

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

Bertha Barber Elementary
1402 S. Main Street
Bellevue, NE 68005

Facility: Bertha Barber Elementary
1402 S. Main Street
Bellevue
Nebraska
68005
U.S.A.



Contact Name: Greg Boettger

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Date of Last Inspection: Mar 07, 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 1993	8,091 sq. ft. 24 ft.	(EPDM) Ethylene-Propyl ene-Diene-Mon omer Roofing	Poor 33 0(Yrs)	\$68,773.50
	Roof B B 1993	3,177 sq. ft. 24 ft.	(EPDM) Ethylene-Propyl ene-Diene-Mon omer Roofing	Poor 33 0(Yrs)	\$27,004.50
	Roof C C 1993	3,594 sq. ft. 24 ft.	(EPDM) Ethylene-Propyl ene-Diene-Mon omer Roofing	Poor 33 0(Yrs)	\$30,549.00

Roof Section List Continued...

Photo	Section / Name / Year Installed	Size / Height	Roof Type	Condition Index / *RCI / ASLR(Yrs)	Estimated Replacement Value
	Roof D D 1993	9,507 sq. ft. 24 ft.	(EPDM) Ethylene-Propylene-Diene-Monomer Roofing	Poor 33 0(Yrs)	\$80,809.50
24,369					\$207,136.50
*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	Partial Tear-Off	Yes	Capital	High	\$68,773
Roof B	2017	Partial Tear-Off	Yes	Capital	High	\$27,005
Roof C	2017	Partial Tear-Off	Yes	Capital	High	\$30,549
Roof D	2017	Partial Tear-Off	Yes	Capital	High	\$80,809
						\$207,136

Capital Budgets - 5 Years

Section ID	2017	2018	2019	2020	2021
Roof A	\$68,773	\$0	\$0	\$0	\$0
Roof B	\$27,005	\$0	\$0	\$0	\$0
Roof C	\$30,549	\$0	\$0	\$0	\$0
Roof D	\$80,809	\$0	\$0	\$0	\$0
	\$207,136	\$0	\$0	\$0	\$0

Total Budgets - 5 Years

Section ID	2017	2018	2019	2020	2021
Roof A	\$68,773	\$0	\$0	\$0	\$0
Roof B	\$27,005	\$0	\$0	\$0	\$0
Roof C	\$30,549	\$0	\$0	\$0	\$0
Roof D	\$80,809	\$0	\$0	\$0	\$0
	\$207,136	\$0	\$0	\$0	\$0

Roof Name: A**Roof Size:** 8,091 sq. ft.**Est. replacement Cost:** \$ 68,773.50**Existing System Type:** (EPDM) Ethylene-Propylene-Diene-Monomer Roofing**Year Installed:** 1993**Assessed Service Life Remaining (Years) :** 0**Height:** 24 Ft.**Slope:** 1/4" per ft.**Interior Sensitivity:** Normal**Drainage:** Adequate**Currently Leaking?** No**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 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	Tectum	Laid - In -Place
Deck	Plywood	Mechanically Fastened
Insulation	Expanded Polystyrene (EPS)	Laid - In -Place
Cover board	Fiberboard - .5" (1/2")	Mechanically Fastened
Membrane	EPDM	Cold Adhesive

Overall Core Condition

Two (2) core samples were taken on the A-1 roof area to verify the roofing layers in place. The deck consists of a tectum panel with a plywood over lay. Both core samples revealed the same type of roofing layers in place. There is one (1) layer of 3.25" air-expanded polystyrene board, a .5" layer of wood fiber cover board and a fully-adhered, .060 mil Firestone EPDM. An under view of the A-2 roof area revealed a factory primed steel decking and the roof system appears to be the same type as the A-1 roof area.

Core Photos

Photos	Date	Description
	Mar 07, 2017	Core cut #1
	Mar 07, 2017	Core cut #2
	Mar 07, 2017	Deck Underside
	Mar 07, 2017	Deck Underside #2

Overall Roof Inspection Assessments

Date	Inspection Type	Inspecting Company	Inspector
Mar 07, 2017	Phase 1 Roof Inspection	Roofing Solutions, Inc.	Garry Hendrickson

Roof Section A refers to the low slope roof system over the Gymnasium and Cafeteria areas at the Bertha Barber Elementary School facility. The roof section includes the main A-1 roof area and a lower A-2 roof area over the kitchen storage area. The roof is a twenty-four (24) year old, fully-adhered, .060 mil Firestone EPDM. The main roof area has a gutter detail on the north and south sides of the roof area where the roof system terminates with a metal roof edging. The east and west perimeter sides of the main roof area consist of a wall detail. The walls are flashed with same type of EPDM membrane flashing and are topped with a metal coping cap. The lower A-2 roof area has a raised roof edge detail on the exterior sides of the roof area where the roof system terminates with a metal roof edging. The walls on the A-2 roof area are flashed up 8" with the same type of EPDM membrane which extends under a metal counter flashing.

Defects and conditions found during the inspection include the following:

- Open EPDM laps observed along with numerous open coating repair laps
- High roof system attachment anchors observed
- Random areas with standing water observed along the gutter edge
- Numerous repair attempts to the roof system laps
- Rusted exposed duct work and rusted coping cap metal

Overall, the roof system is in poor condition due to its age 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. 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	Partial Tear-Off	Yes	Capital	High	\$68,773

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.

**Please Note: Costs associated with repairs and/or replacement of HVAC units and/or equipment are not included in this budget estimate.*

\$68,773

Roof Name: B**Roof Size:** 3,177 sq. ft.**Est. replacement Cost:** \$ 27,004.50**Existing System Type:** (EPDM) Ethylene-Propylene-Diene-Monomer Roofing**Year Installed:** 1993**Assessed Service Life Remaining (Years) :** 0**Height:** 24 Ft.**Slope:** 1/4" per ft.**Interior Sensitivity:** Normal**Drainage:** Adequate**Currently Leaking?** No**History of Leaking?** Yes**Drainage and Leak Details:** Roof Section B slopes from north to south and drains to two (2) primary roof drains with overflow drains adjacent.

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
Thermal barrier	5/8" Gypsum board	Laid - In -Place
Insulation	Polyisocyanurate	Laid - In -Place
Cover board	Fiberboard - .5" (1/2")	Mechanically Fastened
Membrane	EPDM	Cold Adhesive

Overall Core Condition

One (1) core cut was performed. The deck is a factory primed steel decking and there is one (1) layer of 5/8" gypsum board. The insulation consists of one (1) layer of 3.25" polyisocyanurate board and a .5" layer of wood fiber cover board. The membrane is a fully-adhered, .060 mil Firestone EPDM.

Core Photos

Photos	Date	Description
	Mar 07, 2017	Membrane stamp
	Mar 07, 2017	Membrane stamp
	Mar 07, 2017	Roof System Core

Overall Roof Inspection Assessments

Date	Inspection Type	Inspecting Company	Inspector
Mar 07, 2017	Phase 1 Roof Inspection	Roofing Solutions, Inc.	Garry Hendrickson

Roof Section B refers to the low slope roof system over a centrally located roof area at the south side of the Bertha Barber Elementary School facility. The roof is a twenty-four (24) year old, fully-adhered, .060 mil Firestone EPDM. The south and east sides of the roof area consist of a wall detail. The walls are flashed with same type of EPDM membrane flashing and are topped with a metal coping cap. The common edges with the C and D roof areas have a raised roof edge detail where the EPDM membrane runs continuously through the areas. The roof area has a significant amount of duct work which runs throughout the roof and has a waterproofing membrane installed. The duct curbs are flashed with the same type of EPDM membrane which extends under the duct waterproofing covering.

Defects and conditions found during the inspection include the following:

- Accumulation of debris observed around a drain strainer
- EPDM stripping repairs observed to the roof system laps
- EPDM membrane is bridging and loose along the common edges with the C & D roof areas

Overall, the roof system is in poor condition due to its age and deteriorated 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.

Recommendations Details

Budget Year	Activity Type	Action Item ?	Allocation	Urgency	Quotation \$
2017	Partial Tear-Off	Yes	Capital	High	\$27,005

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.

\$27,005

Roof Name: C**Roof Size:** 3,594 sq. ft.**Est. replacement Cost:** \$ 30,549.00**Existing System Type:** (EPDM) Ethylene-Propylene-Diene-Monomer Roofing**Year Installed:** 1993**Assessed Service Life Remaining (Years) :** 0**Height:** 24 Ft.**Slope:** 1/4" per ft.**Interior Sensitivity:** Normal**Drainage:** Adequate**Currently Leaking?** No**History of Leaking?** Yes**Drainage and Leak Details:** Roof Section C slopes from north to south 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
Thermal barrier	5/8" Gypsum board	Laid - In -Place
Insulation	Polyisocyanurate	Laid - In -Place
Insulation	Expanded Polystyrene (EPS)	Laid - In -Place
Cover board	Fiberboard - .5" (1/2")	Mechanically Fastened
Membrane	EPDM	Cold Adhesive

Overall Core Condition

One (1) core cut was performed. The deck is a factory primed steel decking and there is one (1) layer of 5/8" gypsum board. The insulation consists of one (1) layer of 1.5" polyisocyanurate board, one (1) layer of air-expanded polystyrene board which is a tapered insulation system and a .5" layer of wood fiber cover board. The membrane is a fully-adhered, .060 mil Firestone EPDM.

Core Photos

Photos	Date	Description
	Mar 07, 2017	Roof System Core

Overall Roof Inspection Assessments

Date	Inspection Type	Inspecting Company	Inspector
Mar 07, 2017	Phase 1 Roof Inspection	Roofing Solutions, Inc.	Garry Hendrickson

Roof Section C refers to the low slope roof system over a centrally located roof area at the north side of the Bertha Barber Elementary School facility. The roof is a twenty-four (24) year old, fully-adhered, .060 mil Firestone EPDM. The common edges with the B and D roof areas have a raised roof edge detail where the EPDM membrane runs continuously through the roof areas. The common edge with the A and exterior edges consist of a raised roof edge where the roof system terminates with a metal roof edging.

Defects and conditions found during the inspection include the following:

- Peeling coating lap edges and loose EPDM lap edges observed
- Loose EPDM membrane observed along the north and west sides of the roof area
- Coating repair attempts observed to the roof system laps
- The EPDM membrane is bridging and loose along the common edge with the D roof area

Overall, the roof system is in poor condition due to its age 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. 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	Partial Tear-Off	Yes	Capital	High	\$30,549
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.					
					\$30,549

Roof Name: D**Roof Size:** 9,507 sq. ft.**Est. replacement Cost:** \$ 80,809.50**Existing System Type:** (EPDM) Ethylene-Propylene-Diene-Monomer Roofing**Year Installed:** 1993**Assessed Service Life Remaining (Years) :** 0**Height:** 24 Ft.**Slope:** 1/4" per ft.**Interior Sensitivity:** Normal**Drainage:** Adequate**Currently Leaking?** Yes**History of Leaking?** Yes**Drainage and Leak Details:** Roof Section D slopes to the interior and drains to four (4) primary roof drains.

Facility personnel reported scattered leaks on this roof section at the time of inspection.




Existing Roof System Construction

Layer Type	Description	Method Of Attachment
Deck	Metal	Spot Attached
Thermal barrier	5/8" Gypsum board	Laid - In -Place
Insulation	Polyisocyanurate	Laid - In -Place
Insulation	Expanded Polystyrene (EPS)	Laid - In -Place
Cover board	Fiberboard - .5" (1/2")	Mechanically Fastened
Membrane	EPDM	Cold Adhesive

Overall Core Condition

One (1) core cut was performed. The deck is a factory primed steel decking and there is one (1) layer of 5/8" gypsum board. The insulation consists of one (1) layer of 1.5" polyisocyanurate board, one (1) layer of air-expanded polystyrene, which is a tapered insulation system, and a .5" layer of wood fiber cover board. The membrane is a fully-adhered, .060 mil Firestone EPDM.

Core Photos

Photos	Date	Description
	Mar 07, 2017	Membrane stamp
	Mar 07, 2017	Roof System Core

Overall Roof Inspection Assessments

Date	Inspection Type	Inspecting Company	Inspector
Mar 07, 2017	Phase 1 Roof Inspection	Roofing Solutions, Inc.	Garry Hendrickson

Roof Section D refers to the low slope roof system over the western roof area at the Bertha Barber Elementary School facility. The roof is a twenty-four (24) year old, fully-adhered, .060 mil Firestone EPDM. The common edges with the B and C roof areas have a raised roof edge detail where the EPDM membrane runs continuously through the roof areas. The exterior edges consist of a raised roof edge where the roof system terminates with a metal roof edging.

Defects and conditions found during the inspection include the following:

- Open coating laps and loose EPDM lap edges observed
- High roof system attachment anchors observed
- Loose EPDM membrane observed along the east side of the roof area
- Coating and EPDM patch repair attempts to the roof system laps
- EPDM membrane is bridging and loose along the common edge with the C and B roof areas
- Open EPDM flashing laps observed near the reported leak area

Overall, the roof system is in poor condition due to its age 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. 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	Partial Tear-Off	Yes	Capital	High	\$80,809

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.

\$80,809

Photos and Deficiencies



Defect Code:	3	Quantity:	Widespread	Priority:	Monitor
Description: Open lap in field membrane.					
Repair: Clean lap of all dirt and close seam. Overlay edge of affected seam with strip-in of new membrane of like material. Extend a minimum of 4" in all directions past seam edges and repair areas.					



Defect Code:	10	Quantity:	Random	Priority:	Monitor
Description: Tented membrane at fastener.					
Repair: Remove fasteners that are loose or not flush with the substrate. Remove underlying substrate materials including insulation and coverboard and replace with matching materials of similar thicknesses to provide for a smooth flush surface.. Install new fasteners and plates per manufacturer's recommendations for system type and apply new membrane repair materials of similar type, gauge, and plies as existing roof system.					



Defect Code:	15	Quantity:	Random	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:	Widespread	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:	86	Quantity:	Random	Priority:	Monitor
Description: Corrosion or rust					
Repair: Remove rusted components and replace with similar metal fabricated and installed per SMACNA requirements.					

Photos and Deficiencies



Defect Code:	22	Quantity:	1	Priority:	First Year
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.					



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:	44	Quantity:	Random	Priority:	Monitor
Description: Bridged flashing					
Cut out all bridged flashings. Clean area thoroughly and apply new flashings. Apply corner flashings and overlay all T-laps, flashings laps, and splice intersections.					

Photos and Deficiencies



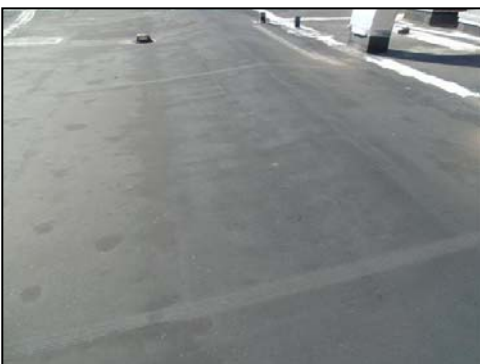
Defect Code:	3	Quantity:	Widespread	Priority:	Monitor
Description: Open lap in field membrane.					
Repair: Clean lap of all dirt and close seam. Overlay edge of affected seam with strip-in of new membrane of like material. Extend a minimum of 4" in all directions past seam edges and repair areas.					



Defect Code:	18	Quantity:	Widespread	Priority:	Monitor
Description: Unadhered membrane or inadequate membrane attachment.					
Repair: At unadhered areas, cut open membrane and readhere to substrate with manufacturer's approved adhesive. At areas with missing securement, provide securement in the form of screws and plates installed a maximum of 12" O.C. Overlay repaired areas with new membrane of similar gauge, type, and plies and extend repairs a minimum of 4" past cut areas or edges of plates.					



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:	44	Quantity:	Widespread	Priority:	Monitor
Description: Bridged flashing					
Repair: Cut out all bridged flashings. Clean area thoroughly and apply new flashings. Apply corner flashings and overlay all T-laps, flashings laps, and splice intersections.					

Photos and Deficiencies



Defect Code:	3	Quantity:	Widespread	Priority:	Monitor
Description: Open lap in field membrane.					
Repair: Clean lap of all dirt and close seam. Overlay edge of affected seam with strip-in of new membrane of like material. Extend a minimum of 4" in all directions past seam edges and repair areas.					



Defect Code:	10	Quantity:	Random	Priority:	Monitor
Description: Tented membrane at fastener.					
Repair: Remove fasteners that are loose or not flush with the substrate. Remove underlying substrate materials including insulation and coverboard and replace with matching materials of similar thicknesses to provide for a smooth flush surface.. Install new fasteners and plates per manufacturer's recommendations for system type and apply new membrane repair materials of similar type, gauge, and plies as existing roof system.					



Defect Code:	18	Quantity:	Widespread	Priority:	Monitor
Description: Unadhered membrane or inadequate membrane attachment.					
Repair: At unadhered areas, cut open membrane and readhere to substrate with manufacturer's approved adhesive. At areas with missing securement, provide securement in the form of screws and plates installed a maximum of 12" O.C. Overlay repaired areas with new membrane of similar gauge, type, and plies and extend repairs a minimum of 4" past cut areas or edges of plates.					



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.					

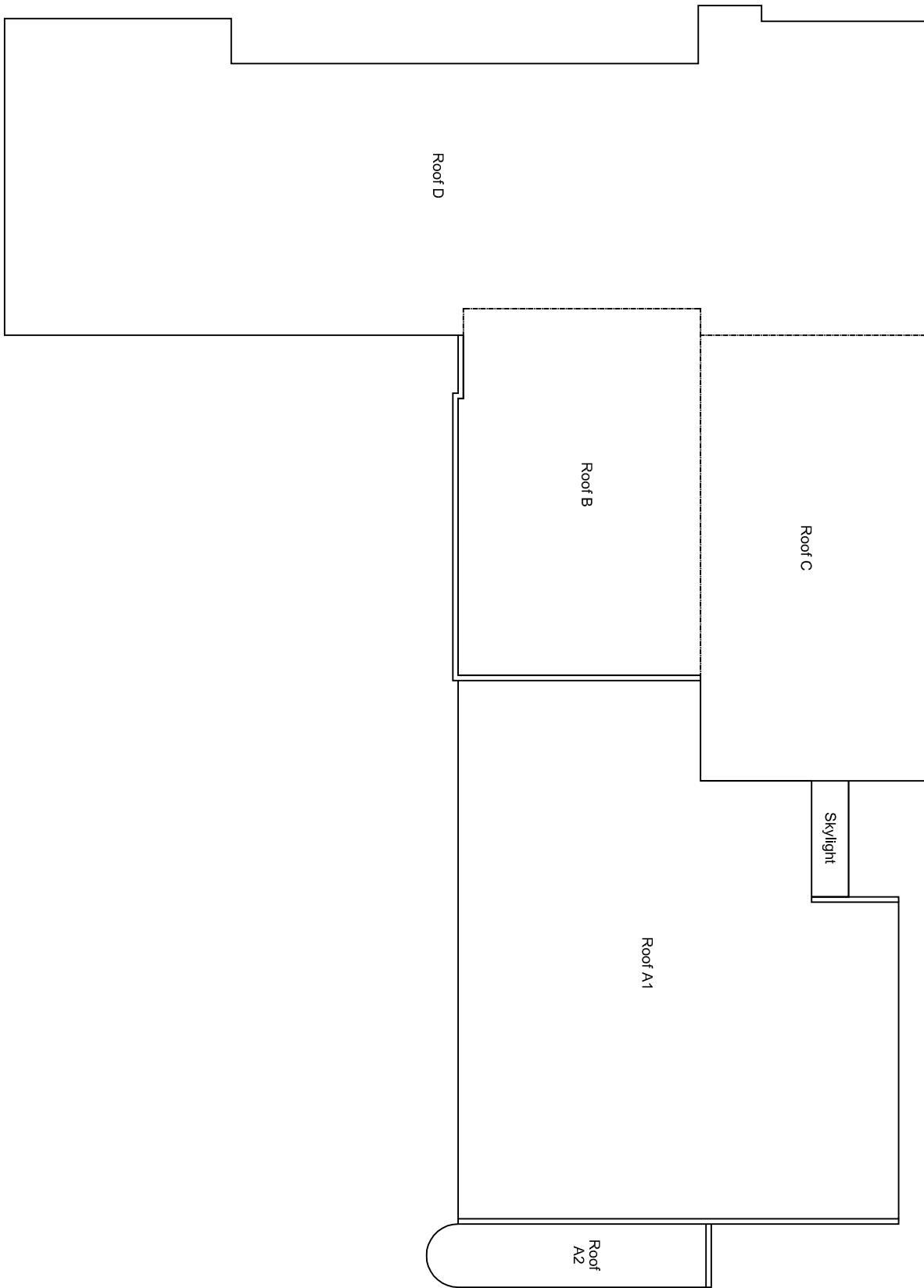
Photos and Deficiencies



Defect Code:	44	Quantity:	Widespread	Priority:	Monitor
Description: Bridged flashing					
Cut out all bridged flashings. Clean area thoroughly and apply new flashings. Apply corner flashings and overlay all T-laps, flashings laps, and splice intersections.					



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.					



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 RSI@roofingsolutionsinc.com

Project Name:

Bertha Barber Elementary

Project Address:

**1402 S. Main Street
 Bellevue, NE 68005**

Sheet Number:
01 of 01

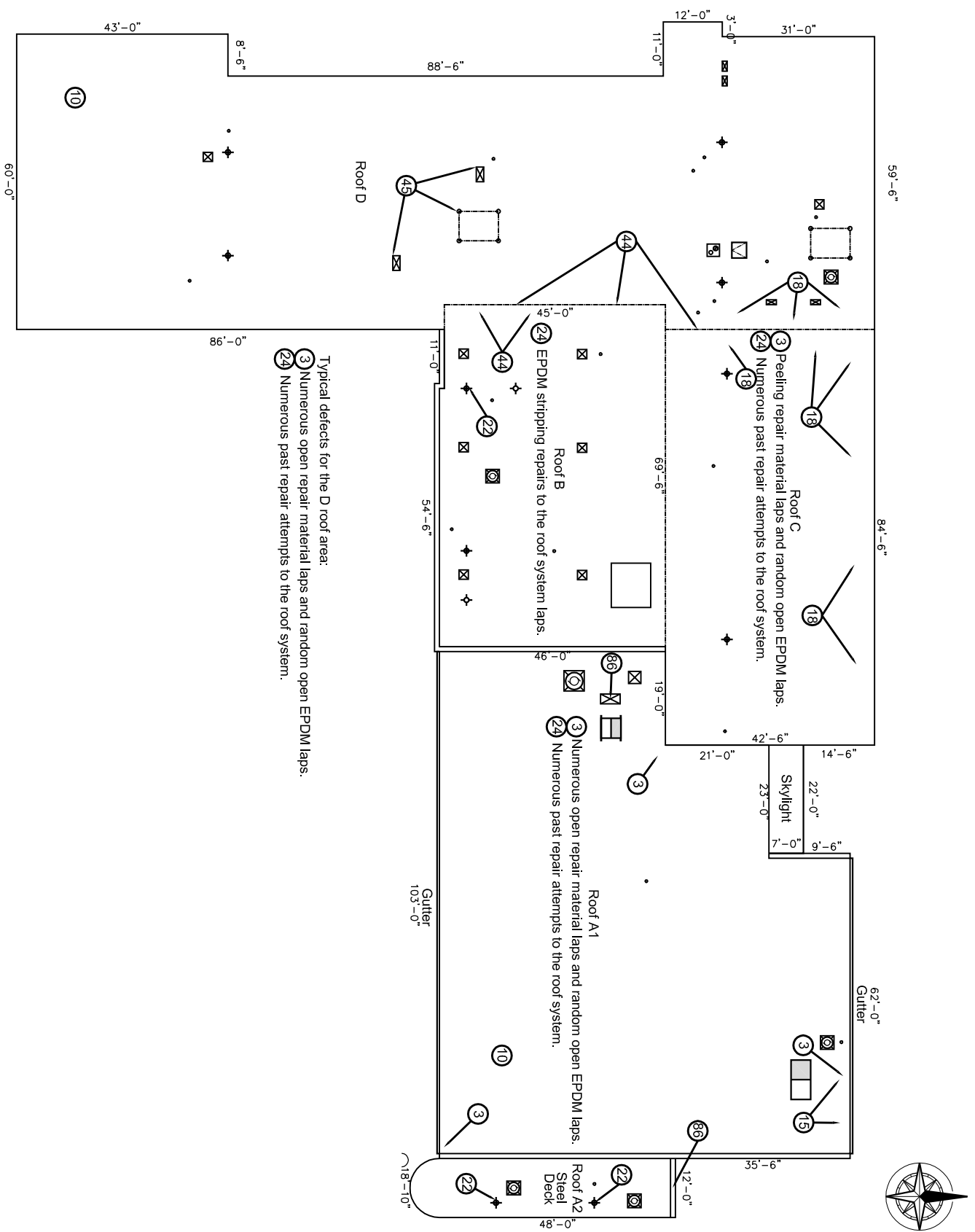
Date:
03/07/2017

Drawn By:
 GH

Project Number:
00-000000

Sheet Title:
Site Plan

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



Typical defects for the D roof area:
 ③ Numerous open repair material laps and random open EPDM laps.
 ②④ Numerous past repair attempts to the roof system.



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Project Name:
Bertha Barber Elementary

Project Address:
**1402 S. Main Street
 Bellevue, NE 68005**

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

Sheet Number: 01 of 01 **Date:** 03/07/2017 **Drawn By:** GH

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 UNLESS NOTED OTHERWISE

 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.

Bertha Barber Elementary_Bellevue, NE
Ph 1 Roof Inspection_Roof A-1_2017-03-07



Bertha Barber Elementary_Bellevue, NE
Ph 1 Roof Inspection_Roof A-1_2017-03-07



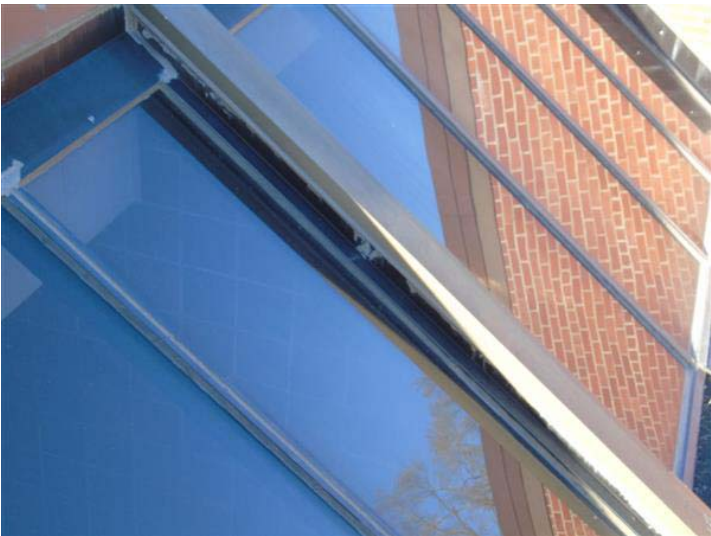
Bertha Barber Elementary_Bellevue, NE
Ph 1 Roof Inspection_Roof A-1_2017-03-07



Bertha Barber Elementary_Bellevue, NE
Ph 1 Roof Inspection_Roof A-1_2017-03-07



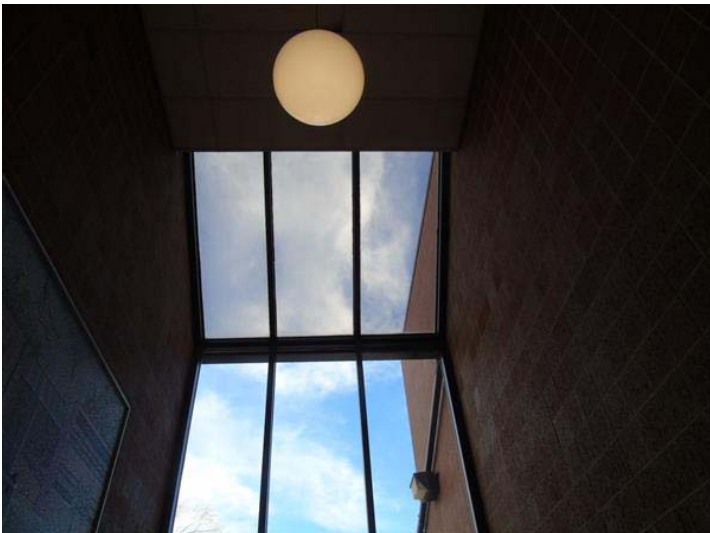
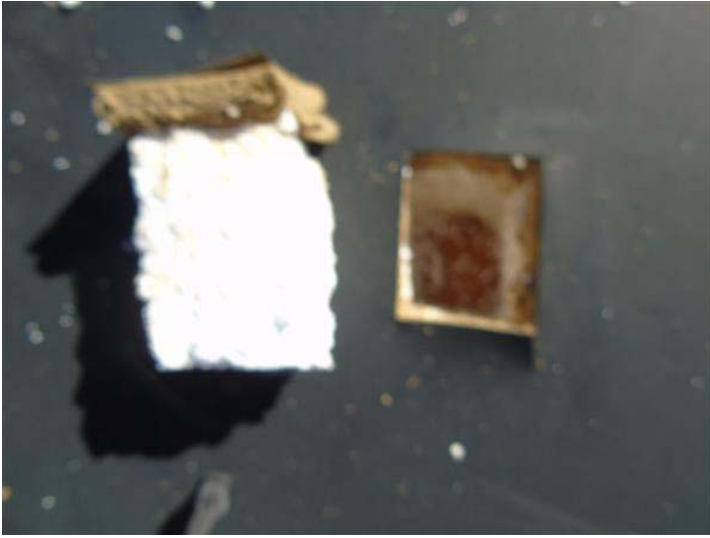
Bertha Barber Elementary_Bellevue, NE
Ph 1 Roof Inspection_Roof A-1_2017-03-07



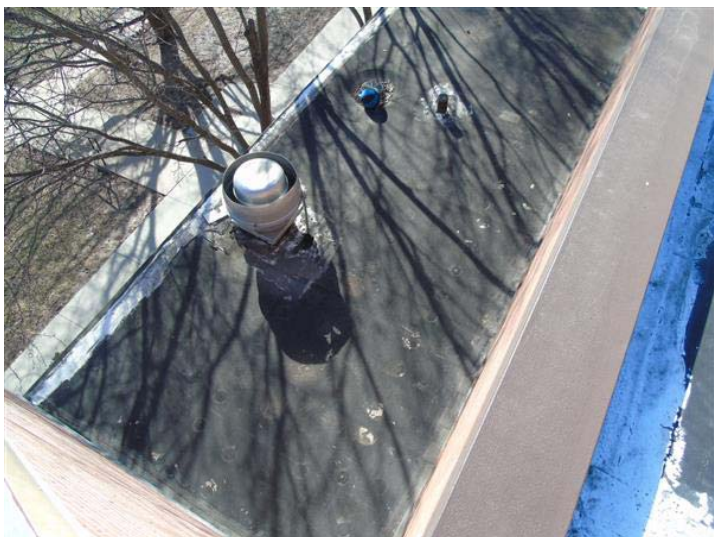
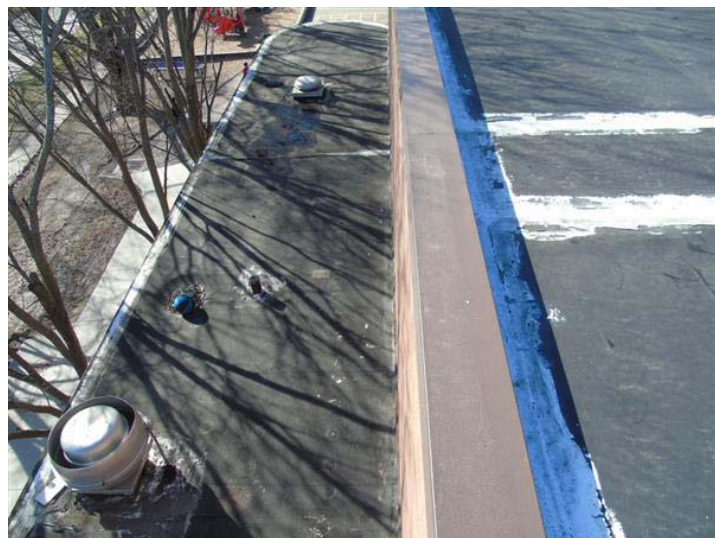
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Ph 1 Roof Inspection_Roof A-1_2017-03-07



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Bertha Barber Elementary_Bellevue, NE
Ph 1 Roof Inspection_Roof A-2_2017-03-07



Bertha Barber Elementary_Bellevue, NE
Ph 1 Roof Inspection_Roof B_2017-03-07



Bertha Barber Elementary_Bellevue, NE
Ph 1 Roof Inspection_Roof B_2017-03-07



Bertha Barber Elementary_Bellevue, NE
Ph 1 Roof Inspection_Roof B_2017-03-07



Bertha Barber Elementary_Bellevue, NE
Ph 1 Roof Inspection_Roof C_2017-03-07



Bertha Barber Elementary_Bellevue, NE
Ph 1 Roof Inspection_Roof C_2017-03-07



Bertha Barber Elementary_Bellevue, NE
Ph 1 Roof Inspection_Roof C_2017-03-07



Bertha Barber Elementary_Bellevue, NE
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Bertha Barber Elementary_Bellevue, NE
Ph 1 Roof Inspection_Roof D_2017-03-07



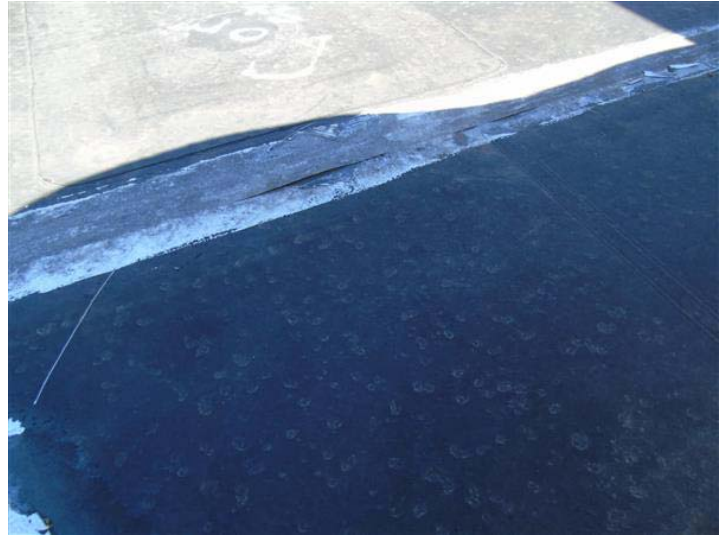
Bertha Barber Elementary_Bellevue, NE
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