Roof Inspection Report

Prepared for:

Mr. Greg Boettger
Bellevue Schools
&
Mr. Ralph Gladbach
GP Architecture, LLC.

Prepared by:

Roofing Solutions, Inc.
6728 W. 153rd Street
Overland Park, KS 66223

Project Location

Fairview Elementary
14110 Tregaron Drive
Bellevue, NE 68123

Facility: Fairview Elementary
14110 Tregaron Drive
Bellevue
Nebraska
68123
U.S.A.

Contact Name: Greg Boettger

Contact Telephone: (402) 293-5066 Ext:

Contact Fax: ( ) -

Date of Last Inspection: Mar 08, 2017

Type of building: School

Type of Neighborhood: Residential

Roof Section List

Photo	Section / Name / Year Installed	Size / Height	Roof Type	Condition Index/ *RCI/ ASLR(Yrs)	Estimated Replacement Value
	Roof A A 2000	70,118 sq. ft. 12 ft.	Asphalt Shingles	Fair 55 3(Yrs)	$385,649.00
	Roof B B 2000	4,215 sq. ft. 12 ft.	(EPDM) Ethylene-Propylene-Diene-Monomer Roofing	Fair 55 3(Yrs)	$42,150.00
		74,333			**$427,799.00**

*RCI Rating 0 -100 where 100 is excellent

Recommendation Summary

Section ID	Budget Year	Activity Type	Action Item ?	Allocation	Urgency	Budget Amount
Roof A	2017	Repair	Yes	Expense	Moderate	$1,500
Roof A	2020	Replacement	Yes	Capital	Moderate	$385,649
Roof B	2017	Repair	Yes	Expense	High	$3,500
Roof B	2020	Partial Tear-Off	Yes	Capital	Moderate	$42,150
						$432,799

Capital Budgets - 5 Years

Section ID	2017	2018	2019	2020	2021
Roof A	$0	$0	$0	$385,649	$0
Roof B	$0	$0	$0	$42,150	$0
	$0	**$0**	**$0**	**$427,799**	**$0**

Expense Budgets - 5 Years

Section ID	2017	2018	2019	2020	2021
Roof A	$1,500	$0	$0	$0	$0
Roof B	$3,500	$0	$0	$0	$0
	$5,000	**$0**	**$0**	**$0**	**$0**

Total Budgets - 5 Years

Section ID	2017	2018	2019	2020	2021
Roof A	$1,500	$0	$0	$385,649	$0
Roof B	$3,500	$0	$0	$42,150	$0
	$5,000	**$0**	**$0**	**$427,799**	**$0**

Roof Name: A

Roof Size: 70,118 sq. ft.

Est. replacement Cost: $ 385,649.00

Existing System Type: Asphalt Shingles

Year Installed: 2000

Assessed Service Life Remaining (Years) : 3

Height: 12 Ft.

Slope: 05:12

Interior Sensitivity: Normal

Drainage: Adequate

Currently Leaking? No

History of Leaking? Yes

Drainage and Leak Details: Roof Section A slopes to the eave edges and drains to an external guttering with downspouts that empty into an underground plumbing system.

No recent leaks were reported on this roof section at the time of inspection.

Existing Roof System Construction

Layer Type	Description	Method Of Attachment
Deck	OSB Board	Nailed
Underlayment	Ice & water shield	Cold Adhesive
Membrane	Shingles	Nailed

Overall Core Condition

Roofing layers were determined at an eave edge view. An under view of the structure revealed an OSB plywood decking with wood truss framing. There is one (1) layer of ice & water shield underlayment and a laminated, asphalt shingle membrane.

Core Photos

Photos	Date	Description
	Mar 08, 2017	Deck Underside
	Mar 08, 2017	Membrane

Overall Roof Inspection Assessments

Date	Inspection Type	Inspecting Company	Inspector
Mar 08, 2017	Phase 1 Roof Inspection	Roofing Solutions, Inc.	Garry Hendrickson

Roof Section A refers to the steep sloped, shingle roof system at the Fairview Elementary School. The roof is a seventeen (17) year old laminated shingle. The roof is a hip design with valleys at the offsets in the building. The valleys are flashed with a "W" metal valley flashing. The roof system has eave vents in the soffits with a vented ridge detail and attic vents on the south side of the building. There are also raised roof areas with louvers on the sides of the structures. The rake wall details are flashed with metal shingles. The roof system has metal roof areas between the valleys at the SE corner of the building. There are three (3) metal roof areas totaling approximately 950 square feet of total roof area, which is not included into the estimated square footage of the A roof area. The metal roof system is a prefinished metal roof panel with an interlocking lap. The end laps have a metal cover plate. The dents in the roof panels do not appear to be negatively effecting the performance of the roof system at this time. The roof panels should be replaced in conjunction with the A roof area.

Defects and conditions found during the inspection include the following:

- Random split shingles observed
- There are what appears to be hail dents on the metal roof areas
- Random broken shingles observed
- There is bowed up metal flashings

Overall, the roof system is in fair condition due to its age. With the aforementioned defects addressed, in addition to routine maintenance and regular inspection, the roof system should remain effective for the duration of its assessed service life, approximately three (3) years. There was no warranty information available for this roof section at the time of inspection.

Recommendations Details

Budget Year	Activity Type	Action Item ?	Allocation	Urgency	Quotation $
2017	Repair	Yes	Expense	Moderate	$1,500
RSI recommends repairs be completed in accordance with the attached deficiency list.					
2020	Replacement	Yes	Capital	Moderate	$385,649
RSI recommends a complete tear-off of existing roof system and the installation of a new twenty (20) year design life roof system. We further recommend the replacement of all perimeter coping cap and projection details per SMACNA Architectural Sheet Metal Manual.					
					$387,149

Roof Name: B

Roof Size: 4,215 sq. ft.

Est. replacement Cost: $ 42,150.00

Existing System Type: (EPDM) Ethylene-Propylene-Diene-Monomer Roofin

Year Installed: 2000

Assessed Service Life Remaining (Years) : 3

Height: 12 Ft.

Slope: Moderate

Interior Sensitivity: Normal

Drainage: Adequate

Currently Leaking? No

History of Leaking? Yes

Drainage and Leak Details: The B roof areas slope toward the valleys on the shingle roof areas with primary roof drains at the ends of the roof areas.

No active leaks were reported on this roof section at the time of inspection.

Existing Roof System Construction

Layer Type	Description	Method Of Attachment
Deck	OSB Board	Nailed
Insulation	Unknown	Mechanically Fastened
Membrane	EPDM	Cold Adhesive

Overall Core Condition

No core samples were taken on this roof section. Under views of the structure revealed an OSB plywood decking. There are unknown insulation layers. The membrane is a fully-adhered, .060 mil EPDM.

Overall Roof Inspection Assessments

Date	Inspection Type	Inspecting Company	Inspector
Mar 08, 2017	Phase 1 Roof Inspection	Roofing Solutions, Inc.	Garry Hendrickson

Roof Section B refers to the EPDM valley roofs at the Fairview Elementary School. The roof system is a seventeen (17) year old, fully-adhered EPDM. The roof section includes the B-1 thru B-5 roof areas. The EPDM membrane extends under the shingles on the sides of the areas. The drainage ends of the areas has the EPDM membrane adhered to the valley metal on the shingle roof areas.

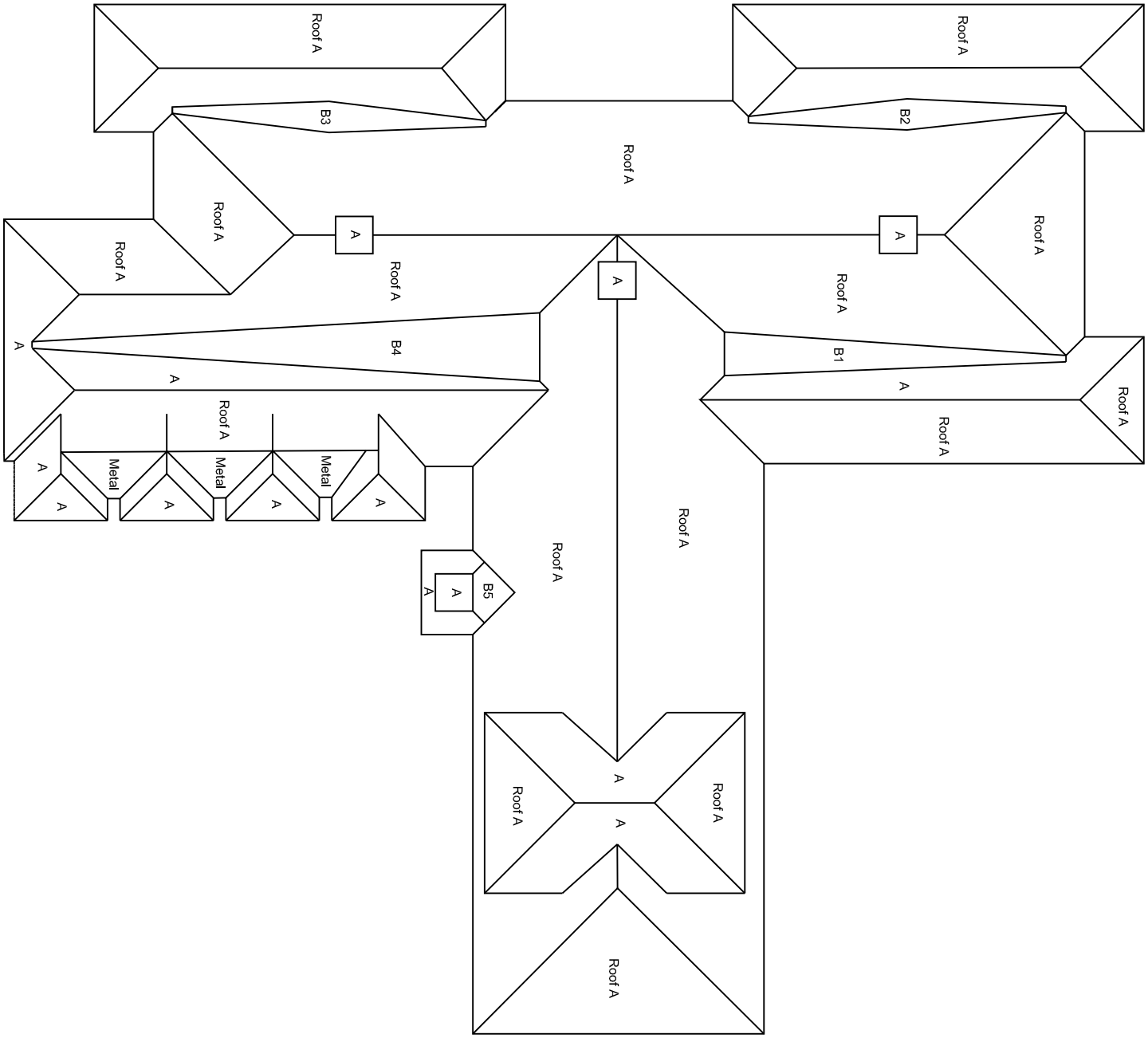
Defects and conditions found during the inspection include the following:

- Loose EPDM lap edges observed
- High anchors under the EPDM flashing on the B-1 roof area
- Previous repair attempts observed on the B-4 roof area

Overall, the roof system is in fair condition due to its age. With the aforementioned defects addressed, in addition to routine maintenance and regular inspection, the roof system should remain effective for the duration of its assessed service life, approximately three (3) years. There was no warranty information available for this roof section at the time of inspection.

Recommendations Details

Budget Year	Activity Type	Action Item ?	Allocation	Urgency	Quotation $
2017	Repair	Yes	Expense	High	$3,500
RSI recommends repairs be completed in accordance with the attached deficiency list.					
2020	Partial Tear-Off	Yes	Capital	Moderate	$42,150
RSI recommends a partial tear-off of the existing roof system, leaving the existing insulation in place, and installation of a new twenty (20) year design life roof system. We further recommend installation of new perimeter metal and projection details per SMACNA Architectural Sheet Metal Manual.					
					$45,650



DRAWING LEGEND

- DRAIN
- OVERFLOW SCUPPER
- HVAC UNIT
- CURB
- SATELLITE
- PITCH PAN
- FLUE
- PIPE
- SLEEPER
- SKYLIGHT
- EXHAUST FAN
- CONDENSER ON SLEEPERS
- DEFECT NOTE
- CONSTRUCTION NOTE
- N.I.C. NOT IN CONTRACT
- U.N.O. UNLESS NOTED OTHERWISE

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Fax: (913)-897-1499
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Project Name:
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Project Address:
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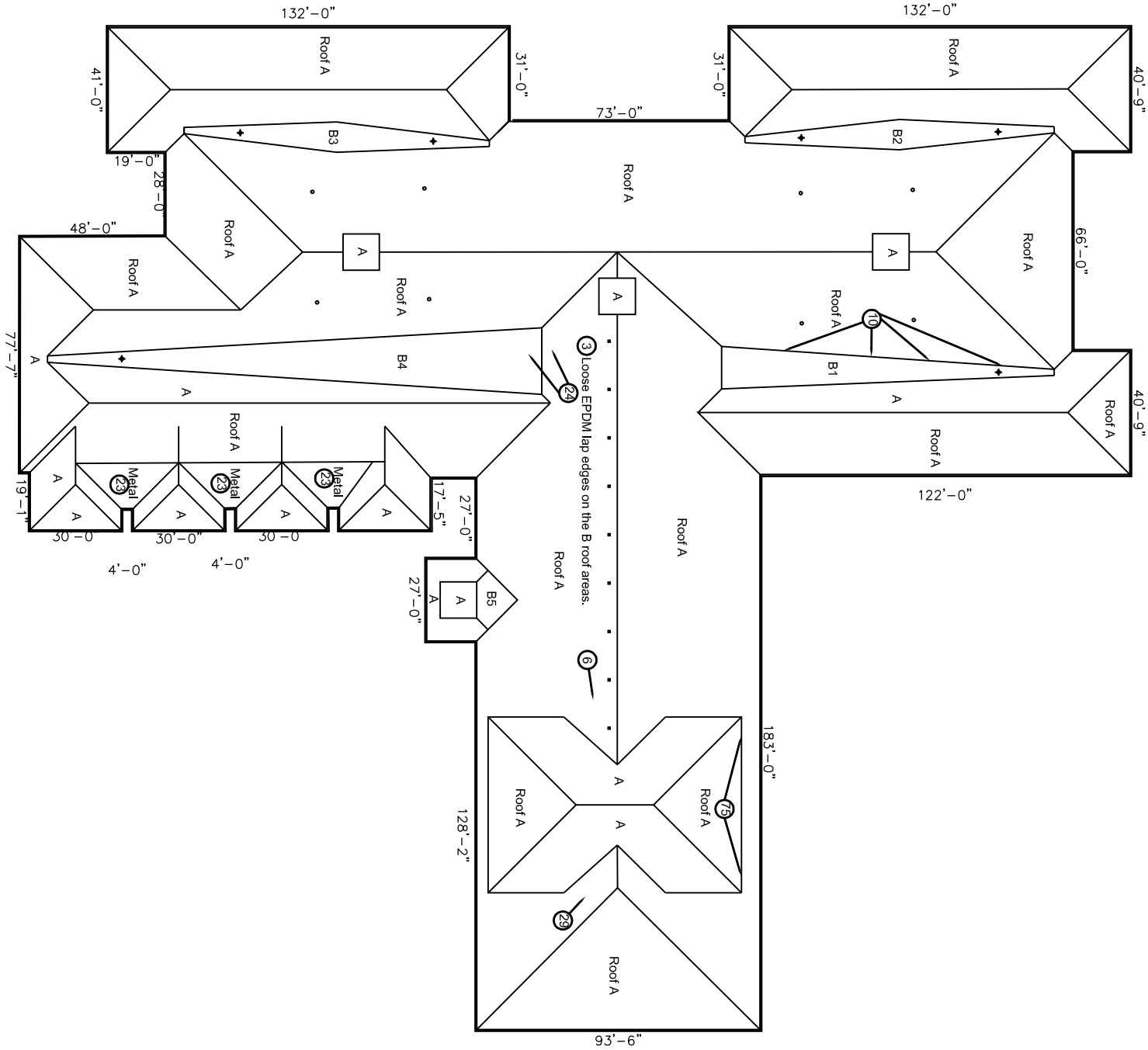
Sheet Number:	Date:	Drawn By:	Project Number:	Sheet Title:
01 of 01	03/08/2017	GH	00-000000	Site Plan



DRAWING LEGEND

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01 of 01	03/08/2017	GH	00-000000	A&B-Roof Plan

Deficiency Legend

Defect #	FIELD MEMBRANE AND ROOF SURFACE
1	Description: Deteriorated or missing sealant at counterflashing, termination bar, sealant lip, metal flashing, expansion joint, etc.
2	Description: Fishmouth in field or flashing seam.
3	Description: Open lap in field membrane.
4	Description: Dry lap edge.
5	Description: Buckling or ridging of membrane.
6	Description: Split in membrane.
7	Description: Wrinkle in membrane.
8	Description: Surface erosion.
9	Description: Membrane deterioration.
10	Description: Tented membrane at fastener.
11	Description: Blister in field membrane or flashing.
12	Description: Alligatoring of asphalt surfacing.
13	Description: Tar boils/blueberries.
14	Description: Displaced ballast.
15	Description: Ponding of water.
16	Description: Blocked drain, scupper, or downspout.
17	Description: Missing or damaged drain/scupper strainer
18	Description: Unadhered membrane or inadequate membrane attachment.
19	Description: Unadhered insulation or inadequate insulation attachment.
20	Description: Displaced insulation
21	Description: Loose walkway pad or deteriorated paver.
22	Description: Debris, trash, construction materials, HVAC equipment, filters, motors, etc. on roof surface.
23	Description: Physical damage to membrane including cuts, holes, tears, scrapes, scuffs, or abrasions.
24	Description: Evidence of past problem and previous repair.
25	Description: Membrane slippage
26	Description: Membrane shrinkage
27	Description: Missing or damaged membrane protection layer at sleeper, antenna, satellite sled, blocking, pipe stand, paver, etc.
28	Description: Reported leak location
29	Description: Missing, loose, or broken shingles
30	Description: Open or missing tile eave stop.
31	Description: Missing or open mortar joints at the ridge or hip.
32	Description: Broken or missing tile.
33	Description: Loose, displace, or unsecured tiles.

Deficiency Legend

Defect #	FLASHINGS AND PENETRATIONS
40	Description: Low flashing height.
41	Description: Missing or inadequate flashing attachment.
42	Description: Loose or unadhered flashings.
43	Description: Weathered and deteriorated flashing
44	Description: Bridged flashing
45	Description: Open flashing lap
46	Description: Split in flashing
47	Description: Racked flashings
48	Description: Missing termination
49	Description: Missing counterflashing
50	Description: Missing pipe flashing.
51	Description: Leaking or damaged gutters/downspouts.
52	Description: Missing rain cap, rain collar, or hood.
53	Description: Open lead flashing.
54	Description: Fallen or loose backer rod.
55	Description: Deteriorated or shrunken pitch pan filler.
56	Description: Abandoned and obsolete equipment.
57	Description: Expansion joint deficiencies.
58	Description: Inadequate or nonconforming membrane flashing detail.
	METALWORK AND MISCELLANEOUS
70	Description: Open joint in metal flashing.
71	Description: Open or missing joint cover.
72	Description: Signage penetration not sealed properly.
73	Description: Improper sheet metal detail.
74	Description: Inadequate coverage of metal flange.
75	Description: Inadequate attachment of metal flashings.
76	Description: Inadequate transition flashings.
77	Description: Grease or other contaminants exhausted or vented onto roof surface.
78	Description: Leaking or damaged gutters/downspouts.
79	Description: Cracks in walls.
80	Description: Broken, plugged, or disconnected condensate line.
81	Description: Displaced antenna, sign, bracing, support, strap, etc.
82	Description: Open or deteriorated wall joint.
83	Description: Efflorescence.
84	Description: Deck deflection
85	Description: Vegetation growth.
86	Description: Corrosion or rust
87	Description: Mechanical defect
88	Description: Skylight defect/cracked/deteriorated
89	Description: Missing wall covering or cladding materials.


FAIRVIEW ELEMENTARY


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