. In doing so Unit 1 moved directly into the path of Unit 2, the driver and passenger of which were on their way to work. The left front corner of Unit 2 struck the right front wheel of Unit 1. The driver of Unit 2 saw Unit 1 stop, then move off. He braked from a stated speed of 100 km/h and swerved to the right across the safety bar median in an unsuccessful attempt to avoid the collision.

The intersection is laid out in such a way that the driver of Unit 1 had to turn more than 90° to his right to look for approaching traffic, and his view was obscured by a chevron sign and a tree. The side windows of Unit 1 had been tinted.

UNIT 1: Vehicle Type : 1983 Nissan Pulsar sedan

Driver: Male, 77 years, retired, BAC: zero, inertia reel 3 point seat belt worn

Injuries: None. MAIS: 0

Front Seat Passenger: Female, 74 years, home duties, BAC: zero, inertia reel 3 point seat belt worn

Injuries: Neck strain: bruised chest from seat belt: bruise right thigh from contacting gear lever: bruised left leg. Transported to hospital but not admitted. MAIS: 1

UNIT 2:

Vehicle Type : Circa 1973 HQ Holden utility

Driver: Male, 47 years, builder, BAC: zero, inertia reel
seat belt worn

Injuries: Neck strain. Remained at scene. MAIS:
1

Front Seat Passenger: Male, 26 years, builder, BAC: zero,
inertia reel 3 point seat belt worn

Injuries: Fracture left fibula which became
apparent several days later. Remained at scene.
MAIS: 2

