

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

Leonard Lawrence Elementary
13204 S. 29th Street
Bellevue, NE 68123

Facility: Leonard Lawrence Elementary
13204 S. 29th Street
Bellevue
Nebraska
68123
U.S.A.



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Date of Last Inspection: Feb 28, 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 2001	20,090 sq. ft. 12 ft.	Built-Up Asphalt Roofing	Poor 33 0(Yrs)	\$200,900.00
	Roof B B 2001	29,090 sq. ft. 8 ft.	Asphalt Shingles	Poor 33 0(Yrs)	\$174,540.00
	Roof C C 2010	3,000 sq. ft. 16 ft.	(SBS) Modified Bituminous Membrane Roofing	Good 75 11(Yrs)	\$30,000.00

Roof Section List Continued...

Photo	Section / Name / Year Installed	Size / Height	Roof Type	Condition Index/ *RCI/ ASLR(Yrs)	Estimated Replacement Value
	Roof D D 2001	4,582 sq. ft. 28 ft.	Built-Up Asphalt Roofing	Poor 40 2(Yrs)	\$45,820.00
56,762					\$451,260.00
*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	Retrofit	Yes	Capital	High	\$200,900
Roof A	2017	Infrared Scan	Yes	Expense	High	\$2,000
Roof B	2017	Replacement	Yes	Capital	High	\$174,540
Roof C	2017	Repair	Yes	Expense	High	\$750
Roof D	2017	No Action	No	N/A	N/A	\$0
Roof D	2019	Infrared Scan	Yes	Expense	High	\$500
Roof D	2019	Retrofit	Yes	Capital	High	\$45,820
\$424,510						

Capital Budgets - 5 Years

Section ID	2017	2018	2019	2020	2021
Roof A	\$200,900	\$0	\$0	\$0	\$0
Roof B	\$174,540	\$0	\$0	\$0	\$0
Roof D	\$0	\$0	\$45,820	\$0	\$0

	\$375,440	\$0	\$45,820	\$0	\$0
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Expense Budgets - 5 Years

Section ID	2017	2018	2019	2020	2021
Roof A	\$2,000	\$0	\$0	\$0	\$0
Roof C	\$750	\$0	\$0	\$0	\$0
Roof D	\$0	\$0	\$500	\$0	\$0
	\$2,750	\$0	\$500	\$0	\$0

Total Budgets - 5 Years

Section ID	2017	2018	2019	2020	2021
Roof A	\$202,900	\$0	\$0	\$0	\$0
Roof B	\$174,540	\$0	\$0	\$0	\$0
Roof C	\$750	\$0	\$0	\$0	\$0
Roof D	\$0	\$0	\$46,320	\$0	\$0
	\$378,190	\$0	\$46,320	\$0	\$0

Roof Name: A**Roof Size:** 20,090 sq. ft.**Est. replacement Cost:** \$ 200,900.00**Existing System Type:** Built-Up Asphalt Roofing**Year Installed:** 2001**Assessed Service Life
Remaining (Years) :** 0**Height:** 12 Ft.**Slope:** 1/8" per ft.**Interior Sensitivity:** Normal**Drainage:** Adequate**Currently Leaking?** Yes**History of Leaking?** Yes

**Drainage and Leak
Details:** Roof Section A slopes from a central ridge line towards the north and south and drains to six (6) primary roof drains. There are also two (2) valley areas which drain to scuppers and an additional scupper on the north side, by the main entry to the facility.

RSI's contact for this facility reported scattered active leaks, most of which were reported to be below this roof section.






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

Two (2) core samples were taken to verify the roofing layers in place. The deck is a factory primed steel decking at both core locations. Core # 1 revealed multiple layers of polyisocyanurate insulation board, which appear to be part of a tapered insulation system or tapered crickets, one (1) layer 1/2" wood fiber cover board and the membrane is a multiply BUR with a gravel surface. Core # 2 revealed one (1) layer of 2.5" polyisocyanurate insulation board, 1/2" wood fiber cover board and a multiply BUR with a gravel surface.

Core Photos

Photos	Date	Description
	Feb 28, 2017	Deck Underside
	Feb 28, 2017	Core cut #1
	Feb 28, 2017	Core cut #2

Overall Roof Inspection Assessments

Date	Inspection Type	Inspecting Company	Inspector
Feb 28, 2017	Phase 1 Roof Inspection	Roofing Solutions, Inc.	Garry Hendrickson

Roof Section A refers to the low slope roof system over the main corridors, access to the pod areas and the office area at the Leonard Lawrence Elementary School. The roof is a sixteen (16) year old BUR with a gravel surface. The perimeter walls are flashed with a BUR membrane flashing which has been coated with an aluminum paint. The common wall with the raised gym (Roof D) has the membrane flashing extending under a surface mounted counter flashing. The exterior walls are covered with the same type of BUR flashing and the walls are topped with a metal coping cap. The internal walls are flashed in the same manner as the other walls where the membrane flashing extends under a metal wall panel. The common sides with the shingle roofing system has the membrane flashing extending under the shingles.

Defects and conditions found during the inspection include the following:

- Deteriorated or split caulking observed on top of the perimeter wall counter flashing and in the brick wall expansion joints
- Random areas with surface loss of the gravel roof surfacing
- Caulking repair attempts observed to the window seals
- One (1) repair attempt to a crack in the gym brick wall
- Numerous areas with repair attempts to the BUR system
- Random areas with low flashing height
- Split BUR flashing corners observed
- The BUR flashings are wrinkled and/or racked at the corners
- One (1) loose vent cover observed
- Poor transition flashings on the bottom ends of the shingle roof areas
- Deteriorating seals observed on the windows installed above the roof system

Overall, the roof system is in poor condition due to reported leak issues and above referenced defects. 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.

Please Note: Due to extensive past repair attempts and reported past leak issues at this facility, this roof system may have to be completely removed, which could significantly increase the estimated replacement cost for this roof section.

Recommendations Details

Budget Year	Activity Type	Action Item ?	Allocation	Urgency	Quotation \$
2017	Infrared Scan	Yes	Expense	High	\$2,000
RSI recommends an infrared scan be performed to locate any wet insulation.					
2017	Retrofit	Yes	Capital	High	\$200,900
<p>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.</p> <p><i>*Please Note: Costs associated with repairs and/or replacement of window units or seals are not included in this budget estimate.</i></p> <p><i>*Please Note: Due to extensive past repair attempts and reported past leak issues at this facility, this roof system may have to be completely removed, which could significantly increase the estimated replacement cost for this roof section.</i></p>					
					\$202,900

Roof Name: B**Roof Size:** 29,090 sq. ft.**Est. replacement Cost:** \$ 174,540.00**Existing System Type:** Asphalt Shingles**Year Installed:** 2001**Assessed Service Life
Remaining (Years) :** 0**Height:** 8 Ft.**Slope:** 03:12**Interior Sensitivity:** Normal**Drainage:** Adequate**Currently Leaking?** Unknown**History of Leaking?** Yes**Drainage and Leak
Details:** The B roof areas slope to the eave edges and drain
to an external guttering.

Although there were no reported leaks specific to this roof section, the poor condition of the shingle membrane indicates that roof leaks are probable.





Existing Roof System Construction

Layer Type	Description	Method Of Attachment
Deck	Metal	Spot Attached
Deck	Plywood	Mechanically Fastened
Underlayment	Felt	Nailed
Membrane	Shingles	Nailed

Overall Core Condition

Roofing layers were determined at a rake edge view. An under view of the structure revealed an acoustical steel decking which has been concealed with a suspended ceiling. There is a plywood decking with a roofing felt underlayment and a laminated shingle membrane. This portion of the facility originally had a metal roof panel roof system and it is not clear if the metal roof panels were removed during the 2001 shingle roof application. The plywood decking was installed short of the rake edge and there was no evidence of insulation under the plywood at the eave view location.

Core Photos

Photos	Date	Description
	Feb 28, 2017	Deck Underside
	Feb 28, 2017	Membrane

Overall Roof Inspection Assessments

Date	Inspection Type	Inspecting Company	Inspector
Feb 28, 2017	Phase 1 Roof Inspection	Roofing Solutions, Inc.	Garry Hendrickson

Roof Section B refers to the steep sloped roof system at the Leonard Lawrence Elementary School. The roof is a sixteen (16) 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 attic vents on the north side of the building. There are small triangular shaped roof areas at the outside corners of the building. The rake wall details appear to be flashed with metal shingles that extend under a metal flashing which extends under the edge metal on the upper sides of the roof areas. The top edge detail has a metal edging which extends over the top of the shingles and counter flashes the top of the interior metal wall panels.

Defects and conditions found during the inspection include the following:

- Numerous splits in the shingle membrane observed
- Random areas with deteriorated shingles observed along the eave edges
- Numerous past repair attempts observed to shingle roof, many have split through the roof mastic
- Random areas with broken or missing shingles observed near the eave edges
- Random areas with loose anchors or bowed up top edge metal flashing

Overall, the roof system is in poor condition due to the above listed defects and poor condition of the shingle membrane. 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. There was no warranty information available for this roof section at the time of inspection.

Please Note: Due to the signs of significant movement within the roof system, further investigations into the plywood-metal decking attachment may need to be performed.

Recommendations Details

Budget Year	Activity Type	Action Item ?	Allocation	Urgency	Quotation \$
2017	Replacement	Yes	Capital	High	\$174,540

RSI recommends 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.

\$174,540

Roof Name: C**Roof Size:** 3,000 sq. ft.**Est. replacement Cost:** \$ 30,000.00**Existing System Type:** (SBS) Modified Bituminous Membrane Roofing**Year Installed:** 2010**Assessed Service Life
Remaining (Years) :** 11**Height:** 16 Ft.**Slope:** 1/8" per ft.**Interior Sensitivity:** Normal**Drainage:** Adequate**Currently Leaking?** No**History of Leaking?** Yes**Drainage and Leak
Details:** Roof Section C slopes to the south and drains to two
(2) thru-wall scuppers.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	Metal	Spot Attached
Insulation	Polyisocyanurate	Mechanically Fastened
Cover board	Dens-Deck - .25" (1/4")	Mechanically Fastened
Membrane	Mod Bit - 2 ply	Hot Asphalt
Surfacing	Granules	Factory Installed

Overall Core Condition

One (1) core cut was performed. The deck is an acoustical steel decking. The insulation consists of one (1) layer of 2.5" polyisocyanurate insulation board and a .25" Dens-Deck cover board. The membrane is a two (2) ply modified bitumen membrane with a granular surfacing.

Core Photos

Photos	Date	Description
	Feb 28, 2017	Deck Underside
	Feb 28, 2017	Roof System Core

Overall Roof Inspection Assessments

Date	Inspection Type	Inspecting Company	Inspector
Feb 28, 2017	Phase 1 Roof Inspection	Roofing Solutions, Inc.	Garry Hendrickson

Roof Section C refers to the low slope roof system over the cafeteria area at the Leonard Lawrence Elementary School. The roof is a seven (7) year old modified bitumen with a granular surfacing. The perimeter walls are flashed with the same type of modified bitumen membrane flashing. The common wall with the raised gym (Roof D) has the membrane flashing extending under a surface mounted counter flashing. The exterior walls are covered with the same type of membrane flashing and the walls are topped with a metal coping cap.

Defects and conditions found during the inspection include the following:

- Standing water observed in front of two (2) scuppers
- Random areas with past roof mastic repair attempts to the roof system
- Random areas with split flashing seals around the pipe penetration and pitch pocket flashings

Overall, the roof system is in good working condition. 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. 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	\$750
RSI recommends repairs be completed in accordance with the attached deficiency list.					
					\$750

Roof Name: D**Roof Size:** 4,582 sq. ft.**Est. replacement Cost:** \$ 45,820.00**Existing System Type:** Built-Up Asphalt Roofing**Year Installed:** 2001**Assessed Service Life
Remaining (Years) :** 2**Height:** 28 Ft.**Slope:** 1/8" per ft.**Interior Sensitivity:** Normal**Drainage:** Adequate**Currently Leaking?** No**History of Leaking?** Yes**Drainage and Leak
Details:** Roof Section D slopes to the interior of the area and
drains to two (2) primary roof drains.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	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 cut was performed. The deck is a precast concrete deck panel. There is 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.

Core Photos

Photos	Date	Description
	Feb 28, 2017	Deck Underside
	Feb 28, 2017	Roof System Core

Overall Roof Inspection Assessments

Date	Inspection Type	Inspecting Company	Inspector
Feb 28, 2017	Phase 1 Roof Inspection	Roofing Solutions, Inc.	Garry Hendrickson
<p>Roof Section D refers to the low slope roof system over the gymnasium at the Leonard Lawrence Elementary School, which is also the designated storm shelter for this facility. The roof is a sixteen (16) year old BUR with a gravel surface. The perimeter sides of the roof area consist of a raised roof edge detail. The edge is flashed with a BUR type of membrane flashing which has been coated with an aluminum paint and is topped with a small metal cap.</p> <p>Overall, the roof system is in fair working condition with random surface loss of the gravel roof surfacing and one (1) past repair attempt being the only defects observed at the time of the inspection. With routine maintenance and regular inspection, the roof system should remain effective for the duration of its assessed service life, approximately two (2) years. In 2019, RSI recommends the installation of a new twenty (20) year design life retrofit roof system, pending the outcome of an infrared scan.</p>			

Recommendations Details

Budget Year	Activity Type	Action Item ?	Allocation	Urgency	Quotation \$
2017	No Action	No	N/A	N/A	\$0
No action is recommended at this time.					
2019	Infrared Scan	Yes	Expense	High	\$500
RSI recommends an infrared scan be performed to locate any wet insulation.					
2019	Retrofit	Yes	Capital	High	\$45,820
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.					
					\$46,320

Photos and Deficiencies



Defect Code:	1	Quantity:	Widespread	Priority:	Monitor
Description: Deteriorated or missing sealant at counterflashing, termination bar, sealant lip, metal flashing, expansion joint, etc.					
Repair: Clean loose sealant and dirt from all surfaces. Apply new polyurethane sealant and tool to shed water.					



Defect Code:	8	Quantity:	Random	Priority:	Monitor
Description: Surface erosion.					
Repair: Prepare membrane surface by thoroughly cleaning and priming. Apply new surfacing of like materials to eroded areas. On gravel surfaced systems apply gravel in hot asphalt or recommended cold adhesive. Apply granulated fiberglass cap sheet or modified bitumen membrane on like systems. Apply coating system on smooth asphalt surfaces. Transition surfacing to provide for a smooth and neat finished appearance to match the existing surfacing.					



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:	24	Quantity:	Under 10 LF	Priority:	Monitor
Description: Evidence of past problem and previous repair.					
Repair: Investigate for chronic leak problems and repair any areas that are suspect.					

Photos and Deficiencies



Defect Code:	24	Quantity:	Widespread	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:	40	Quantity:	Random	Priority:	Monitor
Description: Low flashing height.					
Repair: Raise flashing height to a minimum of 8" above finished roof surface. Provide appropriate termination of flashings with metal copings or counterflashings. Provide a compression bar termination of flashings to concrete or block surface if flashings cannot be maintained at 8" minimum height.					



Defect Code:	46	Quantity:	Random	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:	47	Quantity:	Random	Priority:	Monitor
Description: Racked flashings					
Repair: Monitor flashings and repair when identified as deteriorated.					

Photos and Deficiencies



Defect Code:	52	Quantity:	1	Priority:	Monitor
Description: Missing rain cap, rain collar, or hood.					
Repair: Install rain cap, hood, or collar and secure and seal to pipe.					



Defect Code:	76	Quantity:	Random	Priority:	Monitor
Description: Inadequate transition flashings.					
Repair: Provide custom fabricated high grade flashing materials to seal transitions between elevations and substrates.					



Defect Code:	89	Quantity:	Widespread	Priority:	Monitor
Description: Missing wall covering/cladding.					
Repair: Replace cladding/wall covering with matching materials and methods. Reattach and reseal all joints, seams, laps, etc.					

Photos and Deficiencies



Defect Code:	6	Quantity:	Widespread	Priority:	Monitor
Description: Split in membrane.					
Repair: Cut out splits and repair membrane with similar membrane material. Extend repair material a minimum of 6" in all directions past repair areas.					



Defect Code:	9	Quantity:	Random	Priority:	Monitor
Description: Membrane deterioration.					
Repair: Replace all deteriorated membrane with new membrane of similar type, gauge, and plies.					



Defect Code:	24	Quantity:	Widespread	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:	29	Quantity:	Random	Priority:	Monitor
Description: Missing, loose, or broken shingles					
Repair: Remove all damaged shingles and replace all damaged and missing shingles with shingles of like kind and color.					

Photos and Deficiencies



Defect Code:	75	Quantity:	Random	Priority:	Monitor
Description: Inadequate attachment of metal flashings.					
Repair: Reattach metal flashings a maximum of two EPDM washered fasteners per side of curb or attach a maximum of 12" O.C for flashings more than 24 " in length.					

Photos and Deficiencies



Defect Code:	15	Quantity:	2	Priority:	Monitor
Description: Ponding of water.					
Repair: Monitor areas for severe or chronic ponding. Provide sacrificial membrane ply in ponded areas where existing membrane is deteriorated. Install additional drain or scupper including collectors and drain piping where ponding conditions are severe and chronic.					



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:	10 LF	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.					

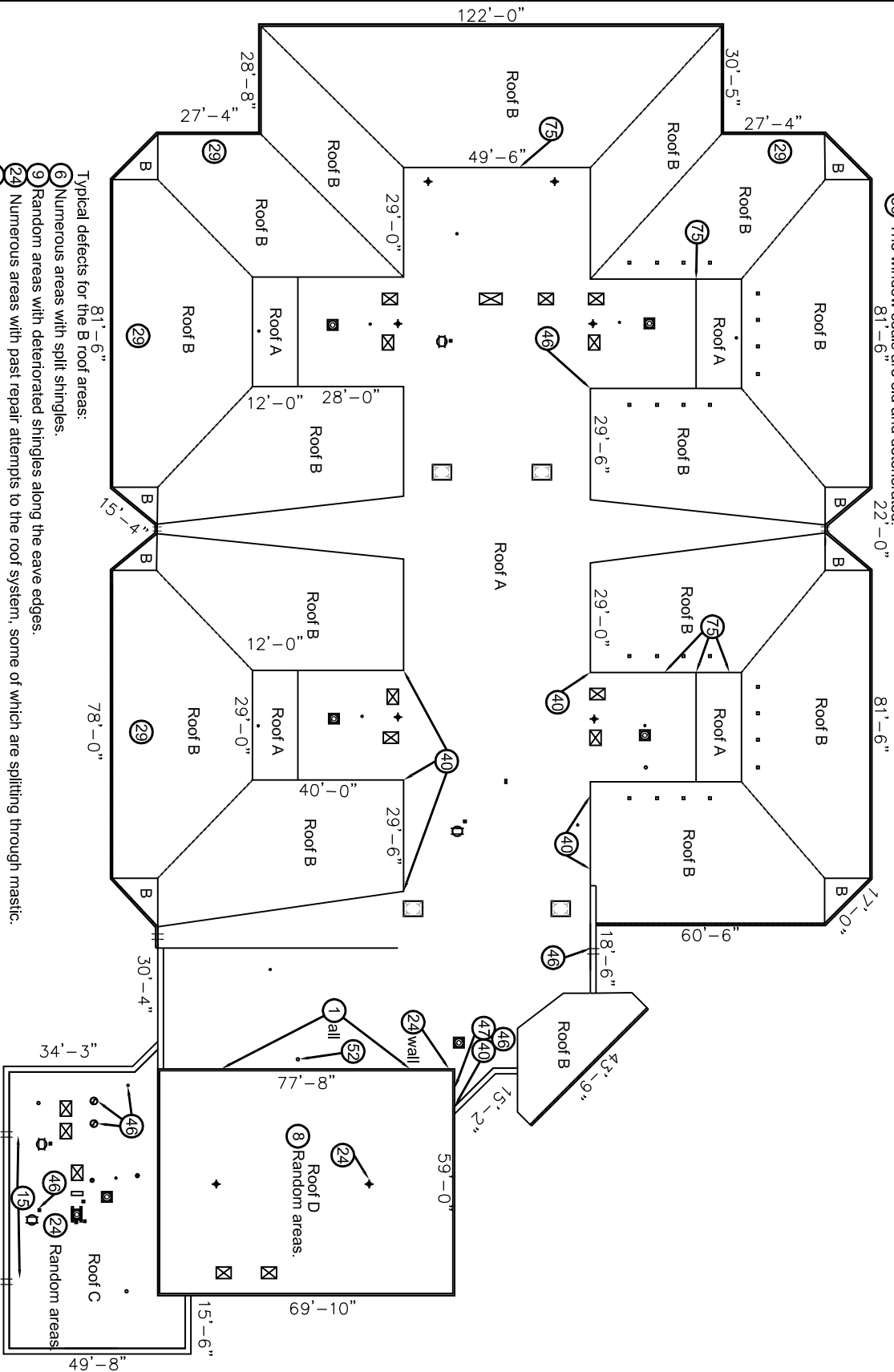
Photos and Deficiencies



Defect Code:	8	Quantity:	Random	Priority:	Monitor
Description: Surface erosion.					
Repair: Prepare membrane surface by thoroughly cleaning and priming. Apply new surfacing of like materials to eroded areas. On gravel surfaced systems apply gravel in hot asphalt or recommended cold adhesive. Apply granulated fiberglass cap sheet or modified bitumen membrane on like systems. Apply coating system on smooth asphalt surfaces. Transition surfacing to provide for a smooth and neat finished appearance to match the existing surfacing.					



Defect Code:	24	Quantity:	1	Priority:	Monitor
Description: Evidence of past problem and previous repair.					
Repair: Investigate for chronic leak problems and repair any areas that are suspect.					



- Typical defects for the A roof area:**
- 8 Random areas with surface loss of the gravel roof surfacing.
 - 24 Numerous areas with past repair attempts to the roof system.
 - 29 Caulking repairs to the window seals.
 - 47 The BUR flashings are wrinkled or racked at the corners.
 - 76 There are poor transition flashings at the bottom ends of the shingle roof areas.
 - 89 The window seals are old and deteriorated.

- Typical defects for the B roof areas:**
- 6 Numerous areas with split shingles.
 - 9 Random areas with deteriorated shingles along the eave edges.
 - 24 Numerous areas with past repair attempts to the roof system, some of which are splitting through mastic.
 - 29 Random areas with broken and missing shingles near the eave edges.
 - 75 Random areas with loose anchors and bowed metal flashings along the top edge flashing.



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 RSI@roofingsolutionsinc.com

Project Name:
 Leonard Lawrence Elementary

Project Address:
 13204 S. 29th Street
 Bellevue, NE 68123

- DRAWING LEGEND**
- ☐ DRAIN
 - ☐ OVERFLOW
 - ☐ SCUPPER
 - ☐ HVAC UNIT
 - ☐ CURB
 - ☐ SATELLITE PITCH PAN
 - PIPE
 - ▬ SLEEPER
 - ☐ SKYLIGHT
 - ☐ EXHAUST FAN
 - ☐ CONDENSER ON SLEEPERS
 - ☐ DEFECT NOTE
 - ☐ CONSTRUCTION NOTE
- N.I.C. NOT IN CONTRACT UNLESS NOTED OTHERWISE

Sheet Number:
 01 of 01

Date:
 02/28/2017

Drawn By:
 GH

Project Number:
 00-000000

Sheet Title:
 A,B,C&D-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.

Leonard Lawrence Elementary_Bellevue, NE
Ph 1 Roof Inspection_Roof A_2017-02-28



Leonard Lawrence Elementary_Bellevue, NE
Ph 1 Roof Inspection_Roof A_2017-02-28



Leonard Lawrence Elementary_Bellevue, NE
Ph 1 Roof Inspection_Roof A_2017-02-28



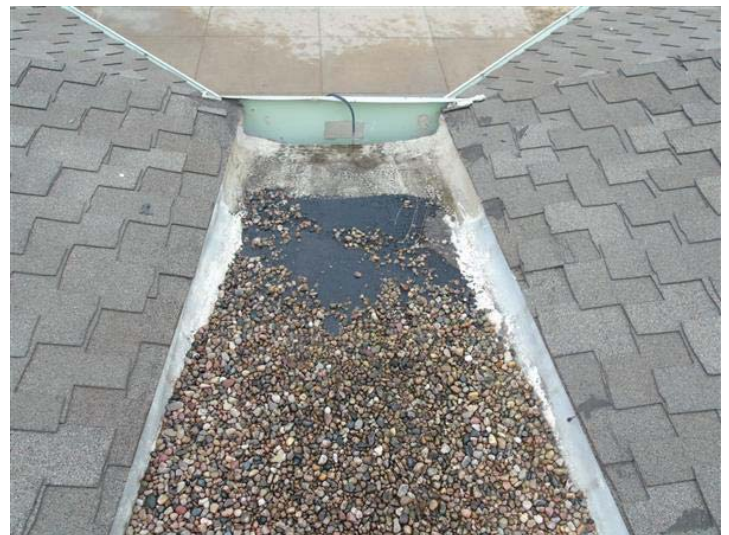
Leonard Lawrence Elementary_Bellevue, NE
Ph 1 Roof Inspection_Roof A_2017-02-28



Leonard Lawrence Elementary_Bellevue, NE
Ph 1 Roof Inspection_Roof A_2017-02-28



Leonard Lawrence Elementary_Bellevue, NE
Ph 1 Roof Inspection_Roof A_2017-02-28



Leonard Lawrence Elementary_Bellevue, NE
Ph 1 Roof Inspection_Roof A_2017-02-28



Leonard Lawrence Elementary_Bellevue, NE
Ph 1 Roof Inspection_Roof A_2017-02-28



Leonard Lawrence Elementary_Bellevue, NE
Ph 1 Roof Inspection_Roof A_2017-02-28



Leonard Lawrence Elementary_Bellevue, NE
Ph 1 Roof Inspection_Roof A_2017-02-28



Leonard Lawrence Elementary_Bellevue, NE
Ph 1 Roof Inspection_Roof A_2017-02-28



Leonard Lawrence Elementary_Bellevue, NE
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Leonard Lawrence Elementary_Bellevue, NE
Ph 1 Roof Inspection_Roof A_2017-02-28



Leonard Lawrence Elementary_Bellevue, NE
Ph 1 Roof Inspection_Roof B_2017-02-28



Leonard Lawrence Elementary_Bellevue, NE
Ph 1 Roof Inspection_Roof B_2017-02-28



Leonard Lawrence Elementary_Bellevue, NE
Ph 1 Roof Inspection_Roof B_2017-02-28



Leonard Lawrence Elementary_Bellevue, NE
Ph 1 Roof Inspection_Roof B_2017-02-28



Leonard Lawrence Elementary_Bellevue, NE
Ph 1 Roof Inspection_Roof B_2017-02-28



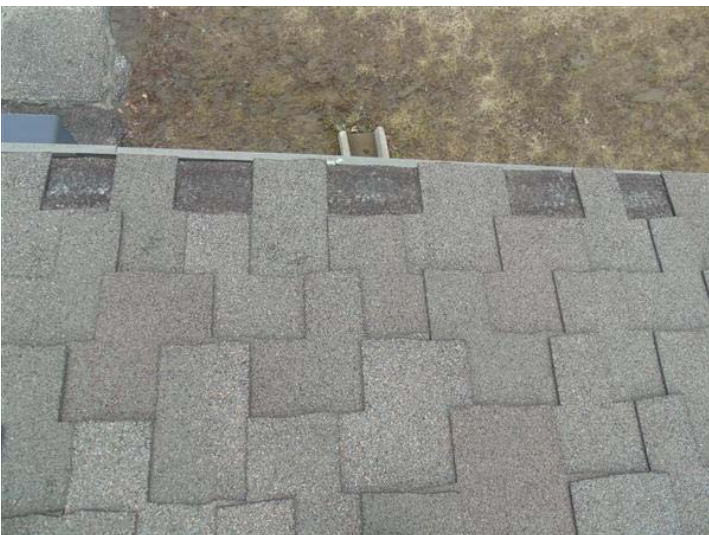
Leonard Lawrence Elementary_Bellevue, NE
Ph 1 Roof Inspection_Roof B_2017-02-28



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Leonard Lawrence Elementary_Bellevue, NE
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Leonard Lawrence Elementary_Bellevue, NE
Ph 1 Roof Inspection_Roof C_2017-02-28



Leonard Lawrence Elementary_Bellevue, NE
Ph 1 Roof Inspection_Roof C_2017-02-28



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Leonard Lawrence Elementary_Bellevue, NE
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Leonard Lawrence Elementary_Bellevue, NE
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Leonard Lawrence Elementary_Bellevue, NE
Ph 1 Roof Inspection_Roof D_2017-02-28



Leonard Lawrence Elementary_Bellevue, NE
Ph 1 Roof Inspection_Roof D_2017-02-28



Leonard Lawrence Elementary_Bellevue, NE
Ph 1 Roof Inspection_Roof D_2017-02-28

