

# Roof Inspection Report

Prepared for:

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

Prepared by:

Roofing Solutions, Inc.  
6728 W. 153<sup>rd</sup> Street  
Overland Park, KS 66223



## Project Location

LeMay Elementary  
2726 Kennedy Blvd.  
Bellevue, NE 68123

**Facility:** LeMay Elementary  
2726 Kennedy Blvd.  
Bellevue  
Nebraska  
68123  
U.S.A.



**Contact Name:** Greg Boettger

**Contact Telephone:** (402) 293-5066 Ext:




**Contact Fax:** ( ) -

**Date of Last Inspection:** Mar 20, 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 1999	15,993 sq. ft. 12 ft.	Built-Up Asphalt Roofing	Poor 40 2(Yrs)	\$135,940.50
	Roof B B 2011	17,500 sq. ft. 12 ft.	(SBS) Modified Bituminous Membrane Roofing	Good 75 12(Yrs)	\$148,750.00
	Roof C C 2008	8,195 sq. ft. 12 ft.	(SBS) Modified Bituminous Membrane Roofing	Good 75 9(Yrs)	\$122,925.00

## Roof Section List Continued...

Photo	Section / Name / Year Installed	Size / Height	Roof Type	Condition Index / *RCI / ASLR(Yrs)	Estimated Replacement Value
	Roof D D 2003	12,800 sq. ft. 12 ft.	(SBS) Modified Bituminous Membrane Roofing	Fair 55 5(Yrs)	\$153,600.00
	Roof E E 1995	5,138 sq. ft. 20 ft.	(EPDM) Ethylene-Propylene-Diene-Monomer Roofing	Poor 40 2(Yrs)	\$61,656.00
<b>59,626</b>					<b>\$622,871.50</b>
*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	High	\$1,000
Roof A	2019	Retrofit	Yes	Capital	High	\$135,940
Roof A	2019	Infrared Scan	Yes	Expense	High	\$2,500
Roof B	2017	Repair	Yes	Expense	High	\$1,500
Roof C	2017	Repair	Yes	Expense	High	\$1,000
Roof D	2017	Repair	Yes	Expense	High	\$5,000
Roof E	2017	No Action	No	N/A	N/A	\$0
Roof E	2019	Replacement	Yes	Capital	Moderate	\$61,656
						<b>\$208,596</b>

### Capital Budgets - 5 Years

Section ID	2017	2018	2019	2020	2021
Roof A	\$0	\$0	\$135,940	\$0	\$0
Roof E	\$0	\$0	\$61,656	\$0	\$0
	<b>\$0</b>	<b>\$0</b>	<b>\$197,596</b>	<b>\$0</b>	<b>\$0</b>

### Expense Budgets - 5 Years

Section ID	2017	2018	2019	2020	2021
Roof A	\$1,000	\$0	\$2,500	\$0	\$0
Roof B	\$1,500	\$0	\$0	\$0	\$0
Roof C	\$1,000	\$0	\$0	\$0	\$0
Roof D	\$5,000	\$0	\$0	\$0	\$0
	<b>\$8,500</b>	<b>\$0</b>	<b>\$2,500</b>	<b>\$0</b>	<b>\$0</b>

### Total Budgets - 5 Years

Section ID	2017	2018	2019	2020	2021
Roof A	\$1,000	\$0	\$138,440	\$0	\$0
Roof B	\$1,500	\$0	\$0	\$0	\$0
Roof C	\$1,000	\$0	\$0	\$0	\$0
Roof D	\$5,000	\$0	\$0	\$0	\$0

**Total Budgets - 5 Years Continued...**

<b>Section ID</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>
Roof E	\$0	\$0	\$61,656	\$0	\$0
	<b>\$8,500</b>	<b>\$0</b>	<b>\$200,096</b>	<b>\$0</b>	<b>\$0</b>

**Roof Name:** A**Roof Size:** 15,993 sq. ft.**Est. replacement Cost:** \$ 135,940.50**Existing System Type:** Built-Up Asphalt Roofing**Year Installed:** 1999**Assessed Service Life Remaining (Years) :** 2**Height:** 12 Ft.**Slope:** 1/4" per ft.**Interior Sensitivity:** Normal**Drainage:** Adequate**Currently Leaking?** No**History of Leaking?** Yes**Drainage and Leak Details:** The A roof areas slope toward the perimeter sides and drain to 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	Laid - In -Place
Insulation	Polyisocyanurate	Mechanically Fastened
Cover board	Fiberboard - .5" (1/2")	Hot Asphalt
Membrane	BUR - Multiply	Hot Asphalt
Surfacing	Gravel	Hot Asphalt

## Overall Core Condition

Core samples were taken on both the A-1 & A-2 roof areas to verify the roofing layers in place. Both core samples revealed the same roof system components. The deck is a steel decking. The insulation consists of two (2) layers of 1.5" polyisocyanurate 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
	Mar 20, 2017	Core cut #1
	Mar 20, 2017	Core cut #2



## Overall Roof Inspection Assessments

Date	Inspection Type	Inspecting Company	Inspector
Mar 20, 2017	Phase 1 Roof Inspection	Roofing Solutions, Inc.	Garry Hendrickson

Roof Section A refers to the low slope roof system over a portion of the eastern and northern wings at the LeMay Elementary School facility. The roof section includes the A-1 and A-2 roof areas. The roof is an approximately eighteen (18) year old BUR with a gravel surface. The exterior perimeter sides of the roof areas consist of a raised roof edge where the roof membrane terminates with a metal roof edging. The common sides with the B roof area are an 8" tall curb which is flashed with a BUR flashing and topped with a metal cap.

Defects and conditions found during the inspection include the following:

- Surface loss of the gravel roof surfacing
- Random blisters or ridging roof membrane plies observed
- Roof mastic or modified bitumen repair attempts to the BUR system
- Open modified bitumen flashing laps observed on the curbed unit corner flashings

Overall, the roof system is in poor condition due to its age and the deteriorated nature of the roof system. 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 two (2) 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	\$1,000
RSI recommends repairs be completed in accordance with the attached deficiency list.					
2019	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.					
2019	Retrofit	Yes	Capital	High	\$135,940
RSI recommends the installation of a new twenty (20) year design life roof system. We further recommend installation of new perimeter metal and projection details per the SMACNA Architectural Sheet Metal Manual.					
					<b>\$139,440</b>

**Roof Name:** B**Roof Size:** 17,500 sq. ft.**Est. replacement Cost:** \$ 148,750.00**Existing System Type:** (SBS) Modified Bituminous Membrane Roofing**Year Installed:** 2011**Assessed Service Life Remaining (Years) :** 12**Height:** 12 Ft.**Slope:** 1/4" per ft.**Interior Sensitivity:** Normal**Drainage:** Adequate**Currently Leaking?** Yes**History of Leaking?** Yes

**Drainage and Leak Details:** Roof Section B slopes towards the perimeter sides and drains to primary roof drains and small scuppers through the raised edge detail.

One (1) recent leak was reported towards the western end of the roof area.





## Existing Roof System Construction

Layer Type	Description	Method Of Attachment
Deck	Metal	Spot Attached
Insulation	Polyisocyanurate	Laid - In -Place
Insulation	Polyisocyanurate	Mechanically Fastened
Cover board	Dens-Deck - .25" (1/4")	Hot Asphalt
Membrane	Mod Bit - 2 ply	Hot Asphalt
Surfacing	Granules	Factory Installed

## Overall Core Condition

Two (2) core samples were taken to verify the roofing layers in place, both of which revealed the same type of roofing layers in place at each. The deck is a steel decking. The insulation consists of layers of polyisocyanurate insulation, which is part of a tapered insulation system, and one (1) layer of .25" Dens-Deck cover board. The membrane is a two (2) ply modified bitumen with a granulated surfacing. The polyisocyanurate board totaled 6" thick near the ridge line and 1.5" thick approx. 4' up slope from a roof drain.

## Core Photos

Photos	Date	Description
	Mar 20, 2017	Core cut #1
	Mar 20, 2017	Core cut #2

## Overall Roof Inspection Assessments

Date	Inspection Type	Inspecting Company	Inspector
Mar 20, 2017	Phase 1 Roof Inspection	Roofing Solutions, Inc.	Garry Hendrickson

Roof Section B refers to the low slope roof system over the central portion of the LeMay Elementary School facility. The roof is an approximately six (6) year old modified bitumen with a granulated surfacing. The exterior perimeter sides of the roof areas are a raised roof edge where the roof membrane terminates with a metal roof edging. The common sides with the A and C roof areas consist of an 8" tall curb which is flashed with the same type of modified bitumen and topped with a metal cap.

Defects and conditions found during the inspection include the following:

- The modified bitumen surfacing is alligating in the standing water areas
- Evidence of standing water in front of the scuppers
- Open modified bitumen flashing laps observed near a drain, end of the expansion joint and at curbed unit corner flashings
- Split flashing seals observed on the pipe penetration, end of expansion joint and at corner 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	\$1,500

RSI recommends repairs be completed in accordance with the attached deficiency list.

**\$1,500**

**Roof Name:** C**Roof Size:** 8,195 sq. ft.**Est. replacement Cost:** \$ 122,925.00**Existing System Type:** (SBS) Modified Bituminous Membrane Roofing**Year Installed:** 2008**Assessed Service Life Remaining (Years) :** 9**Height:** 12 Ft.**Slope:** 1/4" per ft.**Interior Sensitivity:** Normal**Drainage:** Adequate**Currently Leaking?** No**History of Leaking?** Yes**Drainage and Leak Details:** The C roof areas slope toward the interior and drain to 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	Gypsum	Poured - In - Place
Base sheet	Fiberglass Base	Nailed
Insulation	Polyisocyanurate	Laid - In -Place
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 sample was taken on both the C-1 and C-2 roof areas to verify the roofing layers in place and both core samples revealed the same type of roofing layers in place. The deck is poured in place gypsum decking. The insulation is one (1) layer of 2" polyisocyanurate board and one (1) layer of .25" Dens-Deck cover board. The membrane is a two (2) ply modified bitumen with a granulated surfacing. The insulation layer may be a part of a tapered insulation system. An under view of the center portion of the C-2 area revealed a wood plank decking with gypsum decking in the valley areas.

**Core Photos**

Photos	Date	Description
 A photograph showing a core cut sample of a roof. The sample is a cylindrical piece of material, approximately 4 inches in diameter and 3 inches high, with a white, fibrous interior and a dark, granular exterior. It is placed on a gravel surface next to a circular hole in the roof.	Mar 20, 2017	Core cut #1
 A photograph showing a core cut sample of a roof, similar to the first one. It is a cylindrical piece of material with a white, fibrous interior and a dark, granular exterior, placed on a gravel surface next to a circular hole in the roof.	Mar 20, 2017	Core cut #2
 A photograph showing the underside of a wooden deck. The deck is made of light-colored wood planks and is supported by metal brackets. The background shows a concrete wall and a window.	Mar 20, 2017	Deck Underside
 A photograph showing the underside of a wooden deck, similar to the previous one. The deck is made of light-colored wood planks and is supported by metal brackets. The background shows a concrete wall and a window.	Mar 20, 2017	Deck Underside #2

## Overall Roof Inspection Assessments

Date	Inspection Type	Inspecting Company	Inspector
Mar 20, 2017	Phase 1 Roof Inspection	Roofing Solutions, Inc.	Garry Hendrickson

Roof Section C refers to the low slope roof system over the front entry way to the school and the kitchen area at the LeMay Elementary School facility. The roof is an approximately nine (9) year old modified bitumen with a granulated surfacing. The exterior perimeter sides of the roof areas consist of a raised roof edge where the roof membrane terminates with a metal roof edging. The common sides with the B and D roof areas consist of an 8" tall curb which is flashed with the same type of modified bitumen and topped with a metal cap. The common walls with the raised E roof area are flashed up 12" with the same type of modified bitumen which extends under a metal counter flashing. The counter flashing is set under a stone facing at some locations and is set in the mortar joint in the concrete block wall at the remaining areas. The center portion of the C-2 roof area has a steeper slope and an under view of this area revealed a wood plank decking.

Defects and conditions found during the inspection include the following:

- The modified bitumen surfacing is alligating in the standing water areas
- Evidence of standing water observed around the roof drains
- One (1) open modified bitumen flashing lap observed on an expansion joint flashing
- Split flashing seals observed on the pipe penetration, end of the expansion joint and corner flashings
- Abandoned pipe penetrations observed on the C-1 roof area

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	\$1,000

RSI recommends repairs be completed in accordance with the attached deficiency list.

**\$1,000**



**Roof Name:** D**Roof Size:** 12,800 sq. ft.**Est. replacement Cost:** \$ 153,600.00**Existing System Type:** (SBS) Modified Bituminous Membrane Roofing**Year Installed:** 2003**Assessed Service Life Remaining (Years) :** 5**Height:** 12 Ft.**Slope:** 1/4" per ft.**Interior Sensitivity:** Normal**Drainage:** Adequate**Currently Leaking?** No**History of Leaking?** Yes**Drainage and Leak Details:** Roof Section D slopes towards the interior and drains to three (3) 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	Gypsum	Poured - In - Place
Insulation	Polyisocyanurate	Laid - In -Place
Insulation	Polyisocyanurate	Laid - In -Place
Cover board	Dens-Deck - .25" (1/4")	Mechanically Fastened
Membrane	Mod Bit - 2 ply	Hot Asphalt
Surfacing	Granules	Factory Installed
Surfacing	Gravel	Hot Asphalt

## Overall Core Condition

One (1) core cut revealed a poured in place gypsum. The insulation is two (2) layers of 1.75" polyisocyanurate board and one (1) layer of .25" Dens-Deck cover board. The membrane is a two (2) ply modified bitumen with a granulated surfacing. This roof system has an additional gravel surfacing.

## Core Photos

Photos	Date	Description
	Mar 20, 2017	Roof System Core

## Overall Roof Inspection Assessments

Date	Inspection Type	Inspecting Company	Inspector
Mar 20, 2017	Phase 1 Roof Inspection	Roofing Solutions, Inc.	Garry Hendrickson

Roof Section D refers to the low slope roof system over the western wing at the LeMay Elementary School facility. The roof is an approximately fourteen (14) year old modified bitumen with a granulated surfacing which also has an additional gravel surfacing. The exterior perimeter sides of the roof areas are a raised roof edge where the roof membrane terminates with a metal roof edging. The common sides with the C roof area is an 8" tall curb which is flashed with the same type of modified bitumen and topped with a metal cap. The common wall with the raised E roof area is flashed up 12" with the same type of modified bitumen which extends under a metal counter flashing. The counter flashing is set under a stone facing at some locations and is set in the mortar joint in the concrete block wall at the remaining areas.

Defects and conditions found during the inspection include the following:

- Surface loss of the gravel roof surfacing
- Accumulation of debris observed around the drain strainers
- The edge metal stripping is separating from the metal roof edge
- Split corner flashings and split pipe penetration flashing seals observed

Overall, the roof system is in fair working 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 five (5) years. There was no warranty information available for this roof section at the time of inspection.

**Recommendations Details**

<b>Budget Year</b>	<b>Activity Type</b>	<b>Action Item ?</b>	<b>Allocation</b>	<b>Urgency</b>	<b>Quotation \$</b>
2017	Repair	Yes	Expense	High	\$5,000
RSI recommends repairs be completed in accordance with the attached deficiency list.					
					<b>\$5,000</b>

**Roof Name:** E**Roof Size:** 5,138 sq. ft.**Est. replacement Cost:** \$ 61,656.00**Existing System Type:** (EPDM) Ethylene-Propylene-Diene-Monomer Roofing**Year Installed:** 1995**Assessed Service Life Remaining (Years) :** 2**Height:** 20 Ft.**Slope:** 1 in 12**Interior Sensitivity:** Normal**Drainage:** Adequate**Currently Leaking?** No**History of Leaking?** Yes**Drainage and Leak Details:** Roof Section E slopes from a central ridge line towards the east and west and drains to an external guttering.

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	Wood plank	Nailed
Base sheet	Fiberglass Base	Nailed
Membrane	BUR - Multiply	Hot Asphalt
Surfacing	Gravel	Hot Asphalt
Insulation	Polyisocyanurate	Mechanically Fastened
Membrane	EPDM	Cold Adhesive

## Overall Core Condition

One (1) core cut revealed a wood plank decking and two (2) roof systems in place. The original roof system is a BUR with a gravel surfacing. That roof system was later covered with one (1) layer of 2" polyisocyanurate board and a fully-adhered EPDM membrane.

## Core Photos

Photos	Date	Description
	Mar 20, 2017	Deck Underside
	Mar 20, 2017	Roof System Core

## Overall Roof Inspection Assessments

Date	Inspection Type	Inspecting Company	Inspector
Mar 20, 2017	Phase 1 Roof Inspection	Roofing Solutions, Inc.	Garry Hendrickson

Roof Section E refers to the low slope roof system over the gymnasium at the LeMay Elementary School facility. The roof is an approximately twenty-two (22) year old, fully-adhered EPDM. The exterior perimeter sides of the roof areas consist of a flat edge or a raised roof edge where the roof membrane terminates with a metal roof edging.

Defects and conditions found during the inspection include the following:

- The roof system laps have been stripped in with a layer of EPDM membrane
- Random areas with rusted edge metal and guttering observed

Overall, the roof system is in poor condition due to its age. With leak repairs performed only as needed, the roof system should remain effective for the duration of its assessed service life, approximately two (2) 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	No Action	No	N/A	N/A	\$0
No action is recommended at this time.					
2019	Replacement	Yes	Capital	Moderate	\$61,656
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.					
					<b>\$61,656</b>

Photos and Deficiencies



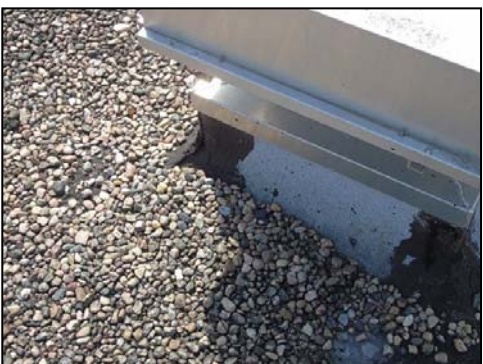
Defect Code:	8	Quantity:	Random	Priority:	Monitor
Description: Surface erosion.					
Repair: Prepare membrane surface by thoroughly cleaning and priming. Apply new surfacing of like materials to eroded areas. On gravel surfaced systems apply gravel in hot asphalt or recommended cold adhesive. Apply granulated 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:	11	Quantity:	Random	Priority:	Monitor
Description: Blister in field membrane or flashing.					
Repair: Monitor blisters that are not broken. Repair any broken blisters or blisters in traffic areas or those applying stress to seams or flashings. Cut out blistered membrane and remove wet materials. Apply new membrane and extend a minimum of 6" on					



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:	45	Quantity:	Under 10 LF	Priority:	First Year
Description: Open flashing lap					
Repair: Open loose lap area and clean thoroughly. Prime and reseam or reweld lap per the manufacturer's requirements. Strip-in defective lap with mimum 6" wide membrane on single ply systems or 6" wide fabric and mastic three-course application on asphalt systems. Regranulate or coat flashing repairs.					

Photos and Deficiencies



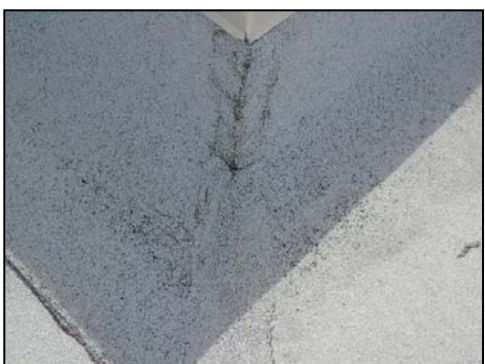
<b>Defect Code:</b>	<b>12</b>	<b>Quantity:</b>	<b>Random</b>	<b>Priority:</b>	<b>Monitor</b>
Description: Alligatoring of asphalt surfacing.					
Repair: Monitor areas and apply new membrane over severely alligatored surfaces. Extend repairs a minimum of 6" past all alligatored areas and three course edges of repairs.					



<b>Defect Code:</b>	<b>15</b>	<b>Quantity:</b>	<b>Widespread</b>	<b>Priority:</b>	<b>Monitor</b>
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.					



<b>Defect Code:</b>	<b>45</b>	<b>Quantity:</b>	<b>Under 10 LF</b>	<b>Priority:</b>	<b>First Year</b>
Description: Open flashing lap					
Repair: Open loose lap area and clean thoroughly. Prime and reseam or reweld lap per the manufacturer's requirements. Strip-in defective lap with mimum 6" wide membrane on single ply systems or 6" wide fabric and mastic three-course application on asphalt systems. Regranulate or coat flashing repairs.					



<b>Defect Code:</b>	<b>46</b>	<b>Quantity:</b>	<b>Under 10 LF</b>	<b>Priority:</b>	<b>First Year</b>
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:	12	Quantity:	Random	Priority:	Monitor
Description: Alligating of asphalt surfacing.					
Repair: Monitor areas and apply new membrane over severely alligatored surfaces. Extend repairs a minimum of 6" past all alligatored areas and three course edges of repairs.					



Defect Code:	15	Quantity:	Widespread	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:	45	Quantity:	Under 10 LF	Priority:	First Year
Description: Open flashing lap					
Repair: Open loose lap area and clean thoroughly. Prime and reseat or reweld lap per the manufacturer's requirements. Strip-in defective lap with mimum 6" wide membrane on single ply systems or 6" wide fabric and mastic three-course application on asphalt systems. Regranulate or coat flashing repairs.					



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:	56	Quantity:	2	Priority:	Monitor
Description: Abandoned and obsolete equipment.					
Repair: Monitor for leaks. Check systems are abandoned and disconnected and will not be used in the future. Remove abandoned equipment and repair deck at scheduled roof replacement.					

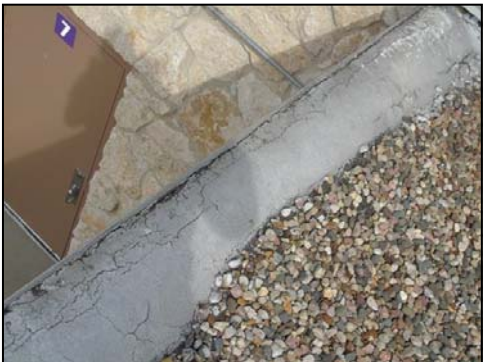
Photos and Deficiencies



<b>Defect Code:</b>	<b>8</b>	<b>Quantity:</b>	<b>Widespread</b>	<b>Priority:</b>	<b>Monitor</b>
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.					



<b>Defect Code:</b>	<b>22</b>	<b>Quantity:</b>	<b>2</b>	<b>Priority:</b>	<b>First Year</b>
Description: Debris, trash, construction materials, HVAC equipment, filters, motors, etc. on roof surface.					
Repair: Remove all trash and debris from roof. Clean and inspect surfaces and repair any damages to the membrane or flashings.					

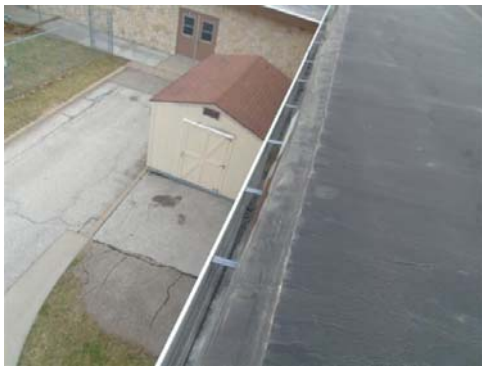


<b>Defect Code:</b>	<b>46</b>	<b>Quantity:</b>	<b>10 LF</b>	<b>Priority:</b>	<b>First Year</b>
Description: Split in flashing					
Repair: Cut away loose flashing and clean and prime repair area. Apply strip in of like material centered over split extending a minimum of 4" in all directions past prepared area.					

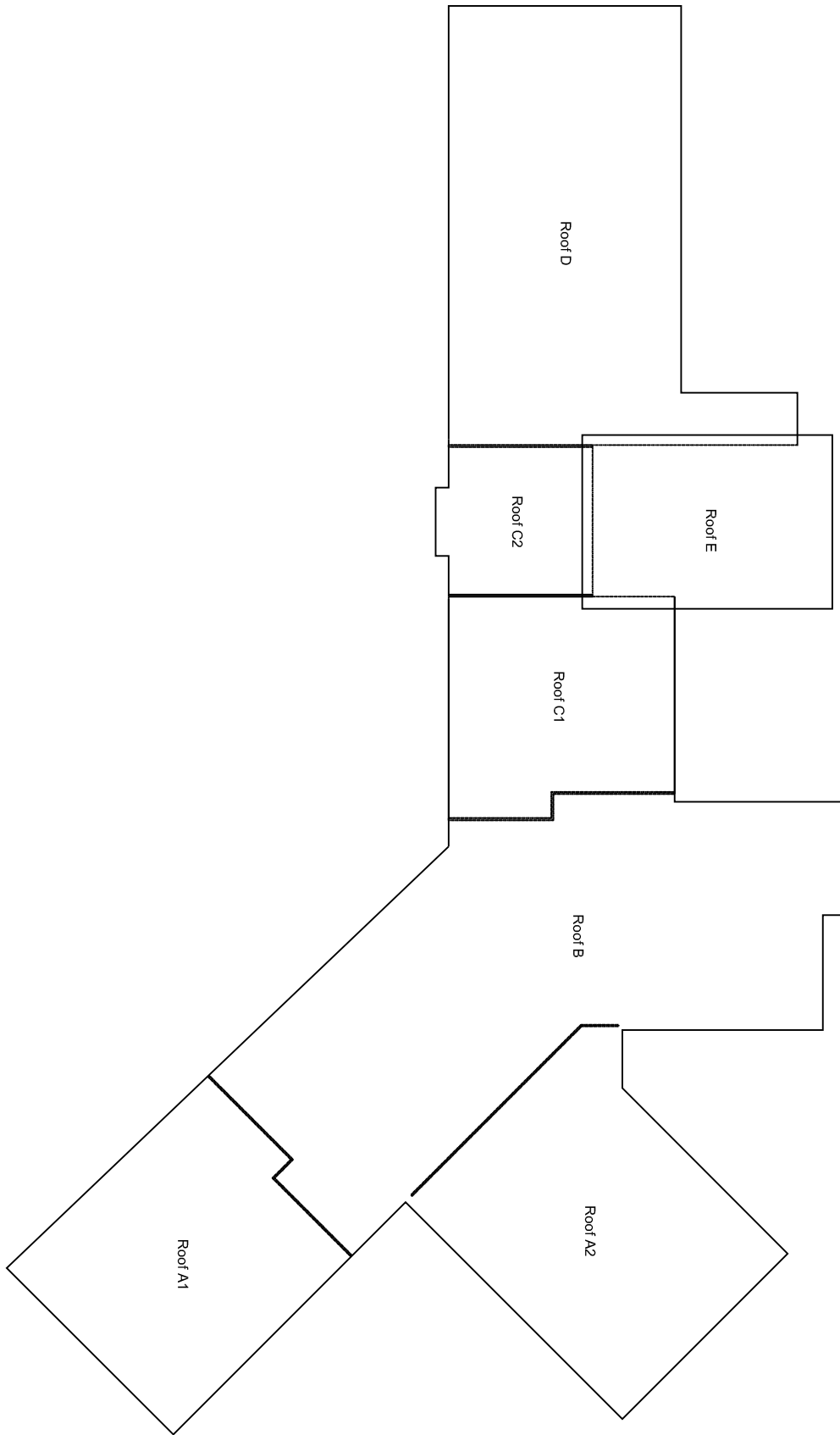
Photos and Deficiencies



Defect Code:	24	Quantity:	Numerous	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:	86	Quantity:	Random	Priority:	Monitor
Description: Corrosion or rust					
Repair: Remove rusted components and replace with similar metal fabricated and installed per SMACNA requirements.					



Roofing Solutions, Inc.  
 6728 W. 153rd Street  
 Overland Park, KS 66223  
 Office: (913)-897-1840  
 Fax: (913)-897-1499  
 RSI@roofingsolutionsinc.com

Project Name:

**LeMay Elementary**

Project Address:

**2726 Kennedy Boulevard  
 Bellevue, NE 68123**

Sheet Number:  
**01 of 01**

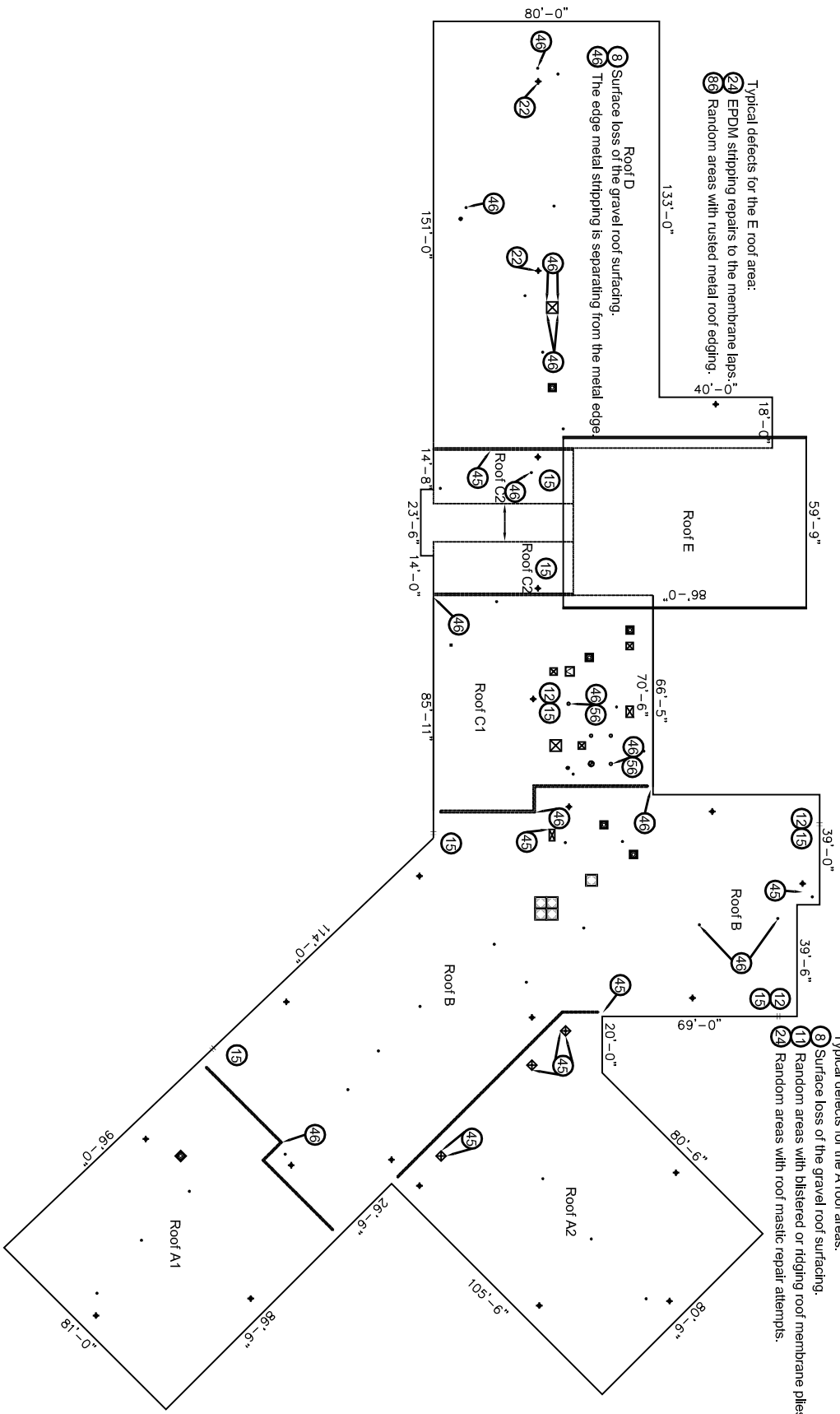
Date:  
**03/20/2017**

Drawn By:  
 GH

Project Number:  
**00-000000**

Sheet Title:  
**Site Plan**

- DRAWING LEGEND**
- ⊕ DRAIN
  - ⊖ OVERFLOW
  - ⊗ SCUPPER
  - ⊞ HVAC UNIT
  - ⊠ CURB
  - ⊡ SATELLITE
  - ⊞ PITCH PAN
  - FLUE
  - PIPE
  - SLEEPER
  - SKYLIGHT
  - ⊞ EXHAUST FAN
  - ⊞ CONDENSER ON SLEEPERS
  - ⊞ DEFECT NOTE
  - ⊞ CONSTRUCTION NOTE
  - M.C. NOT IN CONTRACT
  - U.N.O. UNLESS NOTED OTHERWISE



Typical defects for the E roof area:  
 24 EPDM stripping repairs to the membrane laps.  
 29 Random areas with rusted metal roofing.

Typical defects for the A roof areas:  
 8 Surface loss of the gravel roof surfacing.  
 17 Random areas with blistered or ridging roof membrane plies.  
 22 Random areas with roof mastic repair attempts.



**Roofing Solutions, Inc.**  
 6728 W. 153rd Street  
 Overland Park, KS 66223  
 Office: (913)-897-1840  
 Fax: (913)-897-1499  
 RSI@roofingsolutionsinc.com

**Project Name:**  
**LeMay Elementary**

**Project Address:**  
**2726 Kennedy Boulevard  
 Bellevue, NE 68123**

**Project Number:** 00-000000  
**Sheet Title:** A,B,C,D&E-Roof Plan

**Sheet Number:** 01 of 01  
**Date:** 03/20/2017  
**Drawn By:** GH

- DRAWING LEGEND**
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## Deficiency Legend

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Defect #	<b>FIELD MEMBRANE AND ROOF SURFACE</b>
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.
	<b>METALWORK AND MISCELLANEOUS</b>
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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Ph 1 Roof Inspection\_Roof A-1\_2017-03-20



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Ph 1 Roof Inspection\_Roof A-2\_2017-03-20



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Ph 1 Roof Inspection\_Roof A-2\_2017-03-20



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