

January 22, 2001

Dorset Realty Group Canada Ltd.
200 8211 Ackroyd Road
Richmond, BC V6X 3K8

Attention: Mr. Brian Spencer
Fax: 270-8446

Dear Sir:

Re : LMS 2503 – Terravita Place
868 Cassiar Street, Vancouver, BC
Our Reference : 01-448

As requested, an on-site inspection was performed on two separate structures that included three units. The following was found:

Roof System Content, Typical All Areas

Plywood decks, plus laminate shingles nailed, plus building paper (felt) at eaves only, plus vent stacks, plus continuous aluminum gutters.

The roof system deficiencies are as follows:

- (1) Poor vent stack and component installation. (See Photos # 3, 38, 39 & # 40)
- (2) Poor mainfield shingle end laps, ranging from 3" (inches) to 6 1/2" (inches) in many locations. (See Photos # 7, 21, 22, & #36)
- (3) Exposed nail heads penetrating through the shingles (see Photos # 6 & # 23), plus other nail damage (see Photo # 24)
- (4) Felt underlay only under eaves (see Photo # 20), with no coverage in mainfield area (Photo # 4 & # 34) or at ridges (Photo # 18) or at valleys (Photo # 27).
- (5) The ridge cap installations are poorly installed (see Photo # 27). Further the "closed cut valley" installation is required to run up 12" (inches). A few of the valleys checked have 6" (inches) coverage only (see Photo #27) and none of the valleys have a felt underlay.
- (6) The shingle nailing pattern is incorrect and the nail heads are starting to rust (see Photo #38).
- (7) Some of the installed sheet metal flashing is resulting in stucco damage (see Photo # 26).

- (8) The gutters' down pipe installation is such that the flow of water is in some locations detrimental to the shingles and components (no Photos), and in a minimum of one location the lack of down pipes, in combination with poor component installation, are resulting in leaks (see Photos # 1, 3, 4 & # 5). The leak into Unit # 44 is an example of this condition.

Note: The roofing contractor assisting Roof Tech on site has corrected the poor vent installation and has installed short lengths of down pipe (adequate to bypass the vents). This should correct this leak location.

- (9) The attic ventilators at the ridges (see Photo #31) are nailed at the bottom flange only. This indicates that the vents were installed after the shingle installation. (Rather than weaved in between shingle layers) and the exposed nails are rusting.
- (10) The rusting of the nails (Photo # 37) is predominantly due to moisture accessing the underside of the shingle through the plywood side and butt joints. (See Photos # 16, 28 & # 35.)
- (11) The same moisture access (as noted in Item #10) is also assisting in the minimum adhesion of the self adhesive strip on the shingles (Photo # 37).

Comments

Although as noted the shingle and component installation is flawed through out and are unquestionably contributing to moisture entry into the structure, the predominant causes of moisture within the attic space is due to poor air flow ventilation controls and the fact that moist air from within the living areas is being driven into the space via the placement of the powered exhaust vents. The deficiencies and results are as follows:

The exhaust vents are installed to flow out of the soffits (see Photos # 9, 42, 43, & 44). Unfortunately, when clothes dryers, etc. are exhausting moist air, it exists the vents and is sucked into the soffits, then runs along the deck underside towards the ridge vents resulting in varying degrees from damp dry to saturated substrates (see Photos # 15, 16, 28 & #35). This moisture travels between the plywood and shingles rusting nails, etc., and forms into leaks at windows (see Photos # 14 & # 41) and into interior or ceiling spaces (see Photo #30).

The varying degree of moisture, within the attic spaces, appears to increase with the number of residents within each unit and therefore the amount of washing, etc., undertaken. The examples are as follows:

- (a) Unit #44 - The attic space has very little moisture damage via the forced moist air within the soffits, with the primary leak being a roof system component. (See Photo # 1A)
This unit has one primary resident – an adult male.)
- (b) Unit #43 – The attic space has staining throughout that is “damp to dry”. The deficiencies within this unit are (1) that extra soffit ventilation and other vent have

been installed to reduce the quantity of retained moist air and (2) the residents are two adults and two small children (see Photos # 5, 15 & # 16).

- (c) Unit #57 – This attic space (see Photos # 29 through # 35) has saturated plywood within the attic. The primary difference within this unit is that there are more residents within this unit.

In conclusion we feel that it can safely be stated that the roof systems and components are very poorly installed and that the systems are failing prematurely and that the various ventilation components are a detriment to the structure. Therefore based on the above, it is recommended that re-roofing and upgrading be undertaken within the near future.

Should there be other questions, and/or you wish us to proceed with Specifications, etc., please contact the writer.

Sincerely yours,

S. Davis for.

J.P. Jansen, R.R.O.

JPJ/sd (Inspection 01-448 Dorset re Terravita)

Attached: 52 Photos

- : Two page letter of instructions – Dorset Realty
- : Two pages – A-Super Roofing (Invoice)

PS: The attached A-Super Roofing invoice is approved for payment as they provided site assistance and stopped the Unit #43 roof leak.

Brian Spencer

TO: JUDJ
FROM - BRIAN SPENCER
DORSET REALTY

2 PAGES

From: "Brian Spencer" <brianspencer@dorsetrealty.com>
To: "Rooftech- Judd Jansen" <rooftech@bc.sympatico.ca>
Sent: January 17, 2001 4:14 PM
Subject: LMS 2503 - TerraVita - 868 Cassiar St. Vancouver

THIS E-MAIL FAILED
SO I FAXED

Judd, This project consists of 88 Units. 12 units are a centrally located Heritage building and it is ringed with Townhouses.

We instructed a contractor called Aquataur to investigate all of the attic spaces in PH 2 townhouses only as it was suspected that the dryer vents may not be properly connected since one unit was found to have blackened attic roof sheeting and trusses. It did have a badly connected dryer vent pipe.

I attached a copy of the report from Aquataur (see below) after they inspected 6 roof attics. It appears that they have a concern regarding the installation of the roofing shingles. This project is about 3-4 years old.

The Units mentioned in the report are:

#43 - 3469 Terravita Place - Owner - Eric Kaas - 293-0130 Bus. 415-6133 / will be home after 3:20
#44 - 3469 Terravita Place - Owner - Chris Baker - (president of council) 299-0551 / will be home after 3:00
#67 - 3426 Terravita Place - Owner - Simon & Winnie Lee - 299-2823 NA
#68 - 3426 Terravita Place - Owner - Philip Esworthy/Sandra Dexter - 298-4152 NA
Unit #57 - 3436 Terravita Place - Owner Wei-Quan He/Sio- 298-8312 called me this morning also
reporting water ingress to the upper floor ceiling. (Please include this one also.) / will be home after 3:00

The strata corporation requires an expert to confirm that the incorrect installation of the roofing shingles has caused water ingress and if not, what has.

Could you arrange appointments to access the above five units, inspect the attics, inspect the roofs and shingles and provide a report. The strata would be interested to know what the manufacturers requirements were at the time of this installation as they particularly pertain to roofing felt under the shingles, who was the manufacturer etc.

If the roof shingle installation is the problem - what course of action should be taken and the approximate costs.

Please include pictures if possible.

This is an ASAP item so I would appreciate hearing back from you right away.

See report below.

AQUATAUR SERVICES LTD

1153 Grant Street Vancouver B.C. V6A 2J7

Tel: 737-7226 Fax: 737-7047

January 12, 2001

JOB # 01-0037

Attention: Brian Spencer

DORSET REALTY GROUP CANADA LTD.

17/01/2001

200-8211 Ackroyd Road

Richmond B.C. V6X 3J9

Dear Brian:

Re: Terra Vita Place – LMS 2503

The following notes were taken during our investigation of some water leaks:

1. -Several sheets of roof deck plywood are water saturated or heavily stained, particularly in suites # 43, 44, 67 & 68. We suspect that this may be a common occurrence in other suites, at least on the complex these units are in.
2. -The distance between the joints of the roof shingles is as little as 4". Most laminate shingle manufacturers suggest a sidelap of 10" for a 40" shingle. This is a major problem as once a roofer starts off a course of shingles without enough sidelap the problem repeats itself every shingle length right across the roof.
3. -Installation of an underlay may not have been demanded by the shingle manufacturer at the time the roof was done originally. In the past 2 or 3 years most manufacturers of laminate style shingles have made it mandatory that a 15 lb felt underlay be used to validate the shingle warranty.
4. -One solution is to re-roof properly with an underlay (approximately \$200 per square x 100 = \$20,000). Another possible solution would be to caulk the ends of every shingle that does not have adequate sidelap (difficult to time this type of repair because it must be done on dry cold weather – cost is approximately \$75 per square x 100 = \$7,500).
5. -Aquataur Services Ltd. is a maintenance and repair company with no affiliation to the Roofing Contractors Association of British Columbia. We recommend that you hire a licensed roofing consultant for a second opinion and then, if their opinion is similar to ours and if the original roofing contractor is/was a member of the RCABC, you may be able to have the warranty validated by the RCABC.

Please see attached photos and sketch. Call me if you have any questions.

Manuel Pereda

Management Team Member

A SUPER ROOFING INC.

25189 Dewdney Trunk Road
Maple Ridge, British Columbia
V4R 1X6

Telephone (604) 463-6444
or (604) 462-8389
Fax (604) 463-9696

FAX COVER SHEET

TO: J.P. Jansen

Name: _____

PAGE 1 of 2

Company: Roof-TECK

Date: Jan. 20/2001

Fax #: 882-9663

Time: 7:05 am
Sat. morning

FROM: Chris Schedel

If the number of pages indicated are not received, please phone
(604) 463-6444 and speak to sender.

COMMENTS:

Hi Judd, I'm Faxing over Bill for work
done ON TERRAVITA Place. AFTER I HAVE Faxed
you these invoices, I am Leaving to install
those new downpipes and to correct the
other vent ON ~~the~~ corner unit. (#43 ~~at~~)?

Thanks

Chris Schedel
240-8048

Supling

A. SUPER ROOFING INC.
 25189 Dewdney Trunk Rd.
 Maple Ridge, B.C. V4R 1X8
 403-8444 / 462-8889

INVOICE

OUR NUMBER	663719
DATE	Jan 20/2001
CUSTOMER'S ORDER	

SOLD TO ADDRESS BRIAN SPENCER DOWSET REALTY GROUP Canada LTD. RE: 818 Cassiar St Vancouver B.C. TERRAVIVA PLACE.		SHIP TO ADDRESS GST # 121542054	
TAX REG. NO.	SALES PERSON	TERMS	VIA

DESCRIPTION	PRICE	AMOUNT
- INSPECTED SEVERAL areas ON "ROOFS"	\$45.00 Per hour	
Valleys, Roofing Hardware, exposed Nails,	X 2 MEN	
under shingles, installation of shingles	X 2 hours	180.00
- INSPECTED CRAWL SPACES IN attics TO		
check for moisture on underside of Plywood		
and vents.		
- Repaired Leaking vent by supplying new		300.00
down Pipe elbows X 2 with #43		480.00
	GST	33.60
	PST	8.00
	TOTAL	513.60

Chris Schedel

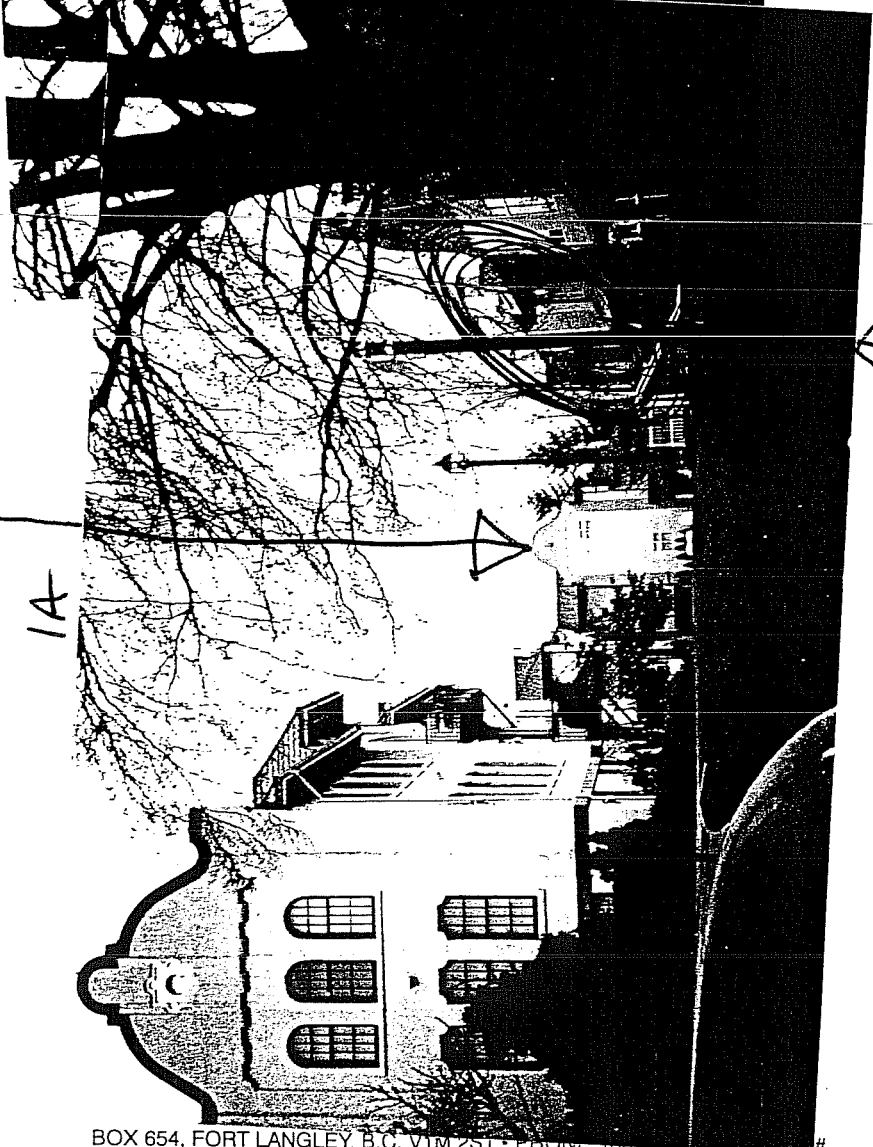
Approved For
 Payment Jan 20/01
 JP Johnson / ROOF Tech



UNITS # 43 & #44

1B

1A



UNIT #57

BOX 654, FORT LANGLEY, B.C. V1M 2S1 • PHONE: (604) 888-1111

01-448

SEE PHOTO #2

1C

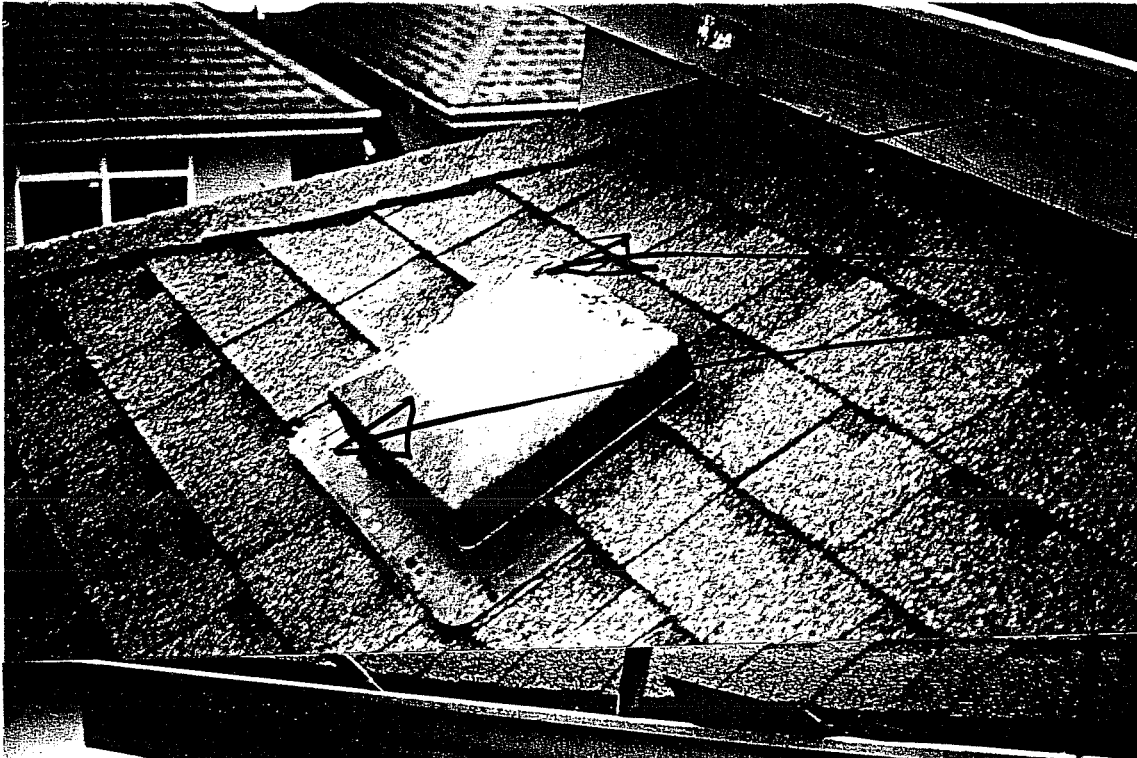
1B

SEE PHOTO #6

SEE PHOTOS #3, 4, 5, 6

THIS LOCATION IS A DUPLICATE OF PHOTO #1A, WITH LESS WATER ENTRY

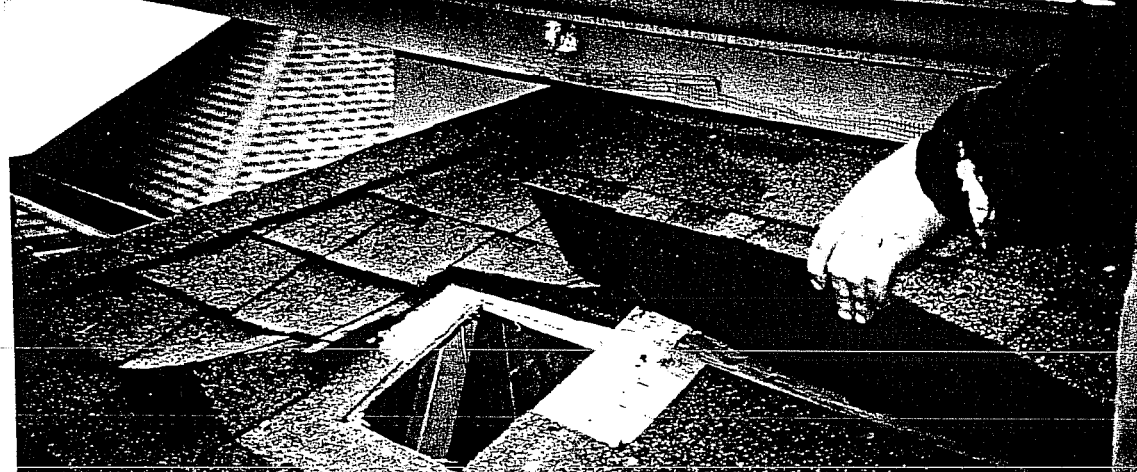
VENTS ABOVE LEAK IN UNIT #44



— WATER
RUNNING FROM
GUTTER'SPOUT

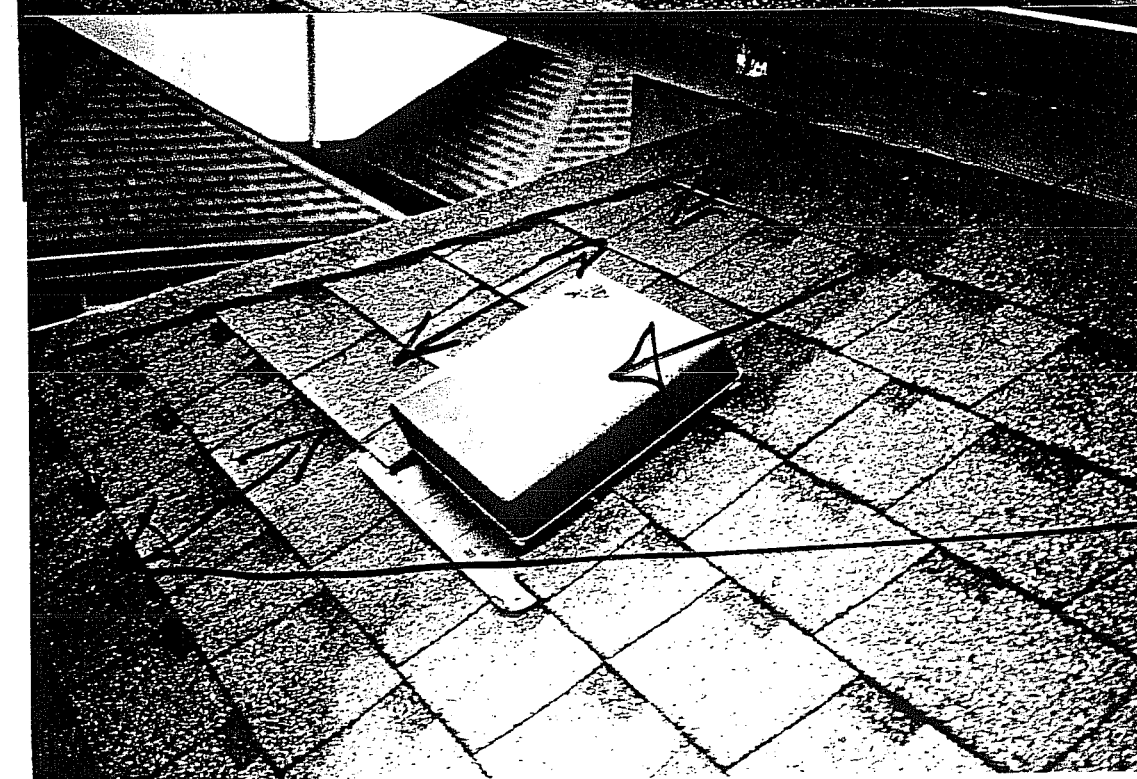
— POOR
— INSTALLATION
ALLOWS WATER
TO ENTER

3



NO "FELT"
UNDERLAY
BETWEEN
PLYWOOD &
SHINGLES

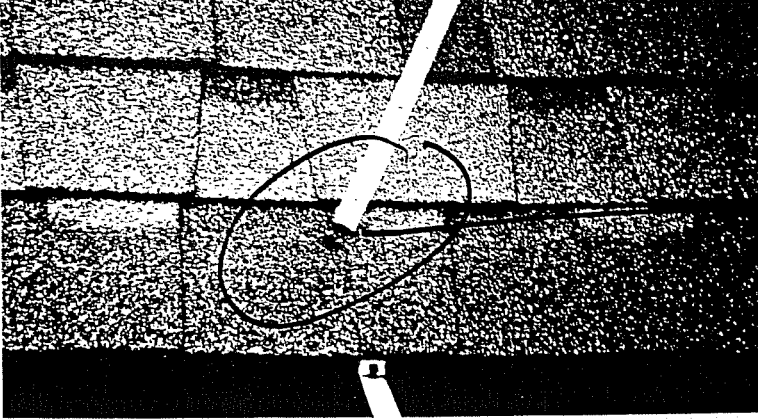
4



RE-INSTALLED
CORRECTLY

AN EXTENDED
DOWNPIPE IS
— REQUIRED

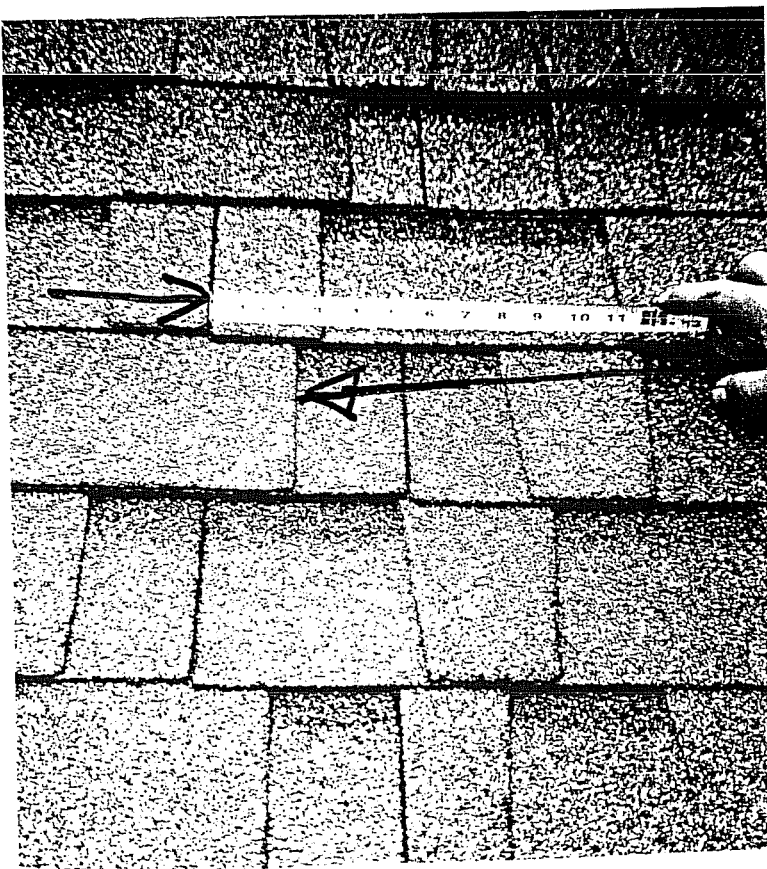
5



— NAIL HEAD
Protruding through
the shingles



— STAINS,
From water
Running behind
the gutter
6



— 3"(INCH) side lap

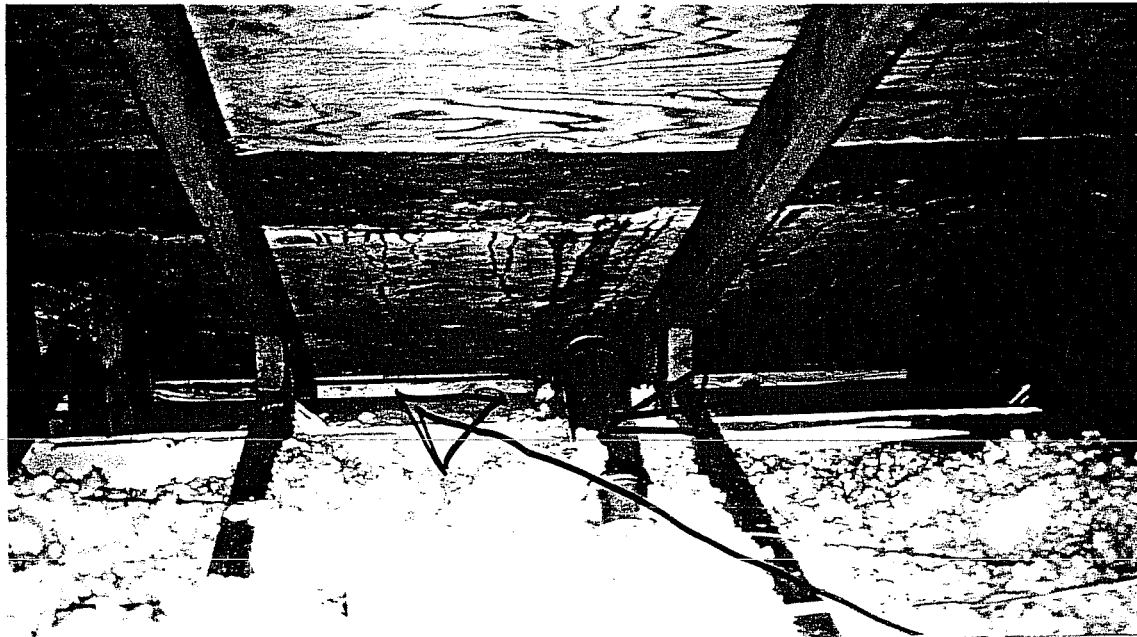
7



UNIT #44

NO
SOFFIT
VENTILATION

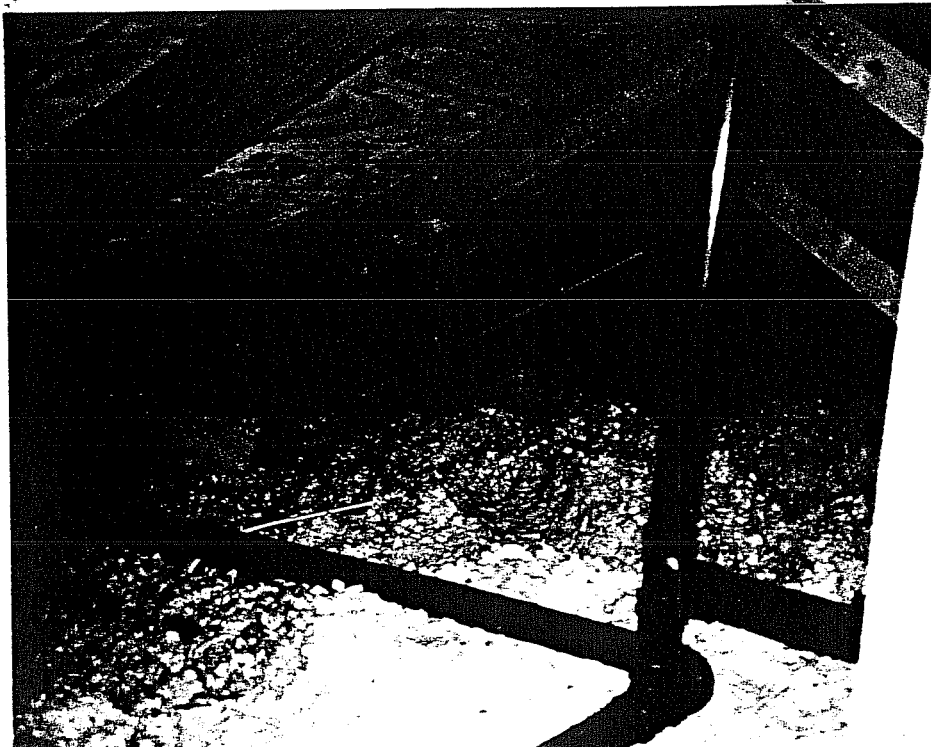
8



UNIT #44

TYPICAL OF
VENTS
@ SOFFITS, SEE
PHOTOS#

9

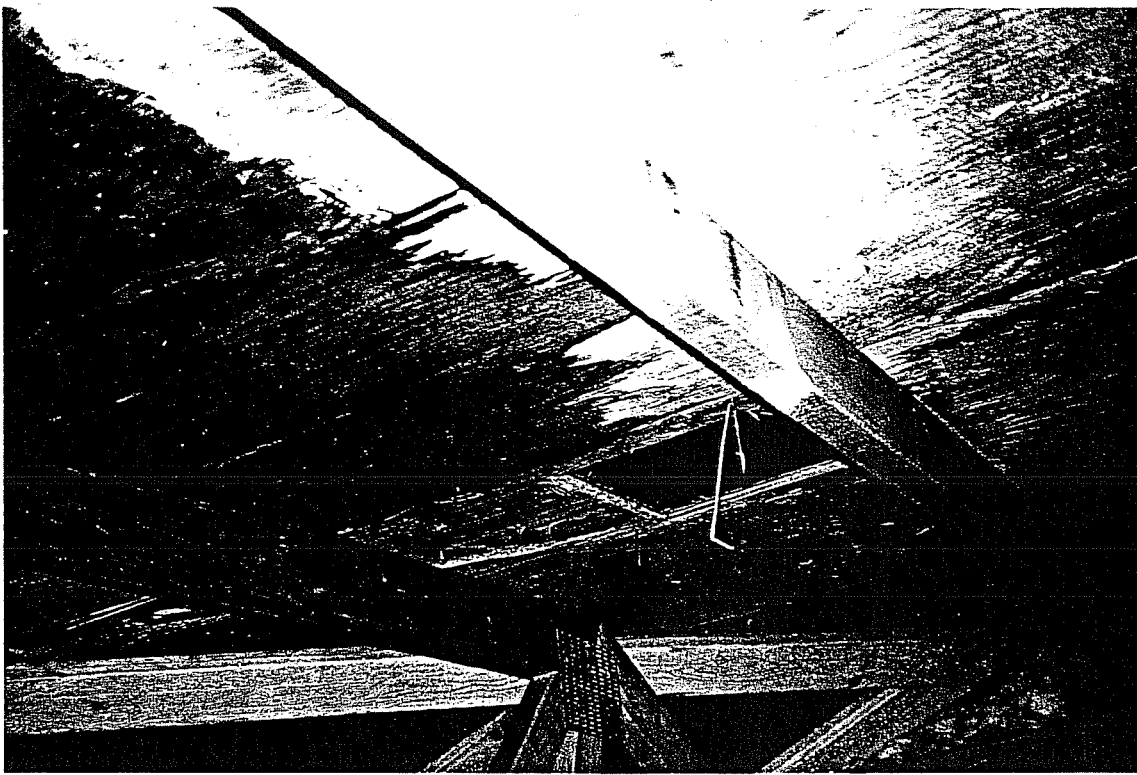


OPEN
SOFFITS

UNIT #44

Job# 01-448

10



UNIT #44

11

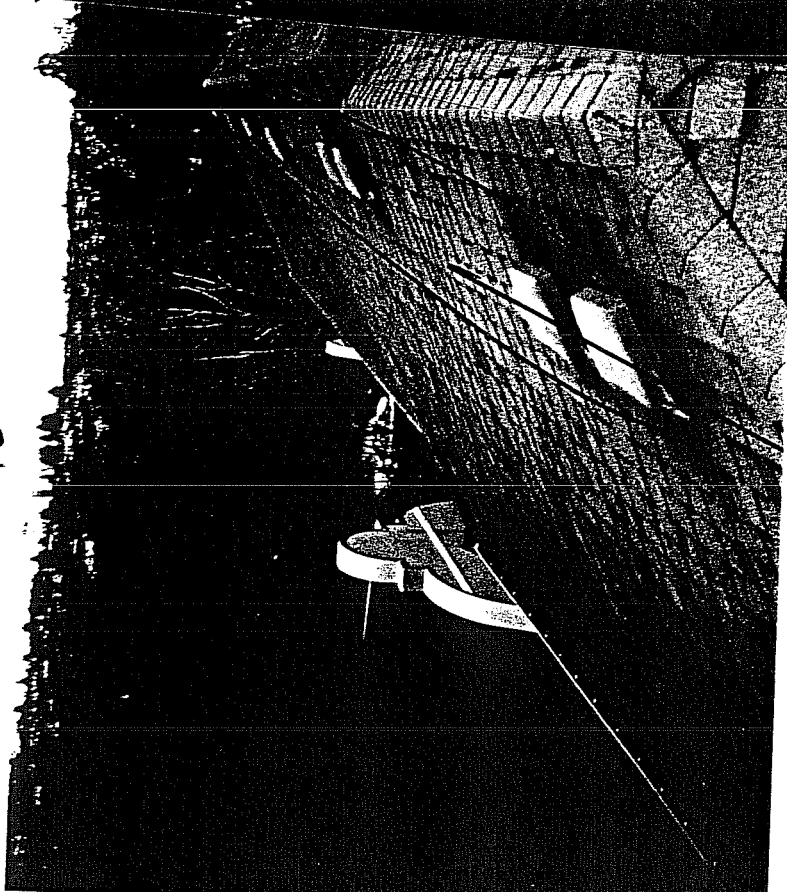


UNIT #44 | STAINS FROM:
(A) SOME IF NOT MOST
OF THIS STAINING IS
FROM INSTALLING "USED
PLYWOOD"

(B) SOME MAY BE
FROM THE ROOFING
&/OR VENTILATION
CONCERNS AS NOTED
IN UNITS #43 & #57

12

13A



13B



UNITS # 43 & #44

TYPICAL ATTIC

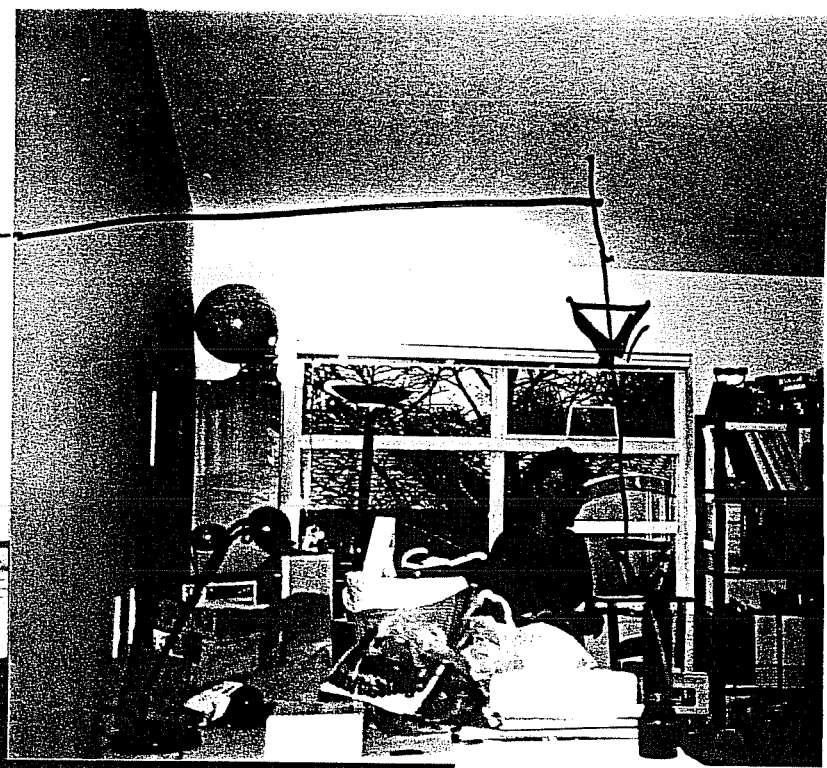
SPACE VENTS

SEE PHOTOS #

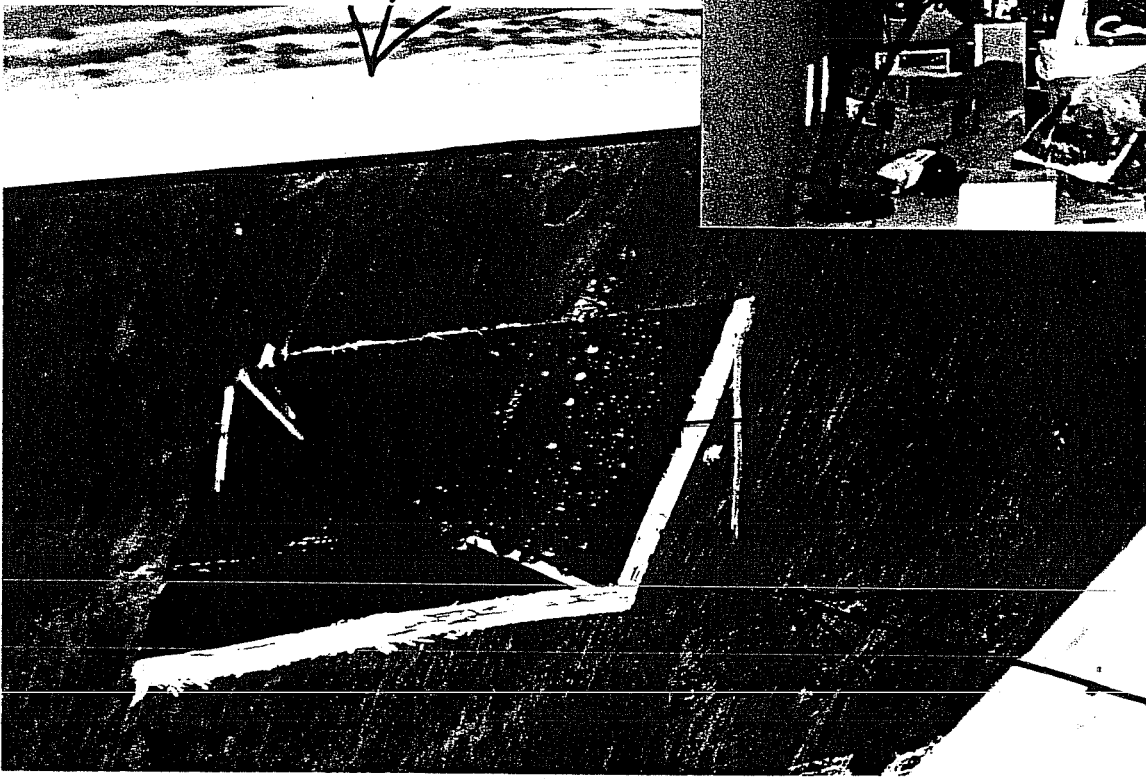
14, 15, & #16

UNIT #43 WATER
STAINING OCCURS ON
TOP @ SILL AREAS

THIS VENT IS @ RIDGE
OF UNIT #43



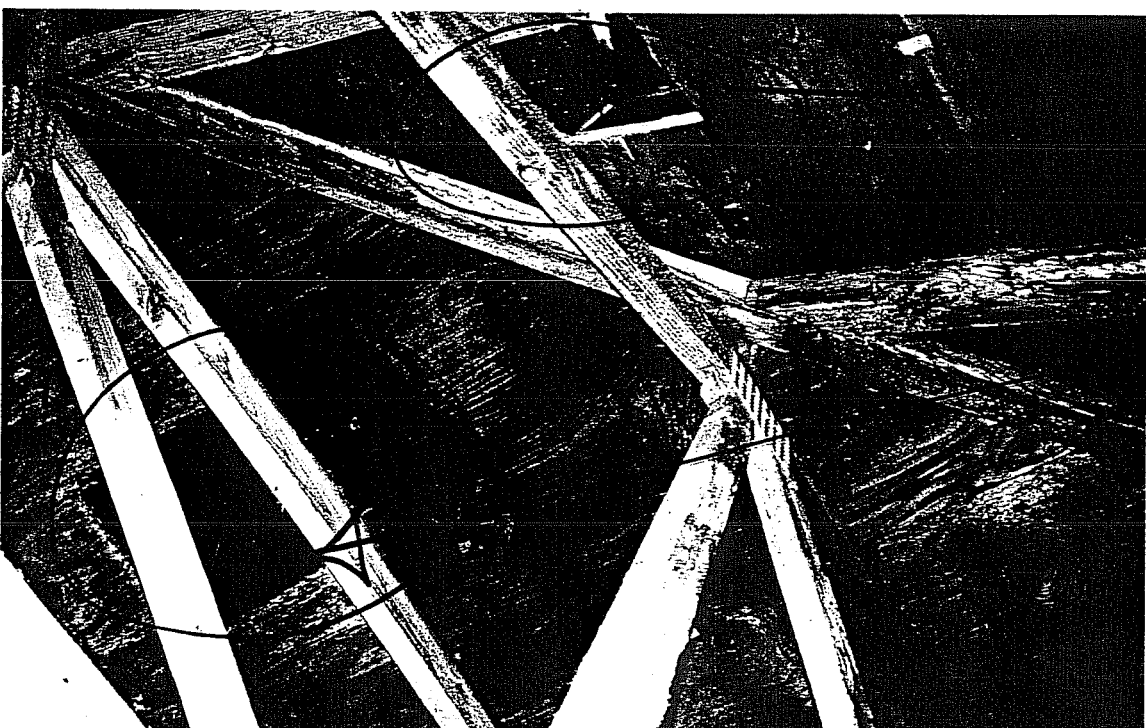
14



15

NOTE;
BEADS OF WATER
& FRESH SAWCUT
"NEWLY INSTALLED
VENTS"

CLOSE-UP
VIEW



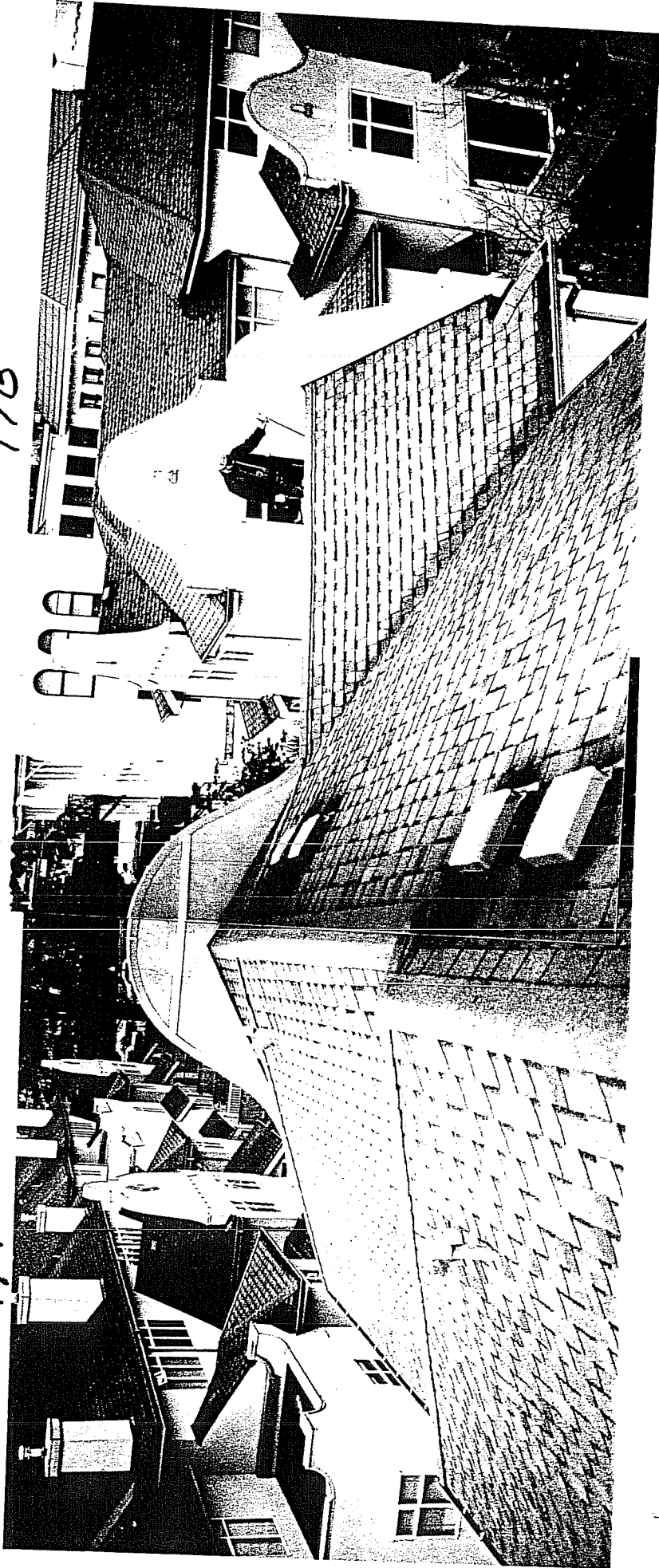
"OTHER" VENT
HAS "OLD"
SAWCUT

JOB # 01-448

16

17A

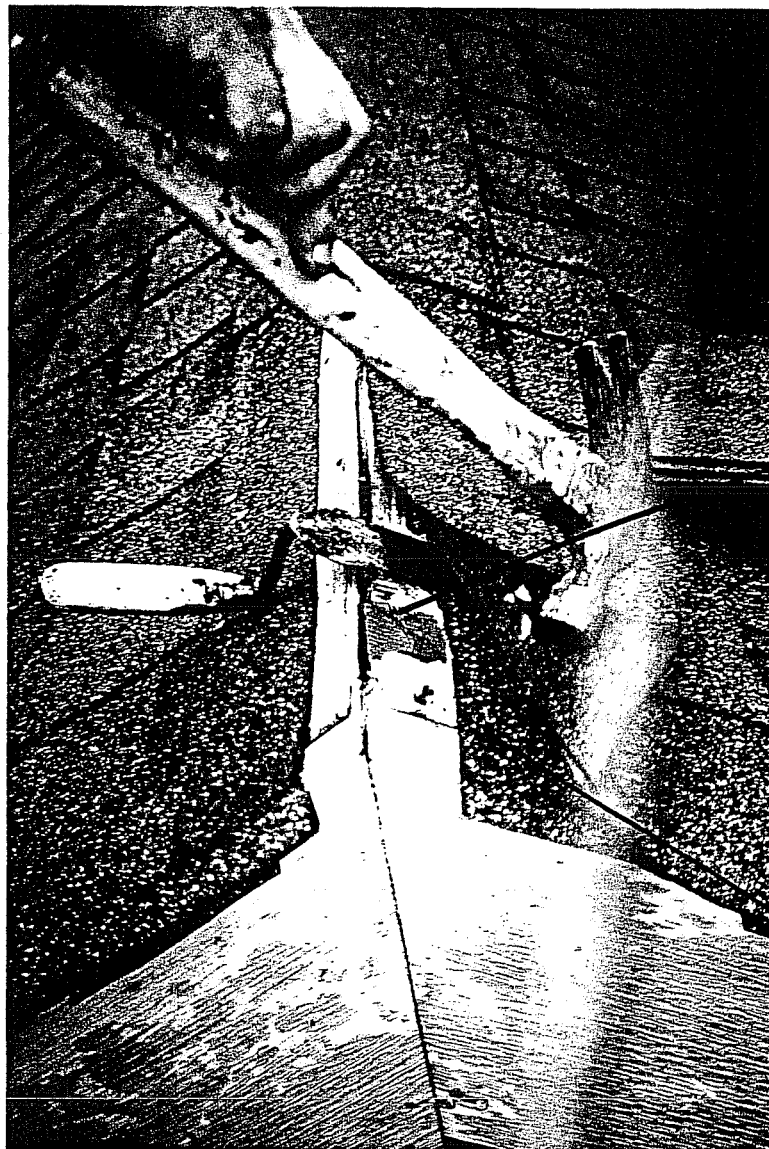
17B



WEST END OF SAME STRUCTURE
WITH UNITS # 43 & # 44

FOR TYPICAL DEFICIENCIES, SEE PHOTOS # 18 THROUGH # 28

18



NO "FELT"
UNDERLAY

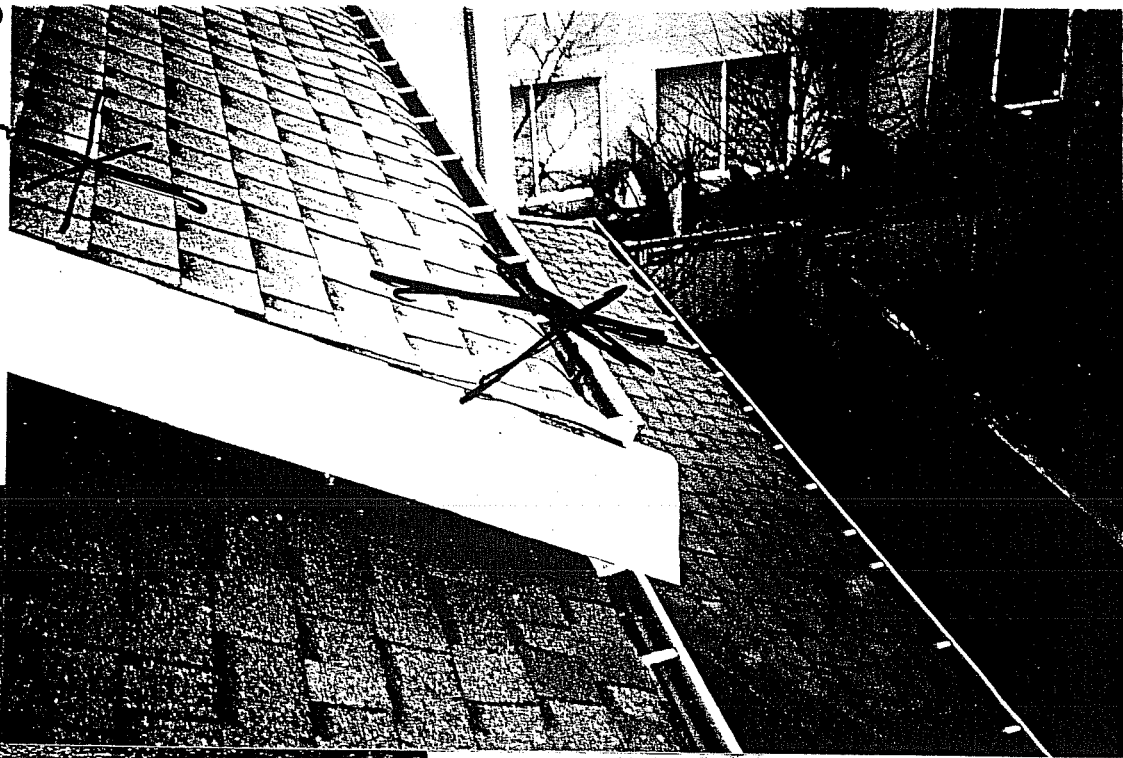
CLOSE-UP
OF



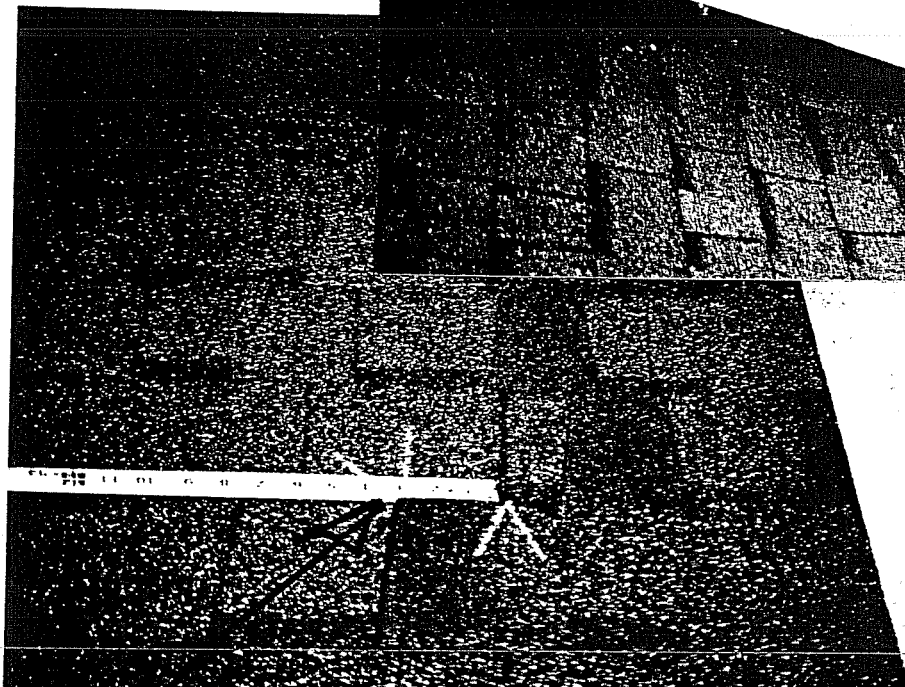
19

FELT
UNDERLAY
@ EAVES ONLY
1m +-.

20

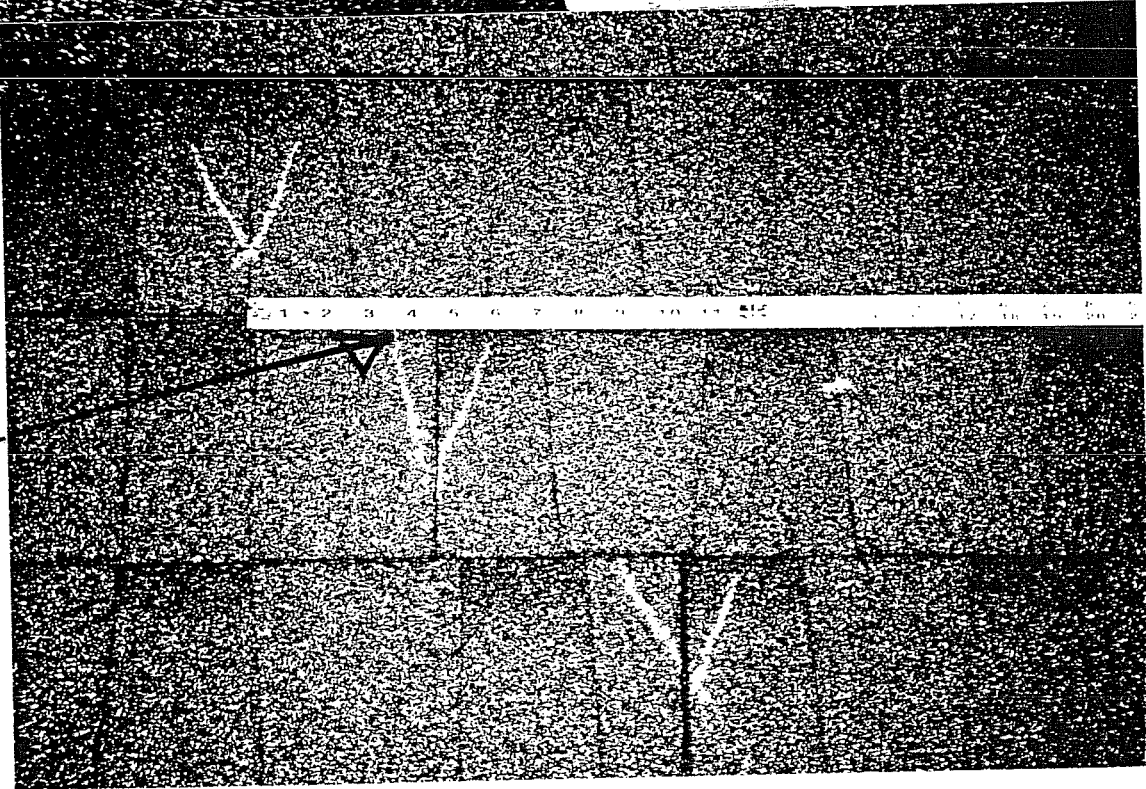


21

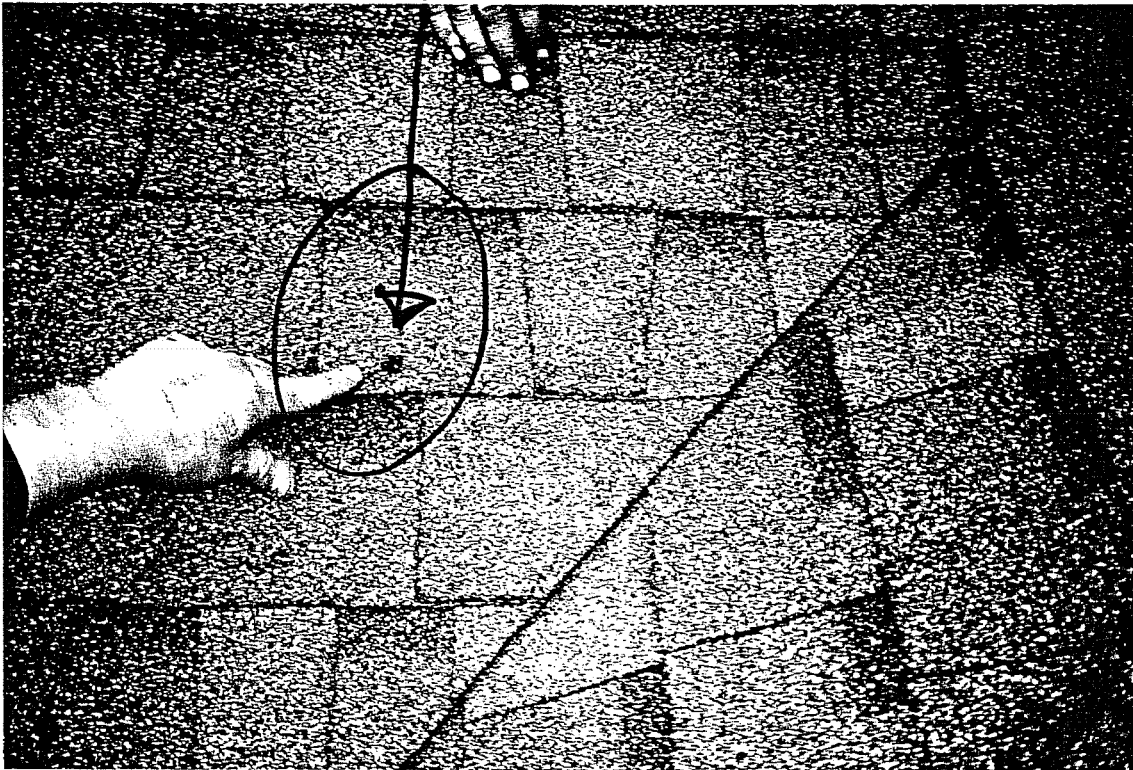


22

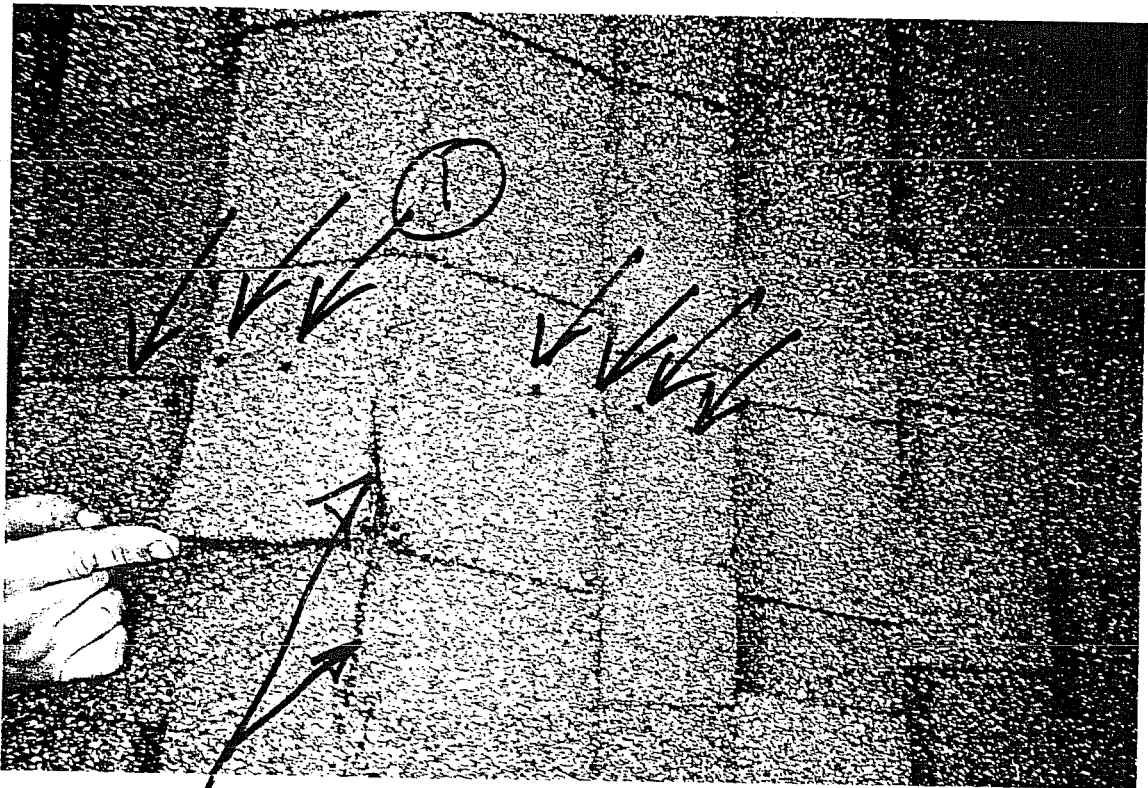
3" (INCH) SIDE LAPS
4 1/2" (INCH) SIDE LAPS



TYPICAL EXAMPLE OF NAIL
HEAD PENETRATING THROUGH
THE SHINGLES



23



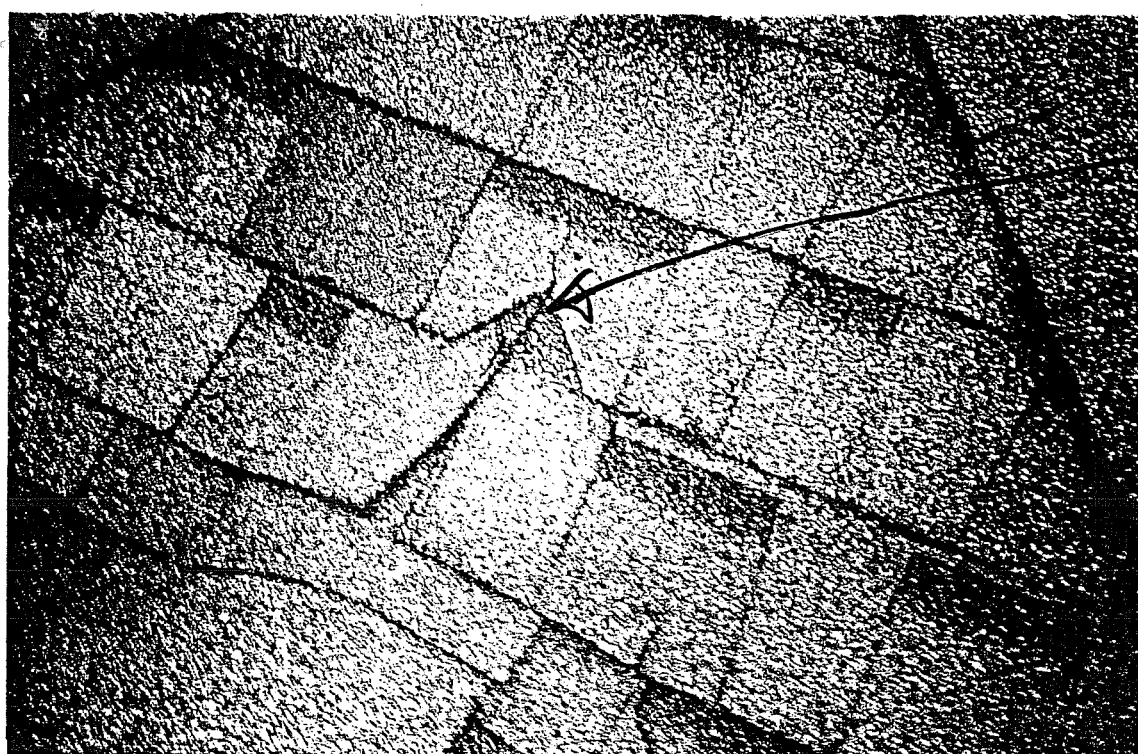
24

SPLIT & DAMAGED RIDGE CAP

① → NAIL HOLES LIKELY LEFT OVER WHEN
THEIR SECURITY LINE'S WERE NO
LONGER REQUIRED

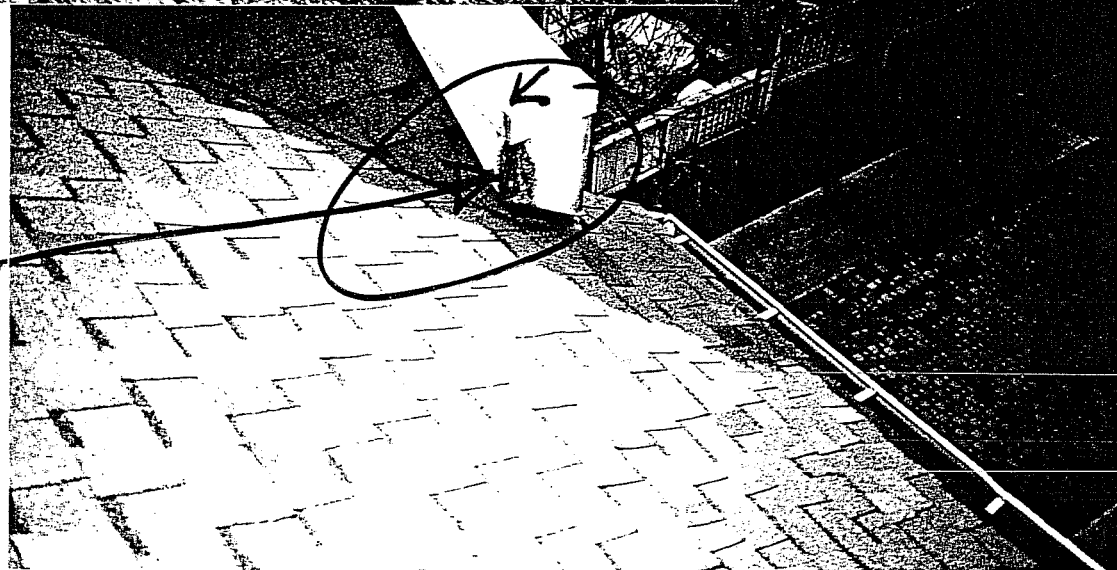
25

POORLY
INSTALLED
SPLIT RIDGE
CAP @ JUNCTION
TO SLOPED ROOF



26

WATER RUNOFF
RESULTING
IN STUCCO
DETERIORATION



27

(A) 6" (INCHES)
UNDER LAP
OF SHINGLE @
A VALLEY.
(B) NO "FELT" @
VALLEY



28A

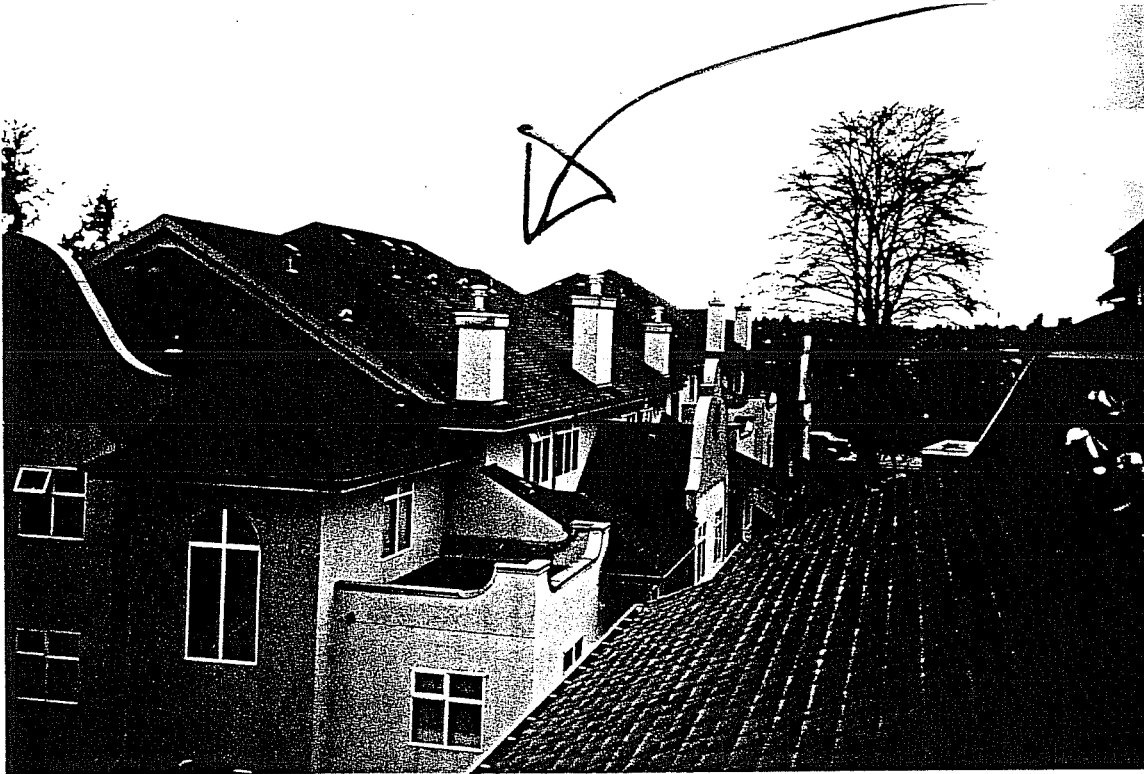
28C

DRYING STAIN
THROUGHOUT
ATTIC OF UNIT
43

SOFFET VENTILATION
LIKELY INSTALLED
AFTER CONST.

28B

LOCATION OF UNIT #57



UNIT #57 CEILING LEAK.

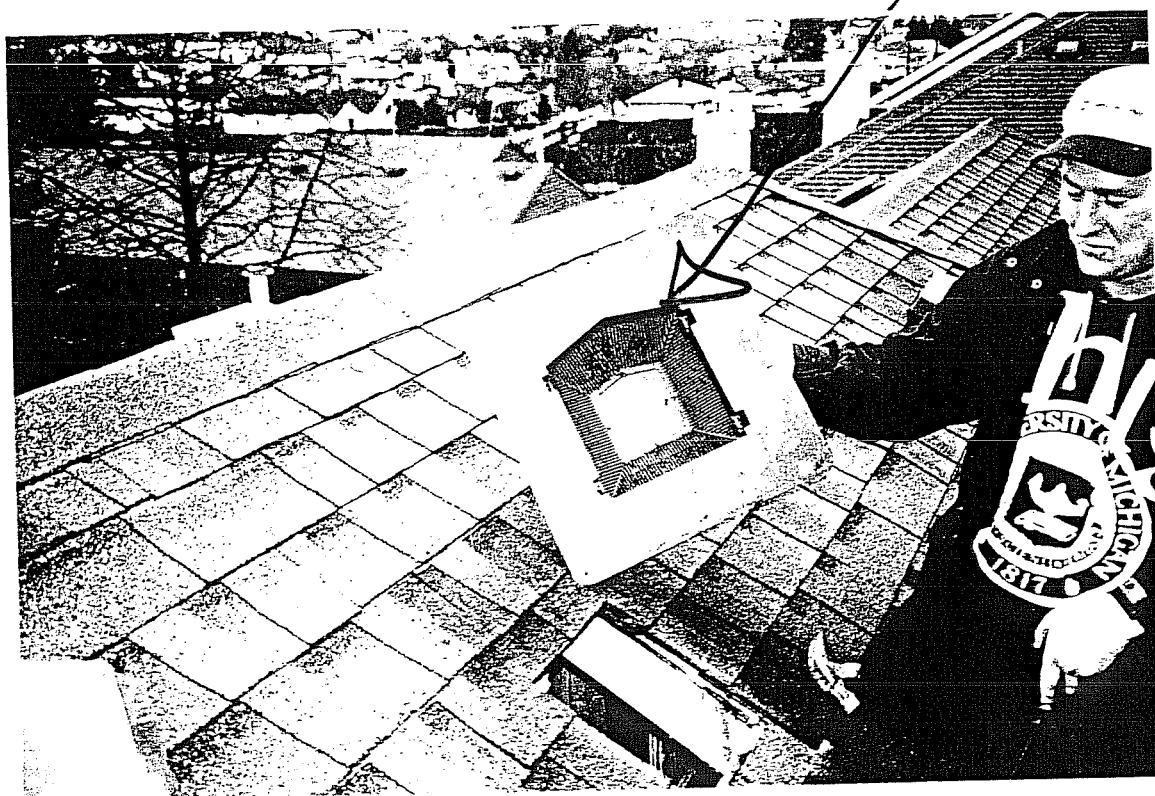




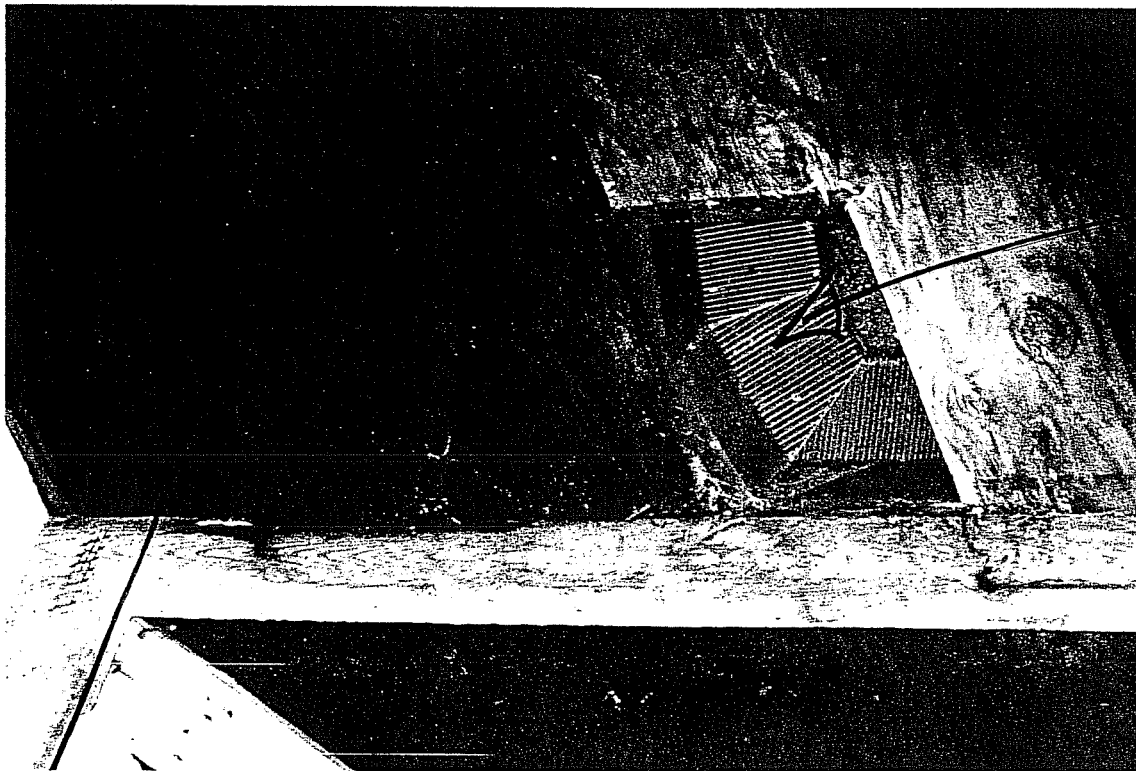
RUSTING
NAILS @
- BOTTOM of
VENTS only

31

VENT OVER CELLING LEAK.
(PHOTO # 30) & WATER DROPS ON
UNDERSIDE OF VENT



32



WET

33

UNDER SIDE OF VENT (PHOTO 32) PRIOR TO REMOVAL

MOISTURE STAINS

NO "FELT" UNDER LAY

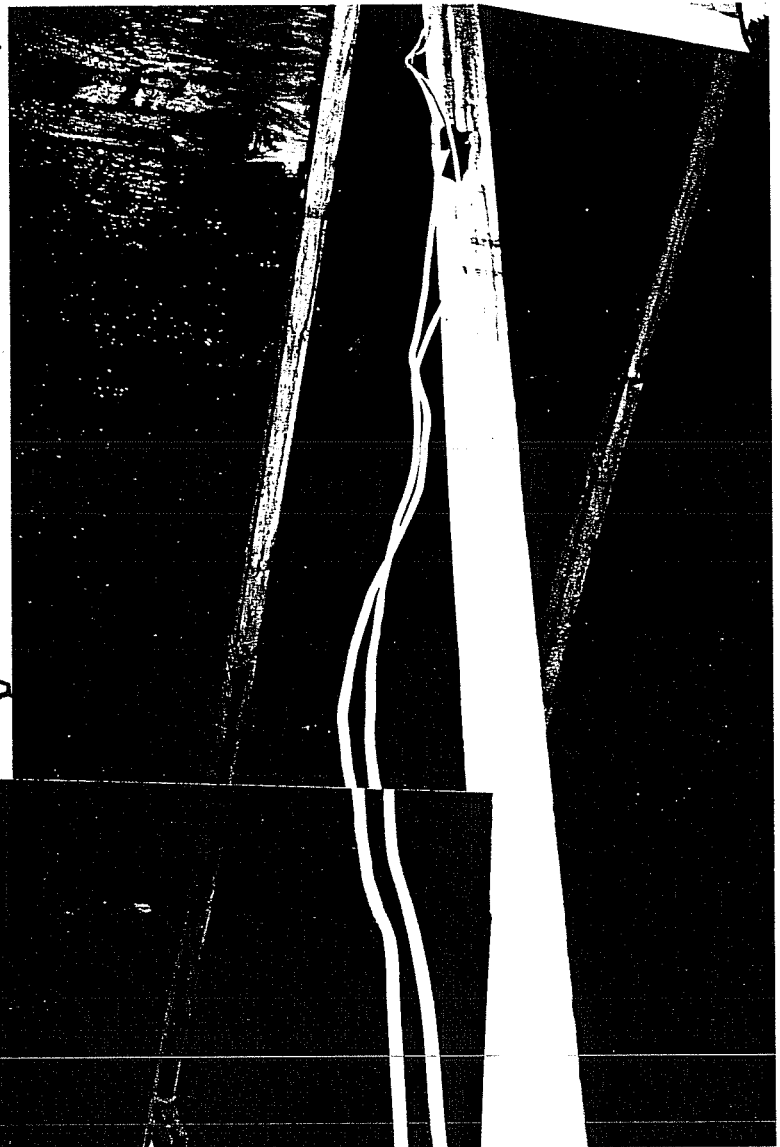


34

35A

UNIT #57
WATER SATURATED
UNDER SIDE OF
DECK

LOOSE ELECTRICAL
WIRING? →

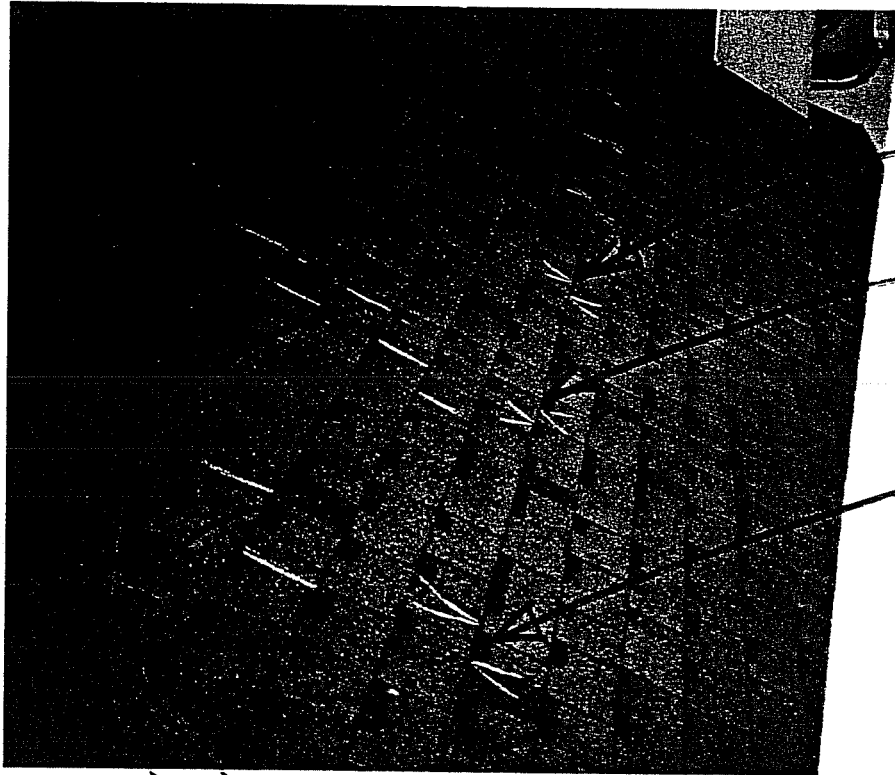


MINIMUM
SOFFIT
VENTILATION



35B

TYPICAL; UNIT 57 ROOF AREAS DEFICIENCIES
SEE PHOTOS # 36 THROUGH # 40



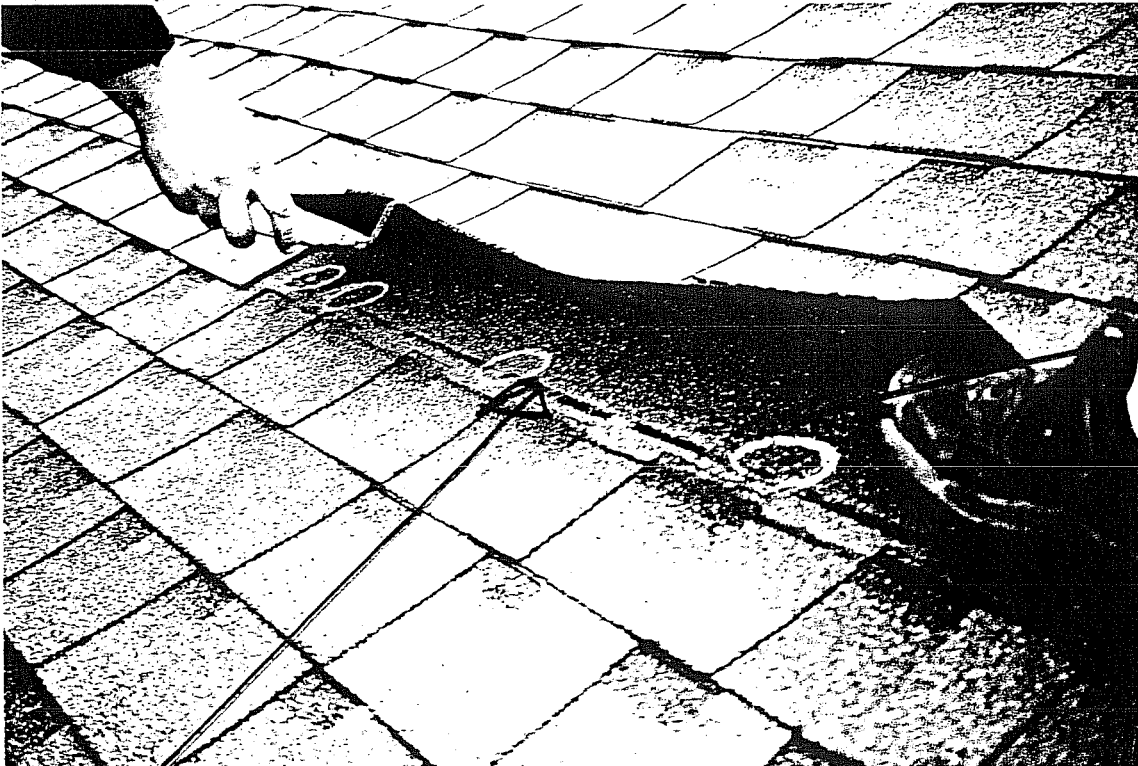
3" TO 4"
(INCHES)
END LAPS
SAME

SAME

36

6" (INCHES) ± END LAPS

(A) NAILS INSTALLED ABOVE SEALING STRIP



(B)
RUSTED
NAIL HEADS

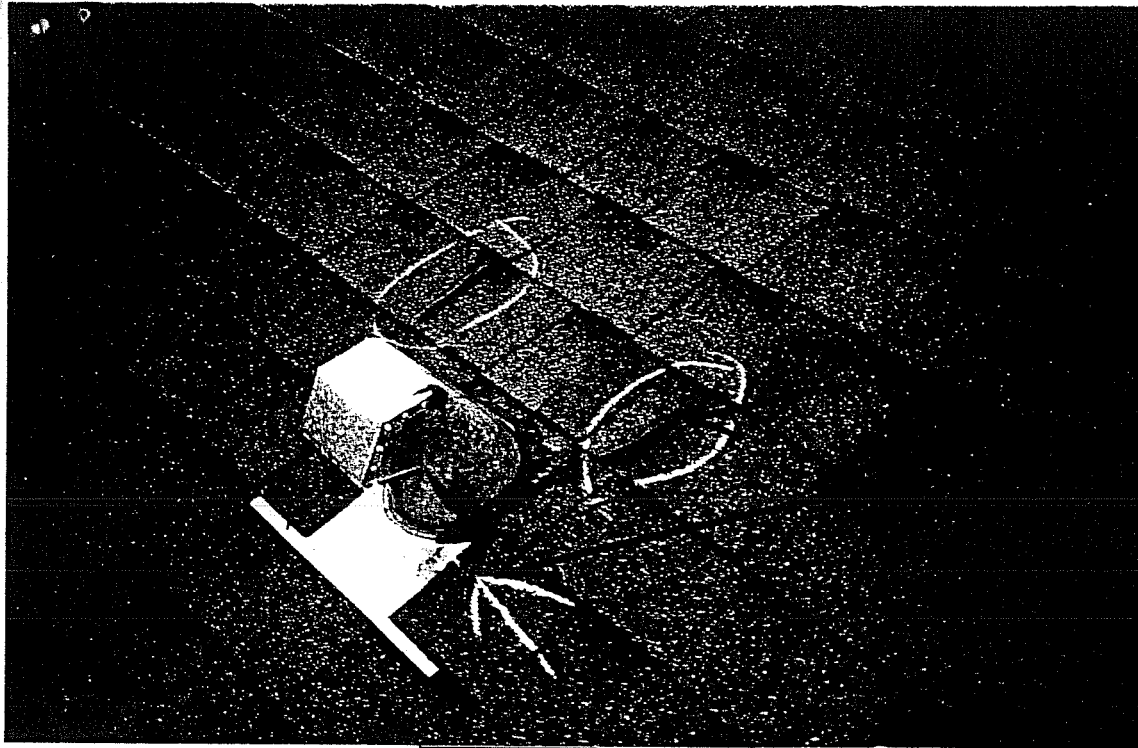
37

SELF ADHESIVE STRIP HAS
MINIMAL STRENGTH

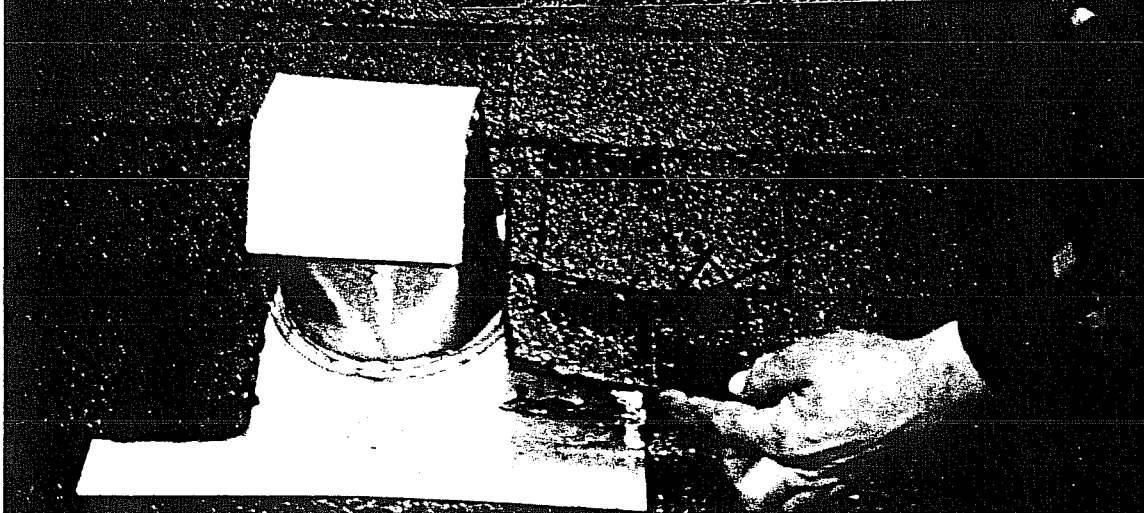
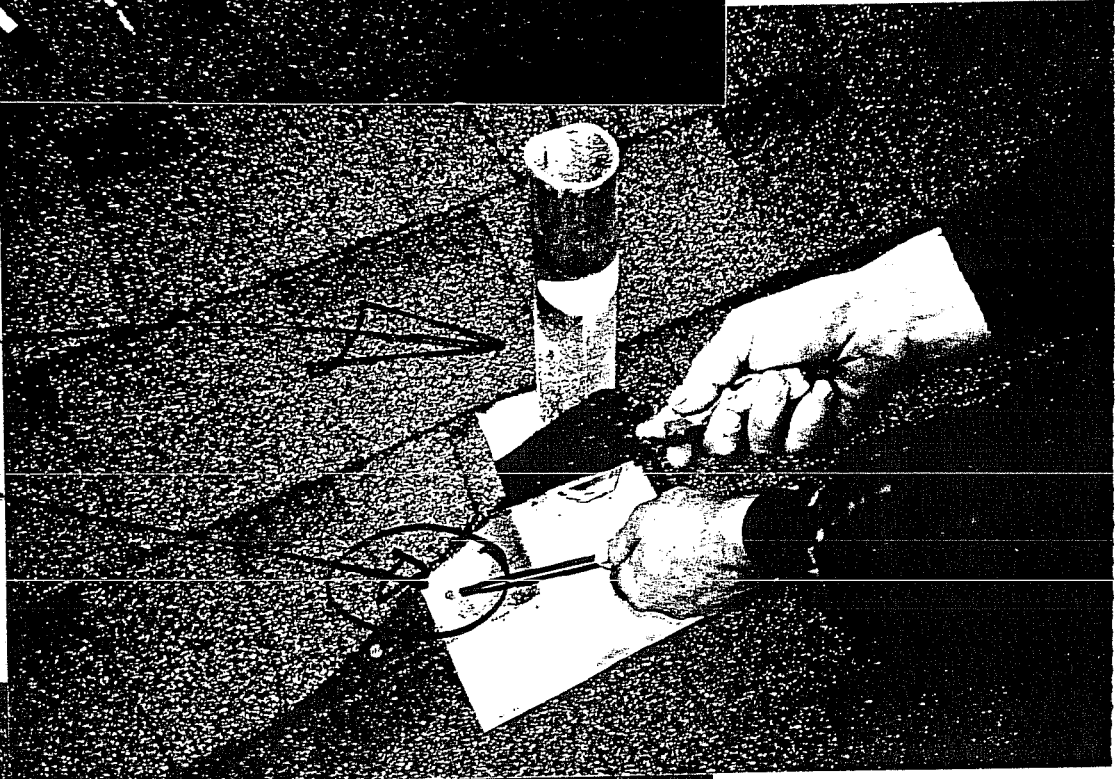
38

VERY POORLY
INSTALLED
VENT STACK
— MASTIC
— SAW CUT

39



CONDENSATION
ON INSIDE OF
PIPE, + LEAD NOT
CUT OFF, + NO
LEAD CAP —
LOW NAIL ON
VENT STACK
FLANGE



SHINGLES
SIDE LAP @
FLANGE EDGE
WITH CAULKING
"PATCH" UNDER
SHINGLE, VERY
POOR INSTALLATION

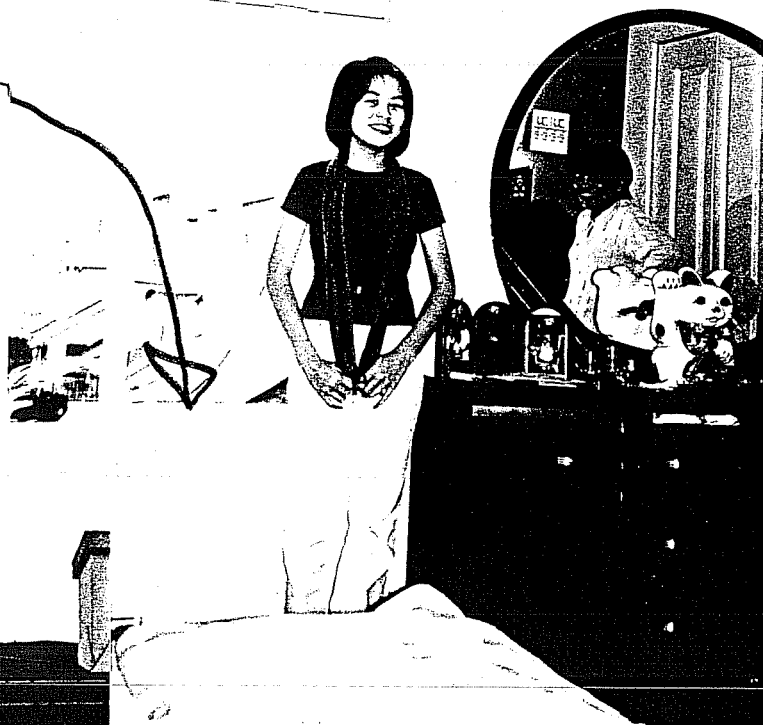
40

01-448

41

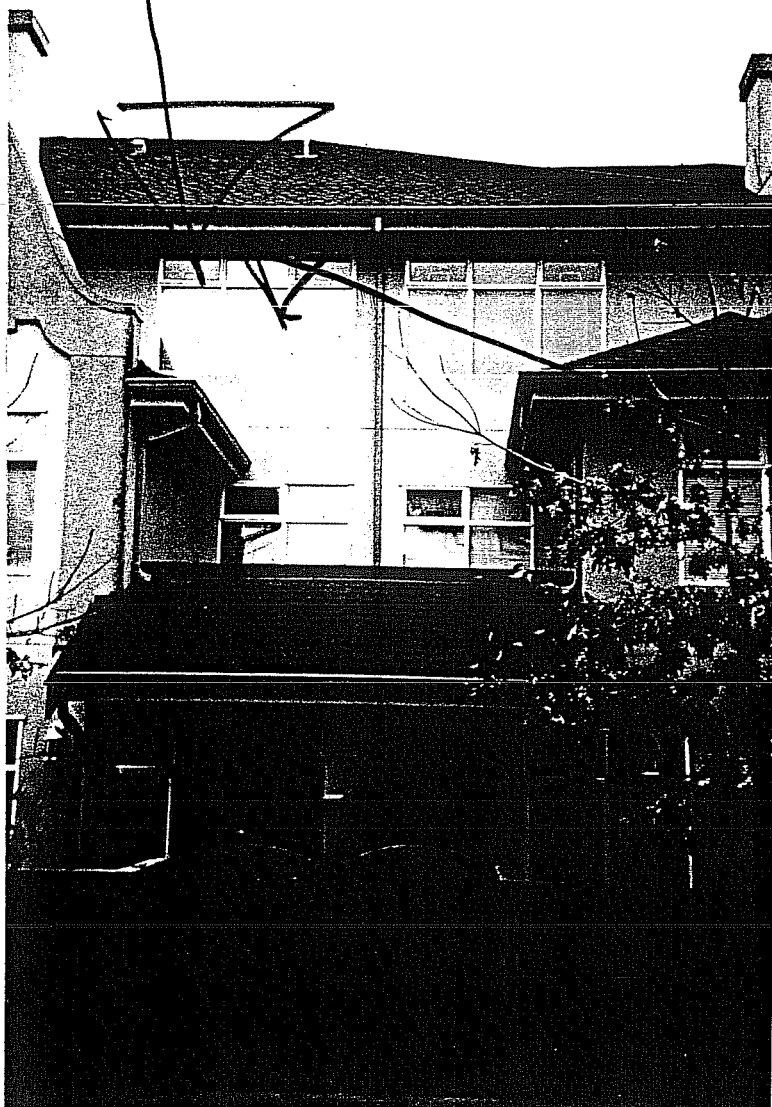
UNIT # 57

WINDOW STAINING

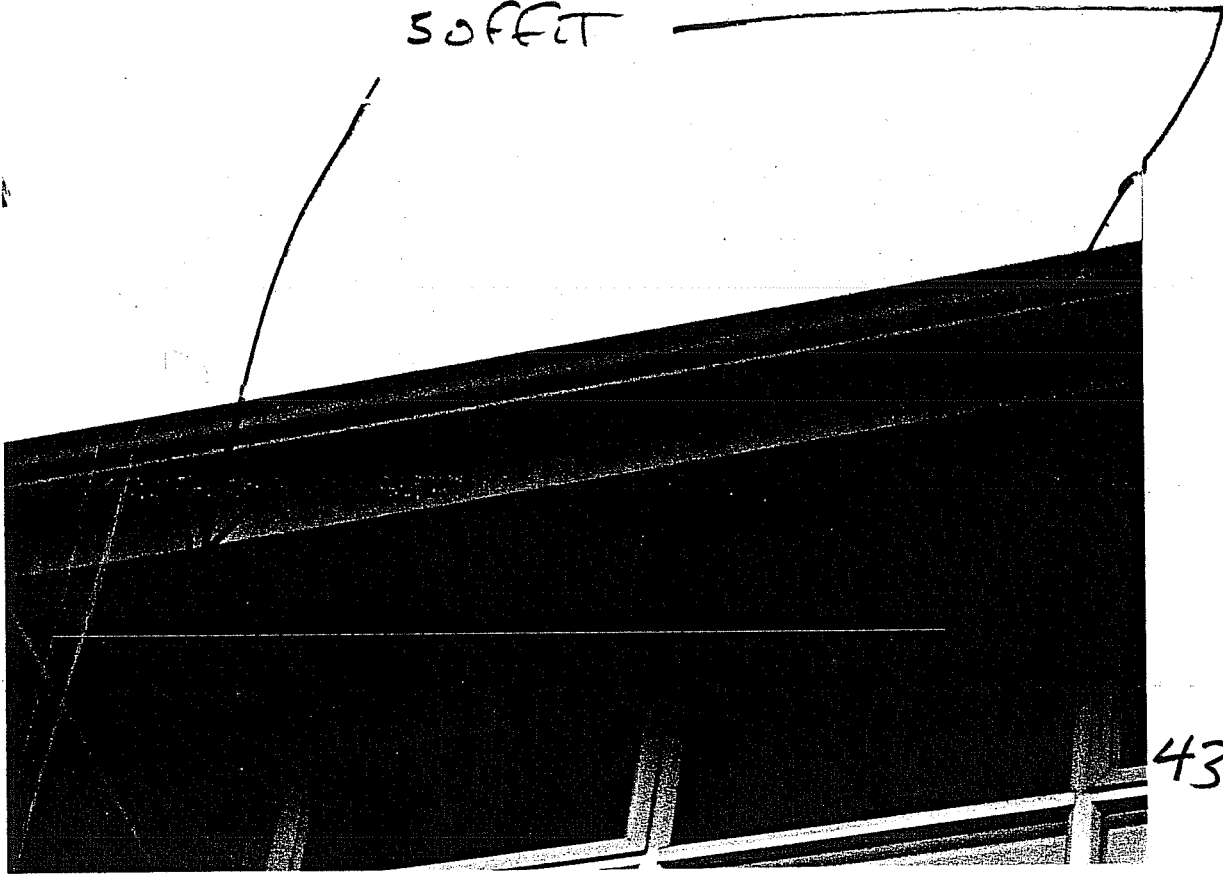


42

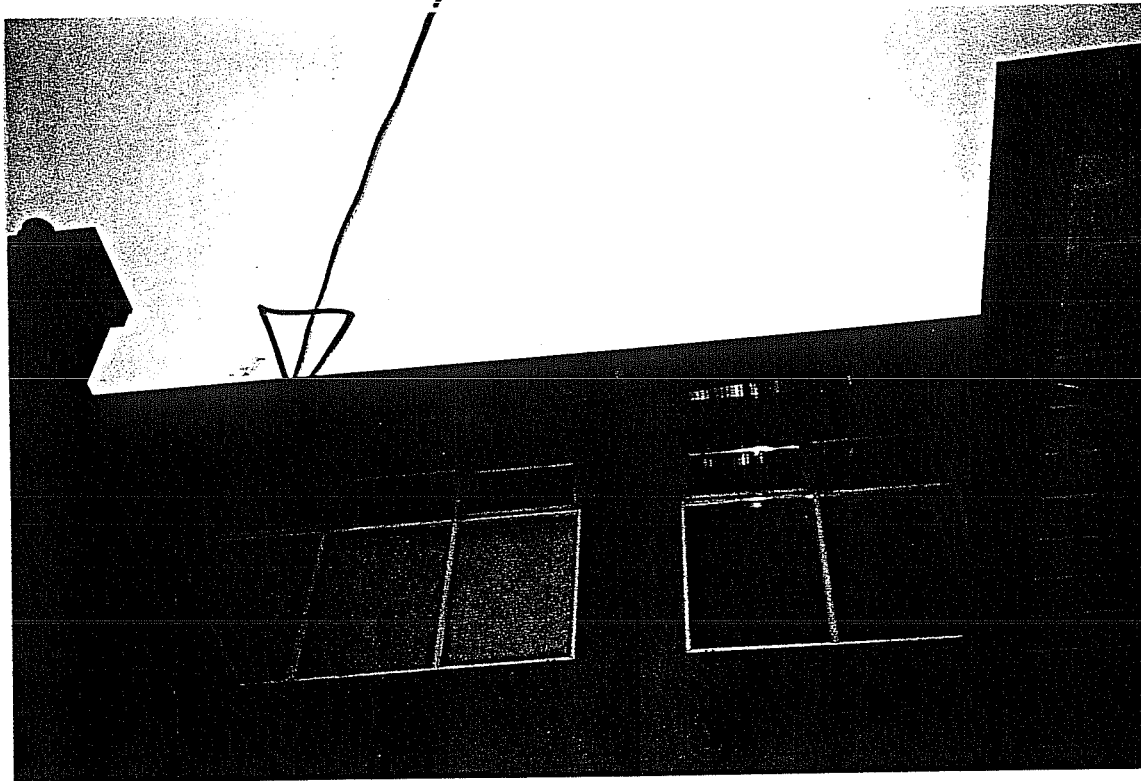
SEE PHOTOS
43 & #44



NOTE: ROUND PIPES. ABOUT
50 FEET



← CLOSE-UP
VIEW



— FOR A
TYPICAL "ATTIC"
VIEW SEE
PHOTO #9