

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

Chap Elementary
1201 Gregg Road
Bellevue, NE 68005

Facility: Chap Elementary
1201 Gregg Road
Bellevue
Nebraska
68005
U.S.A.



Contact Name: Greg Boettger

Contact Telephone: (402) 293-5066 Ext:


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Date of Last Inspection: Mar 23, 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 1992	13,112 sq. ft. 12 ft.	Built-Up Asphalt Roofing	Poor 33 0(Yrs)	\$104,896.00
13,112					\$104,896.00
*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	Infrared Scan	Yes	Expense	High	\$2,500
Roof A	2017	Retrofit	Yes	Capital	High	\$104,896
						\$107,396

Capital Budgets - 5 Years

Section ID	2017	2018	2019	2020	2021
Roof A	\$104,896	\$0	\$0	\$0	\$0
	\$104,896	\$0	\$0	\$0	\$0

Expense Budgets - 5 Years

Section ID	2017	2018	2019	2020	2021
Roof A	\$2,500	\$0	\$0	\$0	\$0
	\$2,500	\$0	\$0	\$0	\$0

Total Budgets - 5 Years

Section ID	2017	2018	2019	2020	2021
Roof A	\$107,396	\$0	\$0	\$0	\$0
	\$107,396	\$0	\$0	\$0	\$0

Roof Name: A**Roof Size:** 13,112 sq. ft.**Est. replacement Cost:** \$ 104,896.00**Existing System Type:** Built-Up Asphalt Roofing**Year Installed:** 1992**Assessed Service Life Remaining (Years) :** 0**Height:** 12 Ft.**Slope:** 1/4" per ft.**Interior Sensitivity:** Normal**Drainage:** Adequate**Currently Leaking?** Yes**History of Leaking?** Yes

Drainage and Leak Details: The A roof areas slope to the perimeter and drain to scuppers in the water dam edge metal detail. The scuppers have collection boxes with downspouts that empty at ground level. The raised A-2 roof area scupper empties onto the lower A-1 roof area.

Active leaks were reported over the office, music roof and other scattered areas.





Existing Roof System Construction

Layer Type	Description	Method Of Attachment
Deck	Metal	Spot Attached
Insulation	Polyisocyanurate	Mechanically Fastened
Cover board	Fiberboard - .5" (1/2")	Hot Asphalt
Membrane	BUR - Multiply	Hot Asphalt
Surfacing	Gravel	Hot Asphalt

Overall Core Condition

One (1) core sample was taken on the A-1 roof area. The deck is a steel decking. The insulation consists of one (1) layer of 2" polyisocyanurate insulation board and one (1) layer of 1/2" wood fiber cover board. The membrane is a multiply BUR with a gravel surface. An under view of the A-2 roof area revealed a steel decking and the roof system appears to be the same type and age of the A-1 roof area.

Core Photos

Photos	Date	Description
	Mar 23, 2017	Deck Underside
	Mar 23, 2017	Roof System Core

Overall Roof Inspection Assessments

Date	Inspection Type	Inspecting Company	Inspector
Mar 23, 2017	Phase 1 Roof Inspection	Roofing Solutions, Inc.	Garry Hendrickson

Roof Section A refers to the low slope roof system over the Chap Elementary School facility. The roof section includes the A-1 roof (main area) and raised A-2 roof (Multi-Purpose Room). The roof system is an approximately twenty-five (25) year old BUR with a gravel surface. The perimeter sides of the roof area consist of a flat roof edge detail which terminates with a water dam type of metal roof edging. The internal walls are flashed with a BUR type of membrane flashing which extends under a surface mounted counter flashing.

Defects and conditions found during the inspection include the following:

- Previous roof mastic repair attempts observed to the BUR system
- The BUR membrane is separating from the perimeter edge metal detail
- Split BUR flashings observed at scupper and corner flashing locations
- The BUR wall flashings are racked at the corners
- The expansion joint material is deteriorated and splitting
- The incoming electrical service line is sagging onto the roof system

Overall, the roof system is in poor condition due to its age, observed defects and the deteriorated nature of the roof system. Given the observed conditions, it is our opinion comprehensive repairs in an effort to extend the life of the system would be neither feasible nor cost effective. We recommend the roof be replaced, pending the outcome of an infrared scan. 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	Infrared Scan	Yes	Expense	High	\$2,500
RSI recommends an infrared scan be performed to locate any wet insulation present in the current roof system.					
2017	Retrofit	Yes	Capital	High	\$104,896
RSI recommends the installation of a new twenty (20) year design life retrofit roof system. We further recommend installation of new perimeter metal and projection details per the SMACNA Architectural Sheet Metal Manual.					
					\$107,396

Photos and Deficiencies



Defect Code:	24	Quantity:	Random	Priority:	Monitor
Description: Evidence of past problem and previous repair.					
Repair: Investigate for chronic leak problems and repair any areas that are suspect.					



Defect Code:	46	Quantity:	Numerous	Priority:	First Year
Description: Split in flashing					
Repair: Cut away loose flashing and clean and prime repair area. Apply strip in of like material centered over split extending a minimum of 4" in all directions past prepared area.					



Defect Code:	46	Quantity:	Numerous	Priority:	Monitor
Description: Split in flashing					
Repair: Cut away loose flashing and clean and prime repair area. Apply strip in of like material centered over split extending a minimum of 4" in all directions past prepared area.					



Defect Code:	47	Quantity:	Random	Priority:	Monitor
Description: Racked flashings					
Repair: Monitor flashings and repair when identified as deteriorated.					

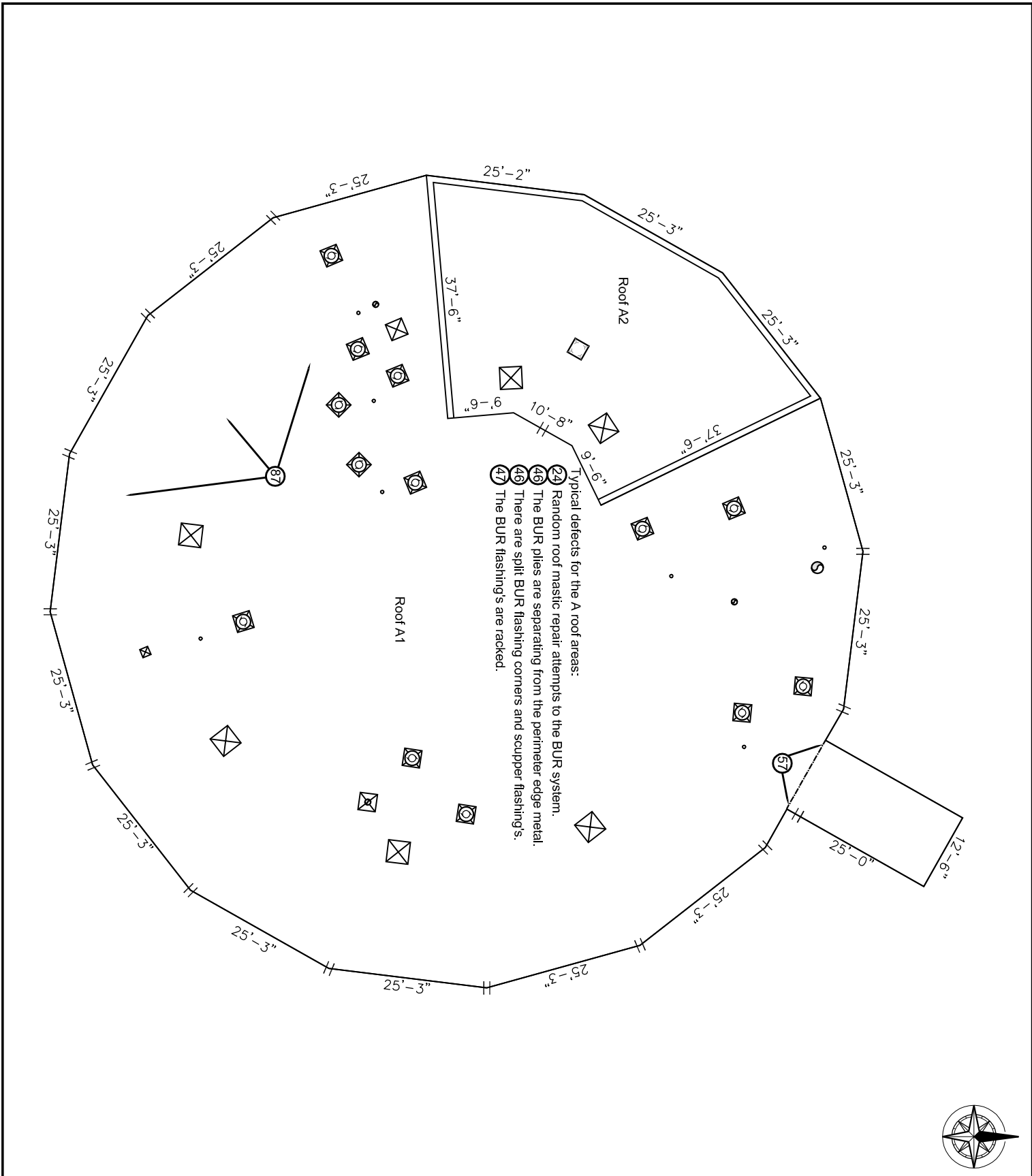
Photos and Deficiencies



Defect Code:	57	Quantity:	Widespread	Priority:	Monitor
Description: Expansion joint deficiencies.					
Repair: Repair defects in rubber expansion joint or joint covers with two layers of flashing with the second layer being 3" larger in all directions than the first. Install flashing with manufacturer's recommended cleaners and primers.					



Defect Code:	87	Quantity:	1	Priority:	First Year
Description: Mechanical defect					
Repair: Repair mechanical defect. Replace or reinstall missing access doors and panels. Reseal rooftop unit, pans, ducts, curbs, etc.					



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Project Name:
Chap Elementary School

Project Address:
**1201 Gregg Road
 Bellevue, NE 68005**

- 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

Sheet Number:
01 of 01

Date:
03/23/2017

Drawn By:
 GH

Project Number:
#17-7637

Sheet Title:
A-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.

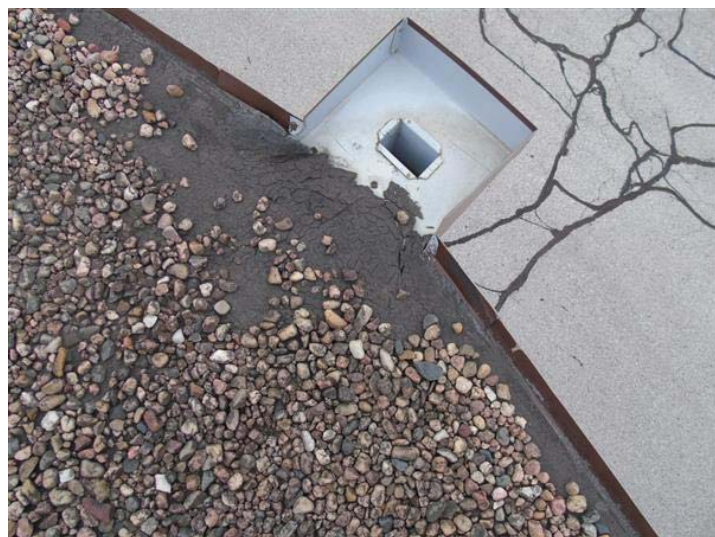
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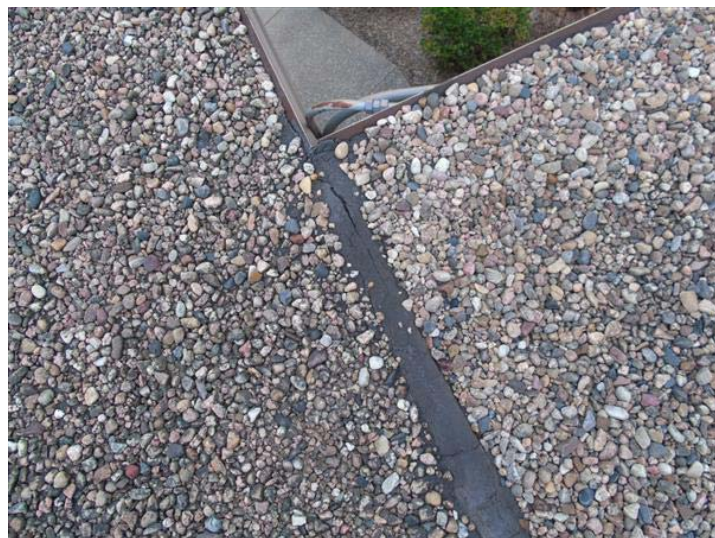
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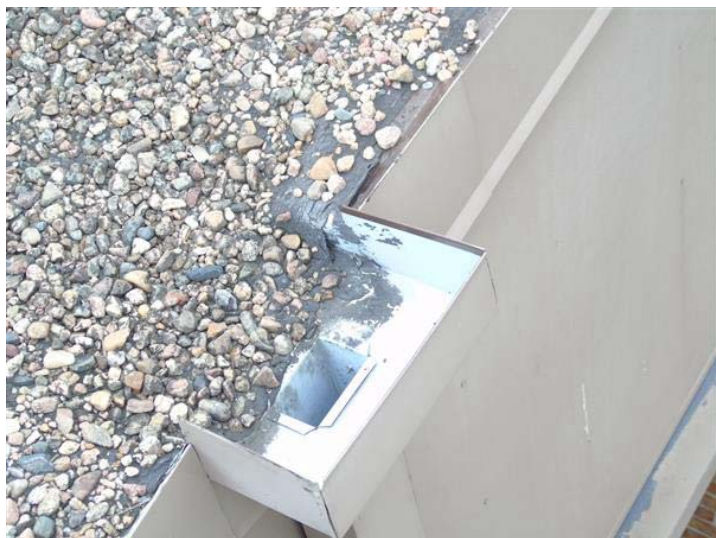
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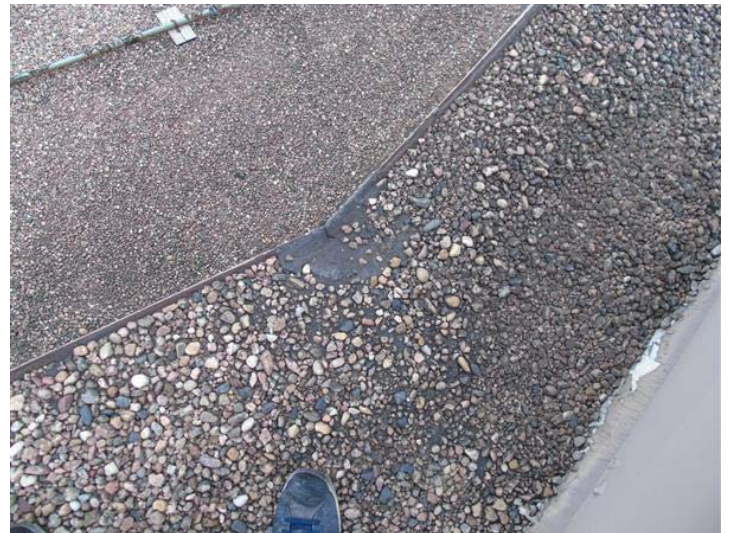
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