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
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Project Location

West High School
1501 Thurston Avenue
Bellevue, NE 68123

Facility: West High School
1501 Thurston Avenue
Bellevue
Nebraska
68123
U.S.A.

Contact Name: Greg Boettger

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Date of Last Inspection: Mar 01, 2017

Type of building: School

Type of Neighborhood: Residential

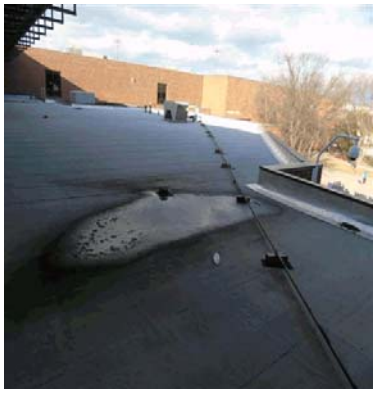
Roof Section List

Photo	Section / Name / Year Installed	Size / Height	Roof Type	Condition Index/ *RCI/ ASLR(Yrs)	Estimated Replacement Value
	Roof A A 1988	16,730 sq. ft. 16 ft.	(EPDM) Ethylene-Propylene-Diene-Monomer Roofing	Poor 33 0(Yrs)	$133,840.00
	Roof B B 1992	9,980 sq. ft. 12 ft.	Built-Up Asphalt Roofing	Poor 40 1(Yrs)	$84,830.00
	Roof C C 1992	13,896 sq. ft. 12 ft.	Built-Up Asphalt Roofing	Poor 40 1(Yrs)	$118,116.00

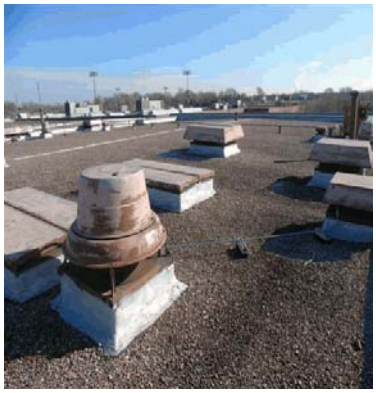
Roof Section List Continued...

Photo	Section / Name / Year Installed	Size / Height	Roof Type	Condition Index/ *RCI/ ASLR(Yrs)	Estimated Replacement Value
	Roof D D 1992	16,444 sq. ft. 12 ft.	Built-Up Asphalt Roofing	Poor 33 0(Yrs)	$139,774.00
	Roof E E 1986	7,392 sq. ft. 32 ft.	(EPDM) Ethylene-Propylene-Diene-Monomer Roofing	Poor 33 0(Yrs)	$110,880.00
	Roof F F 1992	21,278 sq. ft. 32 ft.	Built-Up Asphalt Roofing	Poor 33 0(Yrs)	$180,863.00

Roof Section List Continued...

Photo	Section / Name / Year Installed	Size / Height	Roof Type	Condition Index/ *RCI/ ASLR(Yrs)	Estimated Replacement Value
	Roof G G 2002	5,477 sq. ft. 32 ft.	Built-Up Asphalt Roofing	Fair 55 5(Yrs)	$54,770.00
	Roof H H 2012	7,411 sq. ft. 16 ft.	(SBS) Modified Bituminous Membrane Roofing	Good 75 15(Yrs)	$62,993.50
	Roof I I 2000	828 sq. ft. 16 ft.	(EPDM) Ethylene-Propylene-Diene-Monomer Roofing	Fair 55 3(Yrs)	$12,420.00

Roof Section List Continued...

Photo	Section / Name / Year Installed	Size / Height	Roof Type	Condition Index/ *RCI/ ASLR(Yrs)	Estimated Replacement Value
	Roof J J 1992	949 sq. ft. 12 ft.	Built-Up Asphalt Roofing	Poor 40 1(Yrs)	$11,388.00
	Roof K K 1992	15,526 sq. ft. 32 ft.	Built-Up Asphalt Roofing	Poor 33 0(Yrs)	$131,971.00
	Roof L L 1992	9,171 sq. ft. 32 ft.	Built-Up Asphalt Roofing	Poor 33 0(Yrs)	$91,710.00

Roof Section List Continued...

Photo	Section / Name / Year Installed	Size / Height	Roof Type	Condition Index/ *RCI/ ASLR(Yrs)	Estimated Replacement Value
	Roof M M 2000	16,317 sq. ft. 28 ft.	Built-Up Asphalt Roofing	Poor 40 1(Yrs)	$138,694.50
	Roof N N 1989	28,975 sq. ft. 28 ft.	(EPDM) Ethylene-Propylene-Diene-Monomer Roofing	Poor 33 0(Yrs)	$231,800.00
	Roof O O 1992	18,772 sq. ft. 24 ft.	Built-Up Asphalt Roofing	Poor 40 1(Yrs)	$159,562.00

Roof Section List Continued...

Photo	Section / Name / Year Installed	Size / Height	Roof Type	Condition Index/ *RCI/ ASLR(Yrs)	Estimated Replacement Value
	Roof P P 1992	28,883 sq. ft. 24 ft.	Built-Up Asphalt Roofing	Poor 40 1(Yrs)	$245,505.50
	Roof Q Q 1990	5,665 sq. ft. 24 ft.	(EPDM) Ethylene-Propylene-Diene-Monomer Roofing	Poor 33 0(Yrs)	$50,985.00
	Roof R R 2008	10,675 sq. ft. 20 ft.	(SBS) Modified Bituminous Membrane Roofing	Good 75 11(Yrs)	$90,737.50

Roof Section List Continued...

Photo	Section / Name / Year Installed	Size / Height	Roof Type	Condition Index/ *RCI/ ASLR(Yrs)	Estimated Replacement Value
	Roof S S 2000	13,585 sq. ft. 24 ft.	Built-Up Asphalt Roofing	Fair 41 2(Yrs)	$115,472.50
	Roof T T 2016	24,859 sq. ft. 28 ft.	(EPDM) Ethylene-Propylene-Diene-Monomer Roofing	Good 75 19(Yrs)	$211,301.50
		272,813			**$2,377,614.00**

*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	Replacement	Yes	Capital	High	$133,840
Roof B	2017	Repair	Yes	Expense	High	$1,500
Roof B	2018	Retrofit	Yes	Capital	High	$84,830
Roof B	2018	Infrared Scan	Yes	Expense	High	$667
Roof C	2017	Repair	Yes	Expense	High	$2,000
Roof C	2018	Retrofit	Yes	Capital	High	$118,116
Roof C	2018	Infrared Scan	Yes	Expense	High	$667
Roof D	2017	Retrofit	Yes	Capital	High	$139,774
Roof D	2017	Infrared Scan	Yes	Expense	High	$1,000
Roof E	2017	Replacement	Yes	Capital	High	$110,880
Roof F	2017	Retrofit	Yes	Capital	High	$180,863
Roof F	2017	Infrared Scan	Yes	Expense	High	$1,000
Roof G	2017	Repair	Yes	Expense	Moderate	$300
Roof H	2017	Repair	Yes	Expense	Moderate	$2,000
Roof I	2017	Repair	Yes	Expense	High	$1,500
Roof I	2020	Partial Tear-Off	Yes	Capital	Moderate	$12,420
Roof J	2017	Repair	Yes	Expense	High	$1,000
Roof J	2018	Retrofit	Yes	Capital	High	$11,148
Roof J	2018	Infrared Scan	Yes	Expense	High	$667
Roof K	2017	Retrofit	Yes	Capital	High	$131,971
Roof K	2017	Infrared Scan	Yes	Expense	High	$1,000
Roof L	2017	Retrofit	Yes	Capital	High	$91,710
Roof L	2017	Infrared Scan	Yes	Expense	High	$1,000
Roof M	2017	Repair	Yes	Expense	Moderate	$2,000
Roof M	2018	Retrofit	Yes	Capital	High	$138,694
Roof M	2018	Infrared Scan	Yes	Expense	High	$667
Roof N	2017	Partial Tear-Off	Yes	Capital	High	$231,800
Roof O	2017	Repair	Yes	Expense	Moderate	$1,500
Roof O	2018	Retrofit	Yes	Capital	High	$159,562
Roof O	2018	Infrared Scan	Yes	Expense	High	$667
Roof P	2017	Repair	Yes	Expense	High	$2,500
Roof P	2018	Retrofit	Yes	Capital	High	$245,505

Recommendation Summary Continued...

Section ID	Budget Year	Activity Type	Action Item ?	Allocation	Urgency	Budget Amount
Roof P	2018	Infrared Scan	Yes	Expense	High	$667
Roof Q	2017	Partial Tear-Off	Yes	Capital	High	$50,985
Roof R	2017	Repair	Yes	Expense	Moderate	$2,000
Roof S	2017	Repair	Yes	Expense	High	$2,000
Roof S	2019	Retrofit	Yes	Capital	High	$115,472
Roof S	2019	Infrared Scan	Yes	Expense	High	$2,500
Roof T	2017	Repair	Yes	Expense	High	$300
						$1,986,672

Capital Budgets - 5 Years

Section ID	2017	2018	2019	2020	2021
Roof A	$133,840	$0	$0	$0	$0
Roof B	$0	$84,830	$0	$0	$0
Roof C	$0	$118,116	$0	$0	$0
Roof D	$139,774	$0	$0	$0	$0
Roof E	$110,880	$0	$0	$0	$0
Roof F	$180,863	$0	$0	$0	$0
Roof I	$0	$0	$0	$12,420	$0
Roof J	$0	$11,148	$0	$0	$0
Roof K	$131,971	$0	$0	$0	$0
Roof L	$91,710	$0	$0	$0	$0
Roof M	$0	$138,694	$0	$0	$0
Roof N	$231,800	$0	$0	$0	$0
Roof O	$0	$159,562	$0	$0	$0
Roof P	$0	$245,505	$0	$0	$0
Roof Q	$50,985	$0	$0	$0	$0
Roof S	$0	$0	$115,472	$0	$0
	$1,071,823	**$757,855**	**$115,472**	**$12,420**	**$0**

Expense Budgets - 5 Years

Section ID	2017	2018	2019	2020	2021

Expense Budgets - 5 Years

Section ID	2017	2018	2019	2020	2021
Roof B	$1,500	$667	$0	$0	$0
Roof C	$2,000	$667	$0	$0	$0
Roof D	$1,000	$0	$0	$0	$0
Roof F	$1,000	$0	$0	$0	$0
Roof G	$300	$0	$0	$0	$0
Roof H	$2,000	$0	$0	$0	$0
Roof I	$1,500	$0	$0	$0	$0
Roof J	$1,000	$667	$0	$0	$0
Roof K	$1,000	$0	$0	$0	$0
Roof L	$1,000	$0	$0	$0	$0
Roof M	$2,000	$667	$0	$0	$0
Roof O	$1,500	$667	$0	$0	$0
Roof P	$2,500	$667	$0	$0	$0
Roof R	$2,000	$0	$0	$0	$0
Roof S	$2,000	$0	$2,500	$0	$0
Roof T	$300	$0	$0	$0	$0
	$22,600	**$4,002**	**$2,500**	**$0**	**$0**

Total Budgets - 5 Years

Section ID	2017	2018	2019	2020	2021
Roof A	$133,840	$0	$0	$0	$0
Roof B	$1,500	$85,497	$0	$0	$0
Roof C	$2,000	$118,783	$0	$0	$0
Roof D	$140,774	$0	$0	$0	$0
Roof E	$110,880	$0	$0	$0	$0
Roof F	$181,863	$0	$0	$0	$0
Roof G	$300	$0	$0	$0	$0
Roof H	$2,000	$0	$0	$0	$0
Roof I	$1,500	$0	$0	$12,420	$0
Roof J	$1,000	$11,815	$0	$0	$0
Roof K	$132,971	$0	$0	$0	$0
Roof L	$92,710	$0	$0	$0	$0
Roof M	$2,000	$139,361	$0	$0	$0

Total Budgets - 5 Years Continued...

Section ID	2017	2018	2019	2020	2021
Roof N	$231,800	$0	$0	$0	$0
Roof O	$1,500	$160,229	$0	$0	$0
Roof P	$2,500	$246,172	$0	$0	$0
Roof Q	$50,985	$0	$0	$0	$0
Roof R	$2,000	$0	$0	$0	$0
Roof S	$2,000	$0	$117,972	$0	$0
Roof T	$300	$0	$0	$0	$0
	$1,094,423	**$761,857**	**$117,972**	**$12,420**	**$0**

Roof Name: A

Roof Size: 16,730 sq. ft.

Est. replacement Cost: $ 133,840.00

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

Year Installed: 1988

Assessed Service Life Remaining (Years) : 0

Height: 16 Ft.

Slope: 1/4" 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 perimeters and drains to six (6) primary roof drains.

Facility personnel reported numeorus active 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	3/4" Perlite	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

Two (2) core samples were taken to verify the roofing layers in place. The deck is steel decking and both core samples revealed the same roofing layers in place. There is one (1) layer of .75” perlite, one (1) layer of 4” air expanded polystyrene board and a .5” wood fiber cover board. The membrane is a fully-adhered, .060 mil, Firestone EPDM. The wood fiber layers were partially deteriorated at both core locations. An interior view revealed areas of exposed acoustical steel decking which have been painted white.

Core Photos

Photos	Date	Description
	Mar 01, 2017	Deck Underside
	Mar 01, 2017	Membrane stamp
	Mar 01, 2017	Core cut #1
	Mar 01, 2017	Core cut #2

Overall Roof Inspection Assessments

Date	Inspection Type	Inspecting Company	Inspector
Mar 01, 2017	Phase 1 Roof Inspection	Roofing Solutions, Inc.	Garry Hendrickson

Roof Section A refers to the low slope roof system over the Industrial Arts/ Shop areas at the Bellevue West School facility. The roof is a twenty-nine (29) year old, fully-adhered, .060 mil Firestone EPDM. The perimeter 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.

Defects and conditions found during the inspection include the following:

- Open and loose EPDM lap edges observed
- Loose areas of EPDM membrane along the west and north ends of the roof area
- Loose and detached flexible walkway pads
- Accumulation of debris around drain strainers and metal filter frames have been left on the roof
- EPDM stripping repair attempts observed to the roof system laps
- Low flashing height observed on several of the HVAC units
- The EPDM flashings are bridged
- Numerous open EPDM flashing laps observed
- The exterior perimeter wall caps are rusted
- There is damage to the exposed duct work

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	Replacement	Yes	Capital	High	$133,840

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: This budget estimate is based on storm damage repairs only. Any costs associated with mechanical equipment repairs are not included.*

$133,840

Roof Name: B

Roof Size: 9,980 sq. ft.

Est. replacement Cost: $ 84,830.00

Existing System Type: Built-Up Asphalt Roofing

Year Installed: 1992

Assessed Service Life Remaining (Years) : 1

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 main B roof area slopes from a central ridge line towards the east and west and drains to four (4) primary roof drains. The small B roof area at the NW corner slopes towards the NW corner and drains to a single roof drain.

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 sample was taken on the main roof area. The deck is a factory primed steel decking. The insulation consists of one (1) layer of 1.5” polyisocyanurate insulation board and one (1) layer of .5” wood fiber cover board. The membrane is a multiply BUR with a gravel surface.

Core Photos

Photos	Date	Description
	Mar 01, 2017	Roof System Core

Overall Roof Inspection Assessments

Date	Inspection Type	Inspecting Company	Inspector
Mar 01, 2017	Phase 1 Roof Inspection	Roofing Solutions, Inc.	Garry Hendrickson

Roof Section B refers to the low slope roof system over the Art Room and Café at the Bellevue West High School facility. The roof section includes the main roof area and a small roof area at the NW corner of the main roof area. The roof is an approximately twenty-five (25) year old BUR with a gravel surface. The perimeter sides of the roof area are a wall detail. The walls are flashed with a BUR type of membrane flashing which has been coated with an aluminum paint. The common wall with the raised K roof area has the membrane flashing extending under a surface mounted counter flashing. The raised K roof area over hangs this roof area at the north and south ends of the L roof area. The exterior walls are covered with the same type of BUR flashing and the walls are topped with a metal coping cap. The common walls with the A and the C roof areas are an 8" tall curb with is covered with the same type of BUR flashing and topped with a metal cap.

Defects and conditions found during the inspection include the following:

- Roof mastic repair attempts observed to the BUR system
- The BUR flashings are weathered and cracking
- Random areas with split BUR flashings and corner flashings
- There is split pitch pocket filler
- The control joint metal caps appear to be pulled and uneven
- Inadequate pipe penetration flashings observed

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 one (1) year. There was no warranty information available for this roof section at the time of inspection. In 2018, RSI recommends the installation of a new twenty (20) year design life retrofit roof system, pending the outcome of an infrared scan.

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.					
2018	Retrofit	Yes	Capital	High	$84,830
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.					
2018	Infrared Scan	Yes	Expense	High	$667
RSI recommends an infrared scan be performed to locate any wet insulation present in the current roof system.					
					$86,997

Roof Name: C

Roof Size: 13,896 sq. ft.

Est. replacement Cost: $ 118,116.00

Existing System Type: Built-Up Asphalt Roofing

Year Installed: 1992

Assessed Service Life Remaining (Years) : 1

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 main C roof area slopes to the interior and drains to five (5) primary roof drains. The small C roof area at the NW corner slopes towards the SW corner and drains to a single roof drain.

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, revealing a steel decking. The insulation consists of one (1) layer of 1.5” polyisocyanurate insulation board and a .5” wood fiber cover board. The membrane is a multiply BUR with a gravel surface. An under view of the structure revealed an exposed acoustical decking which has been painted white.

Core Photos

Photos	Date	Description
	Mar 01, 2017	Deck Underside
	Mar 01, 2017	Roof System Core

Overall Roof Inspection Assessments

Date	Inspection Type	Inspecting Company	Inspector
Mar 01, 2017	Ph 1 Roof Inspection	Roofing Solutions, Inc.	Garry Hendrickson

Roof Section C refers to the low slope roof system over the Band area at the Bellevue West High School facility. The roof is an approximately twenty-five (25) year old BUR with a gravel surface. The perimeter sides of the roof area are a wall detail. The walls are flashed with a BUR type of membrane flashing which has been coated with an aluminum paint. The common wall with the raised K roof area has the membrane flashing extending under a surface mounted counter flashing. The raised K roof area over hangs this roof area at the north and south ends of the L roof area. The common wall with the raised N roof area is flashed in the same manner as the other walls with the membrane flashing extending under a metal counter flashing. The counter flashing is set under an additional counter flashing which appears to be set within a mortar joint in the brick wall. The common wall with the raised M roof area is flashed in the same manner as the other walls where the membrane flashing is terminated with a bar detail installed just below an EIFS wall covering.

Defects and conditions found during the inspection include the following:

- Split caulking observed in the brick wall expansion joints located above the roof system
- Surface loss observed of the gravel roof surfacing
- One (1) roof drain is blocked with debris
- Detached flexible walkway pads are scattered around on the roof area along with a steel ladder and metal filter frames which have been left on the roof area
- The metal wall caps are hail dented
- Roof mastic and modified bitumen repair attempts observed to the BUR system
- Random areas with split BUR flashings and corner flashings
- Missing gas line penetration seals on the HVAC units

Overall, the roof system is in poor condition due to its age and the deteriorated nature of the roof system. With leak repairs performed as needed, in addition to routine maintenance and regular inspection, the roof system should remain effective for the duration of its assessed service life, approximately one (1) year. 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	$2,000
RSI recommends leak repairs be performed only as needed until the roof's recommended replacement in 2018. **Please Note: Costs associated with repairs and/or replacement of HVAC units or equipment are not included in this budget estimate.*					
2018	Retrofit	Yes	Capital	High	$118,116
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.					
2018	Infrared Scan	Yes	Expense	High	$667
RSI recommends an infrared scan be performed to locate any wet insulation present in the current roof system.					
					$120,783

Roof Name: D

Roof Size: 16,444 sq. ft.

Est. replacement Cost: $ 139,774.00

Existing System Type: Built-Up Asphalt Roofing

Year Installed: 1992

Assessed Service Life Remaining (Years) : 0

Height: 12 Ft.

Slope: 1/4" per ft.

Interior Sensitivity: Normal

Drainage: Adequate

Currently Leaking? No

History of Leaking? Yes

Drainage and Leak Details: Roof Section D slopes to the interior and drains to six (6) 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 revealed a steel decking. The insulation consists of one (1) layer of 1.5” polyisocyanurate insulation board and a .5” wood fiber cover board. The membrane is a multiply BUR with a gravel surface. An under view of the structure revealed exposed steel decking which has been painted white.

Core Photos

Photos	Date	Description
	Mar 01, 2017	Deck Underside
	Mar 01, 2017	Roof System Core

Overall Roof Inspection Assessments

Date	Inspection Type	Inspecting Company	Inspector
Mar 01, 2017	Phase 1 Roof Inspection	Roofing Solutions, Inc.	Garry Hendrickson

Roof Section D refers to the low slope roof system over the Areas #6 & #7, the Custodial Office/Shop and the Kitchen area at the Bellevue West High School facility. The roof is an approximately twenty-five (25) year old BUR with a gravel surface. The perimeter sides of the roof area are a wall detail and are flashed with a BUR type of membrane flashing which has been coated with an aluminum paint. The common wall with the raised F roof area has the membrane flashing extending under a surface mounted counter flashing. The north end has wall mounted skylight panels which are set up 12" on a roof curb that is flashed with the same type of BUR flashing. The BUR flashing extends under a metal slip flashing that is set under the skylight frame. The exterior walls and the short curb along the common side with the A roof area is covered with the BUR flashing and topped with a metal cap.

Defects and conditions found during the inspection include the following:

- Buckling BUR flashings observed around one (1) roof drain
- Surface loss of the gravel roof surfacing observed
- Deteriorated and splitting past repair material
- Accumulation of debris around drain strainers with a wood pallet and metal filter frames have been left on the roof area
- Roof mastic and cold process repair attempts observed to the BUR system
- Open BUR flashing laps observed
- Areas with split BUR flashing seals and corner flashings
- BUR wall flashings are racked at the corners

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, pending the outcome of an infrared scan. There was no warranty information available for this roof section at the time of inspection.

Recommendations Details

Budget Year	Activity Type	Action Item ?	Allocation	Urgency	Quotation $
2017	Retrofit	Yes	Capital	High	$139,774
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.					
2017	Infrared Scan	Yes	Expense	High	$1,000
RSI recommends an infrared scan be performed to locate any wet insulation present in the current roof system.					
					$140,774

Roof Name: E

Roof Size: 7,392 sq. ft.

Est. replacement Cost: $ 110,880.00

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

Year Installed: 1986

Assessed Service Life Remaining (Years) : 0

Height: 32 Ft.

Slope: 1/4" per ft.

Interior Sensitivity: Normal

Drainage: Adequate

Currently Leaking? No

History of Leaking? Yes

Drainage and Leak Details: Roof Section E slopes from south to north 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	Precast concrete	Spot Attached
Vapor retarder	1 ply hot	Hot Asphalt
Insulation	Expanded Polystyrene (EPS)	Laid - In -Place
Membrane	EPDM	Laid - In -Place
Surfacing	Rock Ballast	Laid - In -Place

Overall Core Condition

One (1) core cut was performed. The deck is precast concrete panel decking. There appears to be a thin asphalt base vapor barrier. The insulation consists of one (1) layer of 4” air-expanded polystyrene board. The membrane is a .060 mil Firestone EPDM which is ballasted with a washed river rock.

Core Photos

Photos	Date	Description
	Mar 01, 2017	Deck Underside
	Mar 01, 2017	Membrane stamp
	Mar 01, 2017	Roof System Core

Overall Roof Inspection Assessments

Date	Inspection Type	Inspecting Company	Inspector
Mar 01, 2017	Phase 1 Roof Inspection	Roofing Solutions, Inc.	Garry Hendrickson

Roof Section E refers to the low slope roof system over the Pool area at the Bellevue West School facility. The roof is a thirty-one (31) year old, rock ballasted, .060 mil Firestone EPDM. The perimeter sides of the roof area are a wall detail which are flashed with same type of EPDM membrane flashing and are topped with a metal coping cap.

Defects and conditions found during the inspection include the following:

- One (1) gas line penetrates the side of a metal sleeve stack, close to the roof elevation
- The EPDM flashings are bridging, typical of an aging/shrinking EPDM membrane
- Numerous open EPDM flashing laps observed
- One (1) split in an EPDM wall flashing observed
- Rusted flue stacks

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	Replacement	Yes	Capital	High	$110,880

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.

$110,880

Roof Name: F

Roof Size: 21,278 sq. ft.

Est. replacement Cost: $ 180,863.00

Existing System Type: Built-Up Asphalt Roofing

Year Installed: 1992

Assessed Service Life Remaining (Years) : 0

Height: 32 Ft.

Slope: 1/4" per ft.

Interior Sensitivity:

Drainage: Adequate

Currently Leaking? No

History of Leaking? Yes

Drainage and Leak Details: Roof Section F slopes from a central ridge line towards the east and west and drains to six (6) 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 reveled a steel decking. The insulation consists of one (1) layer of 1.5” polyisocyanurate insulation and one (1) layer of .5” wood fiber cover board. The membrane is a multiply BUR with a gravel surface. An under view of the structure revealed exposed acoustical steel decking which has been painted white.

Core Photos

Photos	Date	Description
	Mar 01, 2017	Deck Underside
	Mar 01, 2017	Roof System Core

Overall Roof Inspection Assessments

Date	Inspection Type	Inspecting Company	Inspector
Mar 01, 2017	Phase 1 Roof Inspection	Roofing Solutions, Inc.	Garry Hendrickson

Roof Section F refers to the low slope roof system over the South Gymnasium at the Bellevue West High School facility. The roof is an approximately twenty-five (25) year old BUR with a gravel surface. The perimeter sides of the roof area are a wall detail. The walls are flashed with a BUR type of membrane flashing which has been coated with an aluminum paint and walls are topped with a metal coping cap.

Defects and conditions found during the inspection include the following:

- Open laps observed in a modified bitumen repair patch
- The BUR is splitting through several of the past repair attempts
- One (1) blistered BUR flashing observed
- The coping cap metal is hail dented
- Roof mastic and a modified bitumen patch repair attempt to the BUR system
- Areas with split flashings observed
- BUR wall flashings are racked at the corners
- A loose end on a metal coping cap observed

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, pending the outcome of an infrared scan. There was no warranty information available for this roof section at the time of inspection.

Recommendations Details

Budget Year	Activity Type	Action Item ?	Allocation	Urgency	Quotation $
2017	Retrofit	Yes	Capital	High	$180,863
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.					
2017	Infrared Scan	Yes	Expense	High	$1,000
RSI recommends an infrared scan be performed to locate any wet insulation present in the current roof system.					
					$181,863

Roof Name: G

Roof Size: 5,477 sq. ft.

Est. replacement Cost: $ 54,770.00

Existing System Type: Built-Up Asphalt Roofing

Year Installed: 2002

Assessed Service Life Remaining (Years) : 5

Height: 32 Ft.

Slope:

Interior Sensitivity:

Drainage: Adequate

Currently Leaking? No

History of Leaking? Yes

Drainage and Leak Details: Roof Section G slopes from east to west and drains to two (2) primary roof drains, each of which is accompanied by an overflow drain directly 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	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 revealed a steel decking. There is one (1) layer of 5/8" gypsum board and the insulation consists of one (1) layer of 3" polyisocyanurate insulation board and one (1) layer of .5" wood fiber cover board. The membrane is a multiply BUR with a gravel surface.

Core Photos

Photos	Date	Description
	Mar 01, 2017	Roof System Core

Overall Roof Inspection Assessments

Date	Inspection Type	Inspecting Company	Inspector
Mar 01, 2017	Phase 1 Roof Inspection	Roofing Solutions, Inc.	Garry Hendrickson

Roof Section G refers to the low slope roof system over the Thunder Dome 2002 addition to the Bellevue West High School facility. The roof is a fifteen (15) year old BUR with a gravel surface. The perimeter sides of the roof area are a wall detail. The walls are flashed with a BUR type of membrane flashing which has been coated with an aluminum paint and are topped with a metal coping cap.

Defects and conditions found during the inspection include the following:

- There are wrinkled BUR flashings
- Roof mastic repair attempts observed to the BUR system
- One (1) split BUR flashing corner

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

Recommendations Details

Budget Year	Activity Type	Action Item ?	Allocation	Urgency	Quotation $
2017	Repair	Yes	Expense	Moderate	$300
RSI recommends repairs be completed in accordance with the attached deficiency list.					
					$300

Roof Name: H

Roof Size: 7,411 sq. ft.

Est. replacement Cost: $ 62,993.50

Existing System Type: (SBS) Modified Bituminous Membrane Roofing

Year Installed: 2012

Assessed Service Life Remaining (Years) : 15

Height: 16 Ft.

Slope: 1/4" per ft.

Interior Sensitivity:

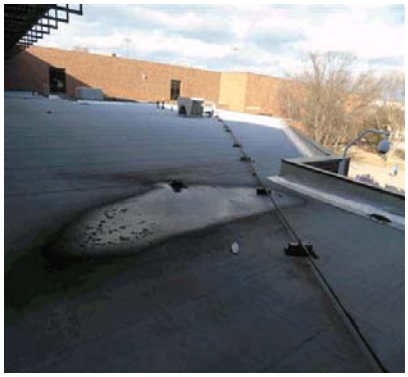
Drainage: Adequate

Currently Leaking? No

History of Leaking? Yes

Drainage and Leak Details: Roof Section H slopes to the interior and drains to four (4) 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	Unknown	Unknown
Membrane	Modified bitumen	Hot Asphalt
Surfacing	Granules	Factory Installed

Overall Core Condition

Due to the relatively recent application of the roof system, no core sample was taken on this roof section. An under view of the structure revealed a factory primed steel decking. The membrane is a SBS modified bitumen with a granulated surfacing.

Core Photos

Photos	Date	Description
	Mar 01, 2017	Deck Underside
	Mar 01, 2017	Membrane

Overall Roof Inspection Assessments

Date	Inspection Type	Inspecting Company	Inspector
Mar 01, 2017	Phase 1 Roof Inspection	Roofing Solutions, Inc.	Garry Hendrickson

Roof Section H refers to the low slope roof system over the Main Office area at the Bellevue West High School facility. The roof is a five (5) year old SBS modified bitumen with a granular surfacing. The perimeter sides of the roof area are a wall detail and are flashed with a metal flash type of membrane flashing. The exterior walls are topped with a metal coping cap. The common walls with the raised F, K and P roof areas have the membrane flashing extending under a two (2) piece metal counter flashing. The K roof area over hangs this roof area along the west side of the H roof area.

Defects and conditions found during the inspection include the following:

- Areas with fishmouths observed in the modified bitumen laps
- One (1) area with wrinkled or buckled roof membrane plies observed
- One (1) blistered modified bitumen wall flashing observed
- Standing water observed by the roof drains
- Accumulation of debris around a drain strainer and a detached flexible walkway pad is on roof
- There is damaged metal coping cap
- There is what appears to be hail hits to the modified bitumen wall flashings which has damaged the surfacing on the flashing
- One (1) damaged or open modified bitumen flashing corner observed

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. Some of these defects may be covered under a roofing manufacturer's warranty if one is found to be in effect, but only if the defect(s) in question is actively causing leaks.

Recommendations Details

Budget Year	Activity Type	Action Item ?	Allocation	Urgency	Quotation $
2017	Repair	Yes	Expense	Moderate	$2,000

RSI recommends repairs be completed in accordance with the attached deficiency list. If a warranty is in effect, the roofing manufacturer's warranty department should be contacted prior to repairs for investigation and repairs possibly covered by warranty.

**Please Note: Warranty services will only respond if the defect(s) specific roof area in question is actively leaking.*

$2,000

Roof Name: I

Roof Size: 828 sq. ft.

Est. replacement Cost: $ 12,420.00

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

Year Installed: 2000

Assessed Service Life Remaining (Years) : 3

Height: 16 Ft.

Slope: 1/4" per ft.

Interior Sensitivity: Normal

Drainage: Adequate

Currently Leaking? No

History of Leaking? Yes

Drainage and Leak Details: Roof Section I slopes towards the NE corner and drains to a single primary roof drain with an overflow scupper 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
Insulation	Polyisocyanurate	Mechanically Fastened
Membrane	EPDM	Cold Adhesive

Overall Core Condition

One (1) core cut revealed a steel decking. The insulation is one (1) layer of 3” polyisocyanurate board. The membrane is a fully-adhered, .060 mil Firestone EPDM.

Core Photos

Photos	Date	Description
	Mar 01, 2017	Roof System Core

Overall Roof Inspection Assessments

Date	Inspection Type	Inspecting Company	Inspector
Mar 01, 2017	Phase 1 Roof Inspection	Roofing Solutions, Inc.	Garry Hendrickson

Roof Section I refers to the low slope roof system over a small roof area at the north end of the Main Office area at the Bellevue West School facility. The roof is an approximately seventeen (17) year old, fully-adhered, .060 mil Firestone EPDM. The perimeter sides of the roof area are a wall detail and are flashed with same type of EPDM membrane flashing. The walls are topped with a metal coping cap.

Defects and conditions found during the inspection include the following:

- Scattered open EPDM flashing laps observed

Overall, the roof system is in fair 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, approximately three (3) years. There was no warranty information available for this roof section at the time of inspection.

Recommendations Details

Budget Year	Activity Type	Action Item ?	Allocation	Urgency	Quotation $
2017	Repair	Yes	Expense	High	$1,500
RSI recommends repairs be completed in accordance with the attached deficiency list.					
2020	Partial Tear-Off	Yes	Capital	Moderate	$12,420
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.					
					$13,920

Roof Name: J

Roof Size: 949 sq. ft.

Est. replacement Cost: $ 11,388.00

Existing System Type: Built-Up Asphalt Roofing

Year Installed: 1992

Assessed Service Life Remaining (Years) : 1

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 J slopes from north to south 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	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 revealed a factory primed steel decking. The insulation consists of one (1) layer of 2.7" polyisocyanurate insulation board and one (1) layer of .5" wood fiber cover board. The membrane is a multiply BUR with a gravel surface.

Core Photos

Photos	Date	Description
	Mar 01, 2017	Roof System Core

Overall Roof Inspection Assessments

Date	Inspection Type	Inspecting Company	Inspector
Mar 01, 2017	Phase 1 Roof Inspection	Roofing Solutions, Inc.	Garry Hendrickson

Roof Section J refers to the low slope roof system over the Link Hallway at the Bellevue West High School facility. The roof is an approximately twenty-five (25) year old BUR with a gravel surface. The perimeter sides of the roof area are a wall detail. The walls are flashed with a BUR type of membrane flashing which has been coated with an aluminum paint. The common wall with the raised P roof area has the membrane flashing extending under a metal counter flashing. The raised K roof area over hangs this roof area at the north and south ends of the L roof area. The exterior walls are covered with the same type of BUR flashing and the walls are topped with a metal coping cap.

Defects and conditions found during the inspection include the following:

- Split caulking observed in the brick wall expansion joints located above the roof system
- Accumulation of fallen leaves observed in the corner of the roof area
- One (1) small damaged spot observed on a BUR flashing
- There is hail dented metal coping cap
- Roof mastic repair attempts observed to the BUR flashings

Overall, the roof system is in poor condition due to its age and the deteriorated nature of the roof system. With leak repairs performed only as needed, in addition to routine maintenance and regular inspection, the roof system should remain effective for the duration of its assessed service life, approximately one (1) year. 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 leak repairs be performed only as needed until the roof's recommended replacement in 2018.					
2018	Retrofit	Yes	Capital	High	$11,148
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.					
2018	Infrared Scan	Yes	Expense	High	$667
RSI recommends an infrared scan be performed to locate any wet insulation present in the current roof system.					
					$12,815

Roof Name: K

Roof Size: 15,526 sq. ft.

Est. replacement Cost: $ 131,971.00

Existing System Type: Built-Up Asphalt Roofing

Year Installed: 1992

Assessed Service Life Remaining (Years) : 0

Height: 32 Ft.

Slope: 1/4" per ft.

Interior Sensitivity: Normal

Drainage: Adequate

Currently Leaking? No

History of Leaking? Yes

Drainage and Leak Details: Roof Section K slopes from a central ridge line towards the east and west and drains to six (6) 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 revealed a steel decking. The insulation consists of one (1) layer of 2.7” polyisocyanurate insulation board and one (1) layer .5” wood fiber cover board. The membrane is a multiply BUR with a gravel surface. An under view of the structure revealed exposed acoustical steel decking which has been painted white.

Core Photos

Photos	Date	Description
	Mar 01, 2017	Deck Underside
	Mar 01, 2017	Roof System Core

Overall Roof Inspection Assessments

Date	Inspection Type	Inspecting Company	Inspector
Mar 01, 2017	Phase 1 Roof Inspection	Roofing Solutions, Inc.	Garry Hendrickson

Roof Section K refers to the low slope roof system over the Cafeteria area at the Bellevue West High School facility. The roof is an approximately twenty-five (25) year old BUR with a gravel surface. The perimeter sides of the roof area are a wall detail and are flashed with a BUR type of membrane flashing which has been coated with an aluminum paint. The exterior walls are covered with the BUR flashing and topped with a metal cap. There are wall expansion details at the corners of the roof area where an expando-flash membrane is used for the expansion detail.

Defects and conditions found during the inspection include the following:

- BUR membrane is splitting through various past repair attempts
- Surface loss of the gravel roof surfacing
- Flexible walkway pads have blown across the roof area
- The metal coping cap is hail dented
- Past repair attempts observed to the BUR system
- Scattered areas with split BUR flashings and corner flashings observed
- One (1) split in a wall expansion end joint

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, pending the results of infrared scan. There was no warranty information available for this roof section at the time of inspection.

Recommendations Details

Budget Year	Activity Type	Action Item ?	Allocation	Urgency	Quotation $
2017	Retrofit	Yes	Capital	High	$131,971
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.					
2017	Infrared Scan	Yes	Expense	High	$1,000
RSI recommends an infrared scan be performed to locate any wet insulation present in the current roof system.					
					$132,971

Roof Name: L

Roof Size: 9,171 sq. ft.

Est. replacement Cost: $ 91,710.00

Existing System Type: Built-Up Asphalt Roofing

Year Installed: 1992

Assessed Service Life Remaining (Years) : 0

Height: 32 Ft.

Slope: 1/4" per ft.

Interior Sensitivity: Normal

Drainage: Adequate

Currently Leaking? No

History of Leaking? Yes

Drainage and Leak Details: Roof Section L slopes from a central ridge line towards the east and west and drains to four (4) 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 revealing a steel decking. The insulation consists of one (1) layer of 2.7" polyisocyanurate board and one (1) layer of .5" wood fiber cover board. The membrane is a multiply BUR with a gravel surface.

Core Photos

Photos	Date	Description
	Mar 01, 2017	Roof System Core

Overall Roof Inspection Assessments

Date	Inspection Type	Inspecting Company	Inspector
Mar 01, 2017	Phase 1 Roof Inspection	Roofing Solutions, Inc.	Garry Hendrickson

Roof Section L refers to the low slope roof system over the Cafeteria area at the Bellevue West High School facility. The roof is an approximately twenty-five (25) year old BUR with a gravel surface. The perimeter sides of the roof area are a wall detail. The walls are flashed with a BUR type of membrane flashing which has been coated with an aluminum paint. The exterior walls are covered with the BUR flashing and topped with a metal cap. There are wall expansion details at the corners of the roof area where an expando-flash membrane is used for the expansion detail.

Defects and conditions found during the inspection include the following:

- Standing water observed along a cricket edge
- General debris has been left on the roof area
- The metal coping cap is hail dented
- Areas observed with split BUR corner flashings

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, pending the outcome of an infrared scan. There was no warranty information available for this roof section at the time of inspection.

Recommendations Details

Budget Year	Activity Type	Action Item ?	Allocation	Urgency	Quotation $
2017	Retrofit	Yes	Capital	High	$91,710
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.					
2017	Infrared Scan	Yes	Expense	High	$1,000
RSI recommends an infrared scan be performed to locate any wet insulation present in the current roof system.					
					$92,710

Roof Name: M

Roof Size: 16,317 sq. ft.

Est. replacement Cost: $ 138,694.50

Existing System Type: Built-Up Asphalt Roofing

Year Installed: 2000

Assessed Service Life Remaining (Years) : 1

Height: 28 Ft.

Slope: 1/4" per ft.

Interior Sensitivity: Normal

Drainage: Adequate

Currently Leaking? Yes

History of Leaking? Yes

Drainage and Leak Details: Roof Section M slopes from west to east and drains to six (6) primary roof drains, each of which is accompanied by an overflow drain adjacent.

Facility personnel reported recent leaks at the north end of 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

One (1) core cut was performed revealing a steel decking. The insulation consists of one (1) layer of 2.7" polyisocyanurate board and one (1) layer of .5" wood fiber cover board. The membrane is a multiply BUR with a gravel surface.

Core Photos

Photos	Date	Description
	Mar 01, 2017	Roof System Core

Overall Roof Inspection Assessments

Date	Inspection Type	Inspecting Company	Inspector
Mar 01, 2017	Phase 1 Roof Inspection	Roofing Solutions, Inc.	Garry Hendrickson

Roof Section M refers to the low slope roof system over the 2000 addition, which is at the NW corner of the Bellevue West High School facility. The roof is a seventeen (17) year old BUR with a gravel surface. A drawing provided by the contact at the facility indicates that the southern portion of this roof area may have been installed in 1998. The perimeter sides of the roof area are a wall detail. The walls are flashed with a BUR type of membrane flashing which has been coated with an aluminum paint and topped with a metal coping cap. The interior wall detail has a metal slip flashing.

Defects and conditions found during the inspection include the following:

- Surface loss of the gravel roof surfacing
- Standing water observed along the edge of a cricket
- Hail dented coping cap metal
- Past repair attempts observed to the BUR system
- Split BUR flashing corner and drain flashings
- One (1) detached flue cap

Overall, the roof system is in poor condition due to the deteriorated nature of the roof system. With leaks repairs performed as needed, in addition to routine maintenance and regular inspection, the roof system should remain effective for the duration of its assessed service life, approximately one (1) year. There was no warranty information available for this roof section at the time of inspection.

Recommendations Details

Budget Year	Activity Type	Action Item ?	Allocation	Urgency	Quotation $
2017	Repair	Yes	Expense	Moderate	$2,000
RSI recommends repairs be performed only as needed until the roof's recommended replacement in 2018.					
2018	Retrofit	Yes	Capital	High	$138,694
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.					
2018	Infrared Scan	Yes	Expense	High	$667
RSI recommends an infrared scan be performed to locate any wet insulation present in the current roof system.					
					$141,361

Roof Name: N

Roof Size: 28,975 sq. ft.

Est. replacement Cost: $ 231,800.00

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

Year Installed: 1989

Assessed Service Life Remaining (Years) : 0

Height: 28 Ft.

Slope: 1/4" per ft.

Interior Sensitivity: Normal

Drainage: Adequate

Currently Leaking? Yes

History of Leaking? Yes

Drainage and Leak Details: Roof Section N slopes to the interior and drains to ten (10) primary roof drains.

Facility personnel reported scattered leaks during the inspection.

Existing Roof System Construction

Layer Type	Description	Method Of Attachment
Deck	Metal	Spot Attached
Thermal barrier	3/4" Perlite	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 revealed a steel decking and one (1) layer of .75” perlite. The insulation consists of one (1) layer of 4” air expanded polystyrene board and a .5” layer of wood fiber cover board. The membrane is a fully-adhered, .060 mil Firestone EPDM. The wood fiber board was partially deteriorated at the core cut location.

Core Photos

Photos	Date	Description
	Mar 01, 2017	Membrane stamp
	Mar 01, 2017	Roof System Core

Overall Roof Inspection Assessments

Date	Inspection Type	Inspecting Company	Inspector
Mar 01, 2017	Phase 1 Roof Inspection	Roofing Solutions, Inc.	Garry Hendrickson

Roof Section N refers to the low slope roof system over the Area #1 at the Bellevue West School facility. The roof is a twenty-eight (28) year old, fully-adhered .060 mil Firestone EPDM. The northern end of this roof section was replaced in 2014, which consists of 5,715 SF of the total N roof section. The perimeter sides of the roof area are a wall detail. The walls are flashed with same type of EPDM membrane flashing and are topped with a metal coping cap.

Defects and conditions found during the inspection include the following:

- Numerous open and loose EPDM lap edges observed
- Loose areas of EPDM membrane observed at the NW end of the original roof system
- Loose and detached flexible walkway pads
- Metal filter frames have been left on the roof area
- Numerous EPDM stripping repair attempts observed to the roof system laps
- Evidence of EPDM membrane shrinkage observed
- Numerous open EPDM flashing laps observed
- Cracked skylight lenses and evidence of condensation or leaking skylight lenses

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	$231,800

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.

$231,800

Roof Name: O

Roof Size: 18,772 sq. ft.

Est. replacement Cost: $ 159,562.00

Existing System Type: Built-Up Asphalt Roofing

Year Installed: 1992

Assessed Service Life Remaining (Years) : 1

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 O slopes from a central ridge line towards the east and west and drains to six (6) 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
Vapor retarder	1 ply cold	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

One (1) core cut revealed a steel decking and a single ply vapor barrier. The insulation consists of one (1) layer of 1.5” polyisocyanurate board and one (1) layer of 1” wood fiber cover board. The membrane is a multiply BUR with a gravel surface.

Core Photos

Photos	Date	Description
	Mar 01, 2017	Roof System Core

Overall Roof Inspection Assessments

Date	Inspection Type	Inspecting Company	Inspector
Mar 01, 2017	Phase 1 Roof Inspection	Roofing Solutions, Inc.	Garry Hendrickson

Roof Section O refers to the low slope roof system over the Library and Area #2 at the Bellevue West High School facility. The roof is an approximately twenty-five (25) year old BUR with a gravel surface. The perimeter sides of the roof area are a wall detail. The walls are flashed with a BUR type of membrane flashing which has been coated with an aluminum paint. The east and west walls have a wall expansion detail where expando-flash membrane is used for the detail.

Defects and conditions found during the inspection include the following:

- Detached flexible walkway pads on the roof, along with accumulation of debris around drain strainers
- Roof mastic and cold process repair attempts observed to the BUR system
- Random areas with split BUR flashings and corner flashings
- Open wall expansion joint covers observed

Overall, the roof system is in poor condition due to its age and the deteriorated nature of the roof system. With leaks performed as needed, in addition to routine maintenance and regular inspection, the roof system should remain effective for the duration of its assessed service life, approximately one (1) year. There was no warranty information available for this roof section at the time of inspection.

Recommendations Details

Budget Year	Activity Type	Action Item ?	Allocation	Urgency	Quotation $
2017	Repair	Yes	Expense	Moderate	$1,500
RSI recommends leak repairs be performed only as needed until the roof's recommended replacement in 2018.					
2018	Retrofit	Yes	Capital	High	$159,562
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.					
2018	Infrared Scan	Yes	Expense	High	$667
RSI recommends an infrared scan be performed to locate any wet insulation present in the current roof system.					
					$161,729

Roof Name: P

Roof Size: 28,883 sq. ft.

Est. replacement Cost: $ 245,505.50

Existing System Type: Built-Up Asphalt Roofing

Year Installed: 1992

Assessed Service Life Remaining (Years) : 1

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 P slopes to the interior and drains to ten (10) primary roof drains.

Facility personnel reported one (1) recent leak towards the north end of the roof.

Existing Roof System Construction

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

Overall Core Condition

One (1) core cut revealed a steel decking and a single ply vapor barrier. The insulation consists of one (1) layer of 1” polyisocyanurate board and one (1) layer of .5” wood fiber cover board. The membrane is a multiply BUR with a gravel surface.

Core Photos

Photos	Date	Description
	Mar 01, 2017	Roof System Core

Overall Roof Inspection Assessments

Date	Inspection Type	Inspecting Company	Inspector
Mar 01, 2017	Phase 1 Roof Inspection	Roofing Solutions, Inc.	Garry Hendrickson

Roof Section P refers to the low slope roof system over the (old) Science and Area #3 at the Bellevue West High School facility. The roof is an approximately twenty-five (25) year old BUR with a gravel surface. The perimeter sides of the roof area are a wall detail. The walls are flashed with a BUR type of membrane flashing which has been coated with an aluminum paint. The membrane flashing extends under a metal slip flashing which is set under a metal wall cap.

Defects and conditions found during the inspection include the following:

- Deteriorated caulking observed on a pitch pocket cover
- Surface loss of the gravel roof surfacing
- General debris has been left on the roof area
- Open holes observed in the BUR flashing
- Roof mastic and cold process repair attempts observed to the BUR system
- Random areas with split BUR flashings and corner flashings
- One (1) inadequate storm collar on a metal sleeve stack
- One (1) abandoned equipment pad & pitch pocket detail
- Evidence of leaking or condensation skylight lenses

Overall, the roof system is in poor condition due to its age and the deteriorated nature of the roof system. With leak repairs performed as needed, in addition to routine maintenance and regular inspection, the roof system should remain effective for the duration of its assessed service life, approximately one (1) year. 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	$2,500
RSI recommends leak repairs be performed only as needed until the roof's recommended replacement in 2018.					
2018	Infrared Scan	Yes	Expense	High	$667
RSI recommends an infrared scan be performed to locate any wet insulation present in the current roof system.					
2018	Retrofit	Yes	Capital	High	$245,505
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.					
					$248,672

Roof Name: Q

Roof Size: 5,665 sq. ft.

Est. replacement Cost: $ 50,985.00

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

Year Installed: 1990

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 Q slopes from a central ridge line towards the east and west 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	Expanded Polystyrene (EPS)	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 revealed a steel decking and one (1) layer of 5/8” gypsum board. The insulation consists of two (2) layers of 4” air-expanded polystyrene and a .5” layer of wood fiber cover board. The membrane is a fully-adhered, .060 mil Firestone EPDM. The wood fiber board was partially deteriorated at the core cut location The depth of the roof system was checked at an additional location and the insulation does not appear to a tapered system.

Core Photos

Photos	Date	Description
	Mar 01, 2017	Membrane stamp
	Mar 01, 2017	Roof System Core

Overall Roof Inspection Assessments

Date	Inspection Type	Inspecting Company	Inspector
Mar 01, 2017	Phase 1 Roof Inspection	Roofing Solutions, Inc.	Garry Hendrickson

Roof Section Q refers to the low slope roof system over the 221-23 & 231-33 rooms at the Bellevue West School facility. The roof is a twenty-seven (27) year old, fully-adhered, .060 mil Firestone EPDM. The perimeter sides of the roof area are a wall detail. The walls are flashed with same type of EPDM membrane flashing and are topped with a metal coping cap.

Defects and conditions found during the inspection include the following:

- Numerous open and loose EPDM lap edges
- Loose and detached flexible walkway pads
- Metal filter frames and general debris have been left on the roof area
- Numerous EPDM stripping repair attempts to the roof system laps
- Numerous open EPDM flashing laps observed

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	$50,985

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.

$50,985

Roof Name: R

Roof Size: 10,675 sq. ft.

Est. replacement Cost: $ 90,737.50

Existing System Type: (SBS) Modified Bituminous Membrane Roofing

Year Installed: 2008

Assessed Service Life Remaining (Years) : 11

Height: 20 Ft.

Slope: 1/4" per ft.

Interior Sensitivity: Normal

Drainage: Adequate

Currently Leaking? Yes

History of Leaking? Yes

Drainage and Leak Details: Roof Section R slopes from south to north and drains to four (4) primary roof drains, each of which are accompanied by an overflow drain adjacent.

Facility personnel reported one (1) recent leak near the north wall.

Existing Roof System Construction

Layer Type	Description	Method Of Attachment
Deck	Metal	Spot Attached
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

Overall Core Condition

One (1) core cut revealed a steel decking. There are two (2) layers of 1.75" polyisocyanurate board and a .25" layer of Dens-Deck cover board. The membrane is a two (2) ply SBS modified bitumen with a granulated surfacing.

Core Photos

Photos	Date	Description
	Mar 01, 2017	Roof System Core

Overall Roof Inspection Assessments

Date	Inspection Type	Inspecting Company	Inspector
Mar 01, 2017	Phase 1 Roof Inspection	Roofing Solutions, Inc.	Garry Hendrickson

Roof Section R refers to the low slope roof system over a 2008 addition at the north end of the Bellevue West High School facility. The roof is a nine (9) year old, SBS modified bitumen with a granular surfacing. The perimeter sides of the roof area are a wall detail and are flashed with the same type of membrane flashing. The exterior walls are covered with the modified bitumen flashing. The interior walls are flashed up 12" with the modified bitumen flashing which extends under an EPDM wall covering. The walls are topped with a metal coping cap.

Defects and conditions found during the inspection include the following:

- Past repair attempts observed to the wall flashings
- Open modified bitumen flashing laps observed
- Minor splitting modified bitumen flashing, corner seals
- One (1) disconnected line is windblown

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. Some of these defects may be covered under a roofing manufacturer's warranty if one is found to be active and only if the defect(s) is actively causing leaks.

Recommendations Details

Budget Year	Activity Type	Action Item ?	Allocation	Urgency	Quotation $
2017	Repair	Yes	Expense	Moderate	$2,000

RSI recommends repairs be completed in accordance with the attached deficiency list. If a warranty is in effect, the roofing manufacturer's warranty department should be contacted prior to repairs for investigation and repairs possibly covered by warranty.

**Please Note: Warranty services will only respond if the defect(s) specific roof area in question is actively leaking.*

$2,000

Roof Name: S

Roof Size: 13,585 sq. ft.

Est. replacement Cost: $ 115,472.50

Existing System Type: Built-Up Asphalt Roofing

Year Installed: 2000

Assessed Service Life Remaining (Years) : 2

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 S slopes to the interior and drains to five (5) primary roof drains, each of which is accompanied by an overflow drain 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
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 revealed a steel decking. The insulation consists of one (1) layer of 2.7” polyisocyanurate board and one (1) layer of .5” wood fiber cover board. The membrane is a multiply BUR with a gravel surface.

Core Photos

Photos	Date	Description
	Mar 01, 2017	Roof System Core

Overall Roof Inspection Assessments

Date	Inspection Type	Inspecting Company	Inspector
Mar 01, 2017	Phase 1 Roof Inspection	Roofing Solutions, Inc.	Garry Hendrickson

Roof Section S refers to the low slope roof system over the 2000 addition, which is at the NE corner of the Bellevue West High School facility. The roof is a seventeen (17) year old BUR with a gravel surface. The perimeter sides of the roof area are a wall detail. The walls are flashed with a BUR type of membrane flashing which has been coated with an aluminum paint and topped with a metal coping cap. The interior wall detail has a metal slip flashing.

Defects and conditions found during the inspection include the following:

- Surface loss of the gravel roof surfacing
- Past repair attempts observed to the BUR system
- One (1) open lap in a repair material lap
- Split BUR flashing corner and pipe penetration flashings observed
- One (1) abandoned roof curb has a metal cover

Overall, the roof system is in poor condition due to the deteriorated nature of the roof system. With leak repairs performed as needed, 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	$2,000
RSI recommends leak repairs be performed only as needed until the roof's recommended replacement in 2019.					
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	$115,472
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.					
					$119,972

Roof Name: T

Roof Size: 24,859 sq. ft.

Est. replacement Cost: $ 211,301.50

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

Year Installed: 2016

Assessed Service Life Remaining (Years) : 19

Height: 28 Ft.

Slope: 1/4" per ft.

Interior Sensitivity: Normal

Drainage: Adequate

Currently Leaking? No

History of Leaking? Yes

Drainage and Leak Details: Roof Section T slopes toward the interior and drains to ten (10) 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	Unknown	Mechanically Fastened
Membrane	EPDM	Cold Adhesive

Overall Core Condition

Due to the recent application of the roof system, no core cut was performed on this roof section. An under view of the structure revealed an acoustical steel decking. There are unknown insulation/cover board layers. The membrane is a fully-adhered, Johns Manville EPDM.

Core Photos

Photos	Date	Description
	Mar 01, 2017	Deck Underside

Overall Roof Inspection Assessments

Date	Inspection Type	Inspecting Company	Inspector
Mar 01, 2017	Phase 1 Roof Inspection	Roofing Solutions, Inc.	Garry Hendrickson

Roof Section T refers to the low slope roof system over the North Gymnasium and locker rooms at the Bellevue West School facility. The roof is a recently installed, fully-adhered, Johns Manville EPDM. The perimeter sides of the roof area are a wall detail. The walls are flashed with same type of EPDM membrane flashing and are topped with a metal coping cap.

Defects and conditions found during the inspection include the following:

- Metal filter frames have been left on the roof area
- One (1) pitch pocket with cracked filler observed
- Random areas with open coping cap cover plate laps
- HVAC units have damaged and/or flattened coil fins

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	$300
RSI recommends repairs be completed in accordance with the attached deficiency list. **Please Note: Costs associated with repairs and/or replacement of HVAC units or equipment are not included in this budget estimate.*					
					$300

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:	21	Quantity:	Widespread	Priority:	Monitor
Description: Loose walkway pad or deteriorated paver.					
Repair: Readhere or reweld wakway pads. Provide new pads to replace damaged or missing pads. Replace deteriorated concrete pavers with pavers of like kind and weight to ensure a flush walking surface.					

Defect Code:	22	Quantity:	Random	Priority:	Monitor
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.					

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:	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:	Widespread	Priority:	Monitor

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

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

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

Photos and Deficiencies

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

Defect Code:	43	Quantity:	Widespread	Priority:	First Year
Description: Weathered and deteriorated flashing					
Repair: Clean and prepare surfaces by removing loose granules, dirt, and other debris. Apply two coats of elastomeric coating compatible with the flashing materials.					

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:	55	Quantity:	1	Priority:	First Year
Description: Deteriorated or shrunken pitch pan filler.					
Repair: Clean pocket and penetrations of all dirt, insulation, and other materials and debris. Install manufacturer's recommended sealant in prepared pitch pan.					

Photos and Deficiencies

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

Defect Code:	58	Quantity:	3	Priority:	Monitor
Description: Inadequate, incomplete, nonconforming membrane flashings or flashing details.					
Repair: Complete membrane flashing repairs in accordance with NRCA recommendations and good roofing practices. Follow manufacturer requirements on warranted systems.					

Photos and Deficiencies

Defect Code:	1	Quantity:	Widespread	Priority:	First Year
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:	Widespread	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 modifed 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:	16	Quantity:	1	Priority:	First Year
Description: Blocked drain, scupper, or downspout.					
Repair: Remove all debris from drainage system and ensure drain or scupper is free flowing without restrictions at strainer or piping.					

Defect Code:	22	Quantity:	Random	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.					

Photos and Deficiencies

Defect Code:	23	Quantity:	Widespread	Priority:	Monitor
Description: Physical damage to membrane including cuts, holes, tears, scrapes, scuffs, or abrasions.					
Repair: Apply repair membrane over damaged area, extending repair material a minimum 6" past damage.					

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:	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:	87	Quantity:	2	Priority:	Monitor
Description: Mechanical defect					
Repair: Repair mechanical defect. Replace or reinstall missing access doors and panels. Reseal rooftop unit, pans, ducts, curbs, etc.					

Photos and Deficiencies

Defect Code:	5	Quantity:	10 LF	Priority:	Monitor
Description: Buckling or ridging of membrane.					
Repair: Cut out deteriorated buckles and ridges and repair membrane with similar membrane material. Extend repair material a minimum of 6" in all directions past repair areas.					

Defect Code:	8	Quantity:	Widespread	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 modifed 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:	9	Quantity:	Random	Priority:	First Year
Description: Membrane deterioration.					
Repair: Replace all deteriorated membrane with new membrane of similar type, gauge, and plies.					

Defect Code:	22	Quantity:	Random	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.					

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:	45	Quantity:	Random	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.					

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

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

Photos and Deficiencies

Defect Code:	40	Quantity:	1	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:	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:	Widespread	Priority:	Monitor

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.

Defect Code:	46	Quantity:	Under 10 LF	Priority:	Monitor

Description: Split in flashing

Repair: Cut away loose flashing and clean and prime repair area. Apply strip in of like material centered over split extending a minimum of 4" in all directions past prepared area.

Photos and Deficiencies

Defect Code:	86	Quantity:	2	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:	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:	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:	11	Quantity:	Under 10 SF	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:	23	Quantity:	Widespread	Priority:	Monitor
Description: Physical damage to membrane including cuts, holes, tears, scrapes, scuffs, or abrasions.					
Repair: Apply repair membrane over damaged area, extending repair material a minimum 6" past damage.					

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:	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.

Defect Code:	75	Quantity:	Under 10 LF	Priority:	First Year

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:	7	Quantity:	Random	Priority:	Monitor

Description: Wrinkle in membrane.

Repair: Cut out wrinkles and loose membrane. Apply new membrane of like material and plies to cover cuts and extend repairs a minimum of 6" in all directions past cut out areas.

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:	Under 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:	2	Quantity:	Under 10 LF	Priority:	First Year

Description: Fishmouth in field or flashing seam.

Repair: Cut away fishmouth and lay material flat. Apply repair of like material and extend onto existing roof surface a minimum of 4". Complete laps per manufacturer's requirements. On asphalt systems, apply three-course of mastic and fabric over lap. Resurface membrane with ballast, gravel, or granules.

Defect Code:	5	Quantity:	40 LF	Priority:	Monitor

Description: Buckling or ridging of membrane.

Repair: Cut out deteriorated buckles and ridges and repair membrane with similar membrane material. Extend repair material a minimum of 6" in all directions past repair areas.

Defect Code:	11	Quantity:	20 SF	Priority:	First Year

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:	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.

Photos and Deficiencies

Defect Code:	22	Quantity:	Random	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:	23	Quantity:	Random	Priority:	Monitor

Description: Physical damage to membrane including cuts, holes, tears, scrapes, scuffs, or abrasions.

Repair: Apply repair membrane over damaged area, extending repair material a minimum 6" past damage.

Defect Code:	43	Quantity:	Random	Priority:	Monitor

Description: Weathered and deteriorated flashing

Repair: Clean and prepare surfaces by removing loose granules, dirt, and other debris. Apply two coats of elastomeric coating compatible with the flashing materials.

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

Defect Code:	45	Quantity:	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

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:	22	Quantity:	Random	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:	23	Quantity:	Under 10 LF	Priority:	First Year

Description: Physical damage to membrane including cuts, holes, tears, scrapes, scuffs, or abrasions.

Repair: Apply repair membrane over damaged area, extending repair material a minimum 6" past damage.

Defect Code:	23	Quantity:	Widespread	Priority:	Monitor

Description: Physical damage to membrane including cuts, holes, tears, scrapes, scuffs, or abrasions.

Repair: Apply repair membrane over damaged area, extending repair material a minimum 6" past damage.

Photos and Deficiencies

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

Photos and Deficiencies

Defect Code:	6	Quantity:	Random	Priority:	First Year

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:	8	Quantity:	Widespread	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 modifed 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:	22	Quantity:	Random	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:	23	Quantity:	Widespread	Priority:	Monitor

Description: Physical damage to membrane including cuts, holes, tears, scrapes, scuffs, or abrasions.

Repair: Apply repair membrane over damaged area, extending repair material a minimum 6" past damage.

Photos and Deficiencies

Defect Code:	24	Quantity:	Random	Priority:	Monitor

Description: Evidence of past problem and previous repair.

Repair: Investigate for chronic leak problems and repair any areas that are suspect.

Defect Code:	46	Quantity:	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:	57	Quantity:	Under 10 LF	Priority:	First Year

Description: Expansion joint deficiencies.

Repair: Repair defects in rubber expansion joint or joint covers with two layers of flashing with the second layer being 3" larger in all directions than the first. Install flashing with manufacturer's recommended cleaners and primers.

Photos and Deficiencies

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:	22	Quantity:	Random	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:	23	Quantity:	Widespread	Priority:	Monitor

Description: Physical damage to membrane including cuts, holes, tears, scrapes, scuffs, or abrasions.

Repair: Apply repair membrane over damaged area, extending repair material a minimum 6" past damage.

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.

Photos and Deficiencies

Defect Code:	8	Quantity:	Random	Priority:	Monitor

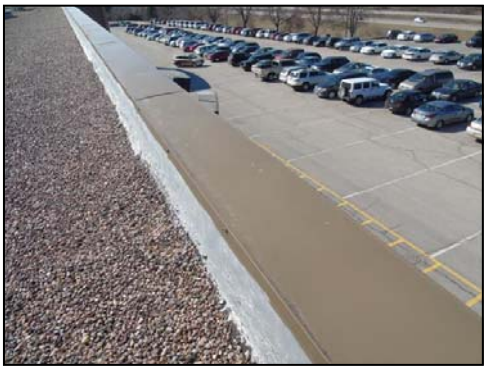
Description: Surface erosion.

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 modifed 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:	15	Quantity:	1	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:	23	Quantity:	Random	Priority:	Monitor

Description: Physical damage to membrane including cuts, holes, tears, scrapes, scuffs, or abrasions.

Repair: Apply repair membrane over damaged area, extending repair material a minimum 6" past damage.

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.

Photos and Deficiencies

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

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:	21	Quantity:	Widespread	Priority:	Monitor

Description: Loose walkway pad or deteriorated paver.

Repair: Readhere or reweld wakway pads. Provide new pads to replace damaged or missing pads. Replace deteriorated concrete pavers with pavers of like kind and weight to ensure a flush walking surface.

Defect Code:	22	Quantity:	Random	Priority:	Monitor

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.

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:	26	Quantity:	Random	Priority:	Monitor

Description: Membrane shrinkage

Repair: Investigate and repair cause of shrinkage. Cut away affected areas and prepare to receive new membrane. Install new membrane and secure at base flashings. Adhere to walls and substrates and reinstall metal copings, counterflashings, and termnation bars to complete the repair. On ballasted systems redistribute ballast evenly.

Defect Code:	45	Quantity:	Widespread	Priority:	Monitor

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.

Defect Code:	88	Quantity:	Widespread	Priority:	Monitor

Description: Skylight defect/cracked/deteriorated

Repair: Remove and replace affected components.

Photos and Deficiencies

Defect Code:	22	Quantity:	Random	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:	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:	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:	57	Quantity:	Widespread	Priority:	Monitor

Description: Expansion joint deficiencies.

Repair: Repair defects in rubber expansion joint or joint covers with two layers of flashing with the second layer being 3" larger in all directions than the first. Install flashing with manufacturer's recommended cleaners and primers.

Photos and Deficiencies

Defect Code:	1	Quantity:	1	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 modifed 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:	22	Quantity:	Random	Priority:	Monitor

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:	23	Quantity:	Under 10 SF	Priority:	First Year

Description: Physical damage to membrane including cuts, holes, tears, scrapes, scuffs, or abrasions.

Repair: Apply repair membrane over damaged area, extending repair material a minimum 6" past damage.

Photos and Deficiencies

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

Defect Code:	46	Quantity:	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:	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:	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.					

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.					

Defect Code:	88	Quantity:	Random	Priority:	Monitor
Description: Skylight defect/cracked/deteriorated					
Repair: Remove and replace affected components.					

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:	21	Quantity:	Widespread	Priority:	Monitor
Description: Loose walkway pad or deteriorated paver.					
Repair: Readhere or reweld wakway pads. Provide new pads to replace damaged or missing pads. Replace deteriorated concrete pavers with pavers of like kind and weight to ensure a flush walking surface.					

Defect Code:	22	Quantity:	Random	Priority:	Monitor
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.					

Photos and Deficiencies

Defect Code:	45	Quantity:	Widespread	Priority:	Monitor
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

Defect Code:	24	Quantity:	Random	Priority:	Monitor

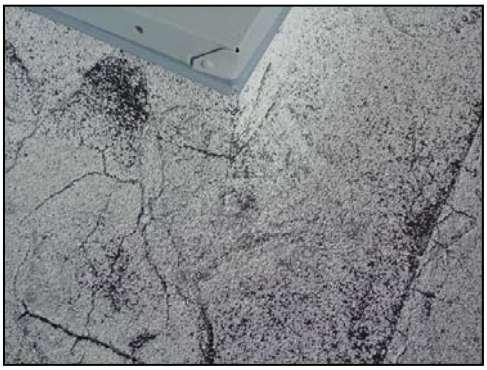
Description: Evidence of past problem and previous repair.

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.



Defect Code:	46	Quantity:	Under 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.

Defect Code:	81	Quantity:	Widespread	Priority:	First Year

Description: Displaced antenna, sign, bracing, support, strap, etc.

Repair: Reattach equipment and repair damages to membrane and flashings.

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 modifed 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:	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.

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.

Photos and Deficiencies

Defect Code:	55	Quantity:	1	Priority:	First Year
Description: Deteriorated or shrunken pitch pan filler.					
Repair: Clean pocket and penetrations of all dirt, insulation, and other materials and debris. Install manufacturer's recommended sealant in prepared pitch pan.					

Defect Code:	56	Quantity:	1	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.					

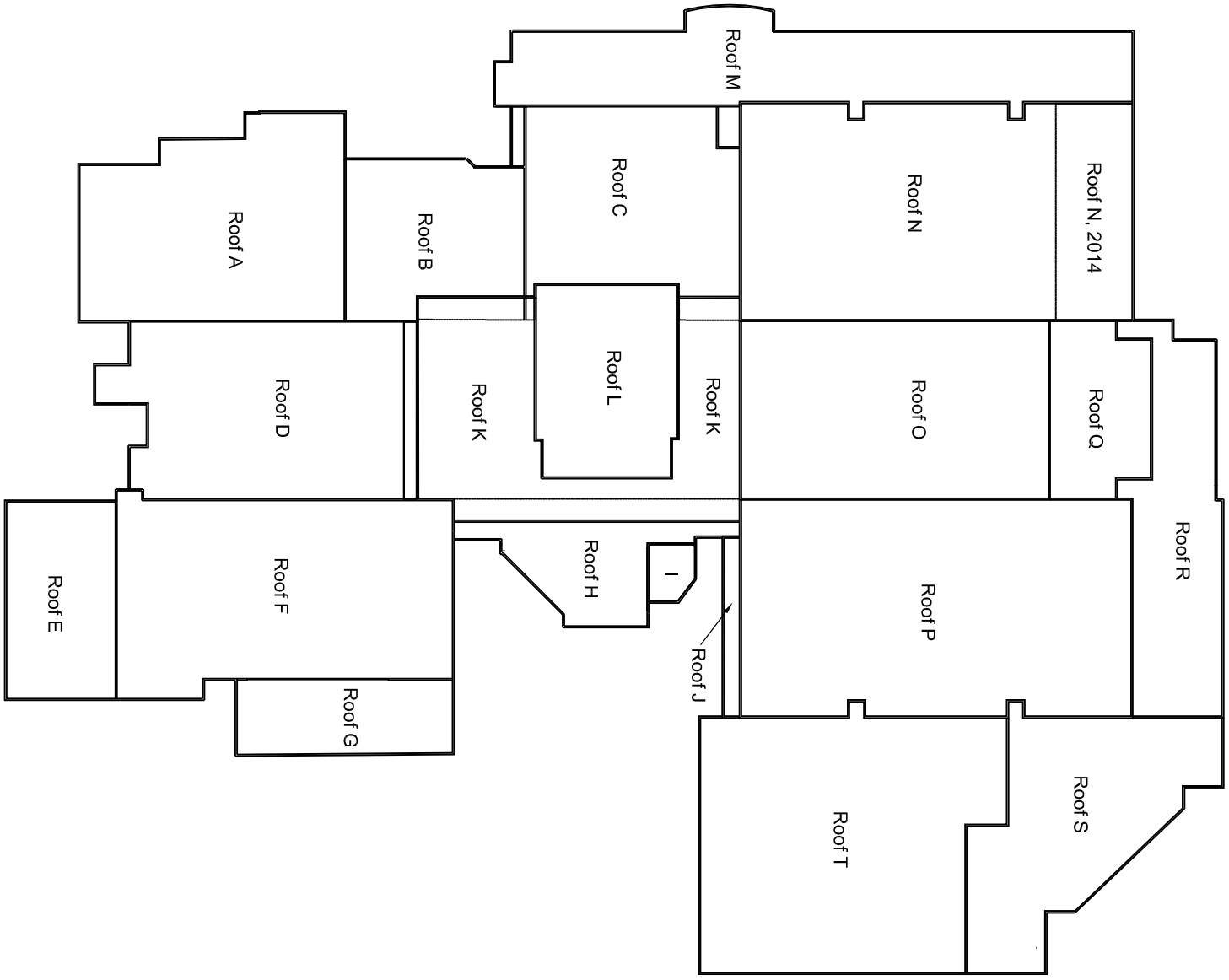
Photos and Deficiencies

Defect Code:	21	Quantity:	Random	Priority:	First Year
Description: Loose walkway pad or deteriorated paver.					
Repair: Readhere or reweld wakway pads. Provide new pads to replace damaged or missing pads. Replace deteriorated concrete pavers with pavers of like kind and weight to ensure a flush walking surface.					

Defect Code:	55	Quantity:	1	Priority:	First Year
Description: Deteriorated or shrunken pitch pan filler.					
Repair: Clean pocket and penetrations of all dirt, insulation, and other materials and debris. Install manufacturer's recommended sealant in prepared pitch pan.					

Defect Code:	71	Quantity:	Random	Priority:	Monitor
Description: Open or missing joint cover.					
Repair: Replace joint covers that are open or missing with matching joint covers and sealant.					

Defect Code:	87	Quantity:	2	Priority:	Monitor
Description: Mechanical defect					
Repair: Repair mechanical defect. Replace or reinstall missing access doors and panels. Reseal rooftop unit, pans, ducts, curbs, etc.					



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Sheet Number:	Date:	Drawn By:	Project Number:	Sheet Title:
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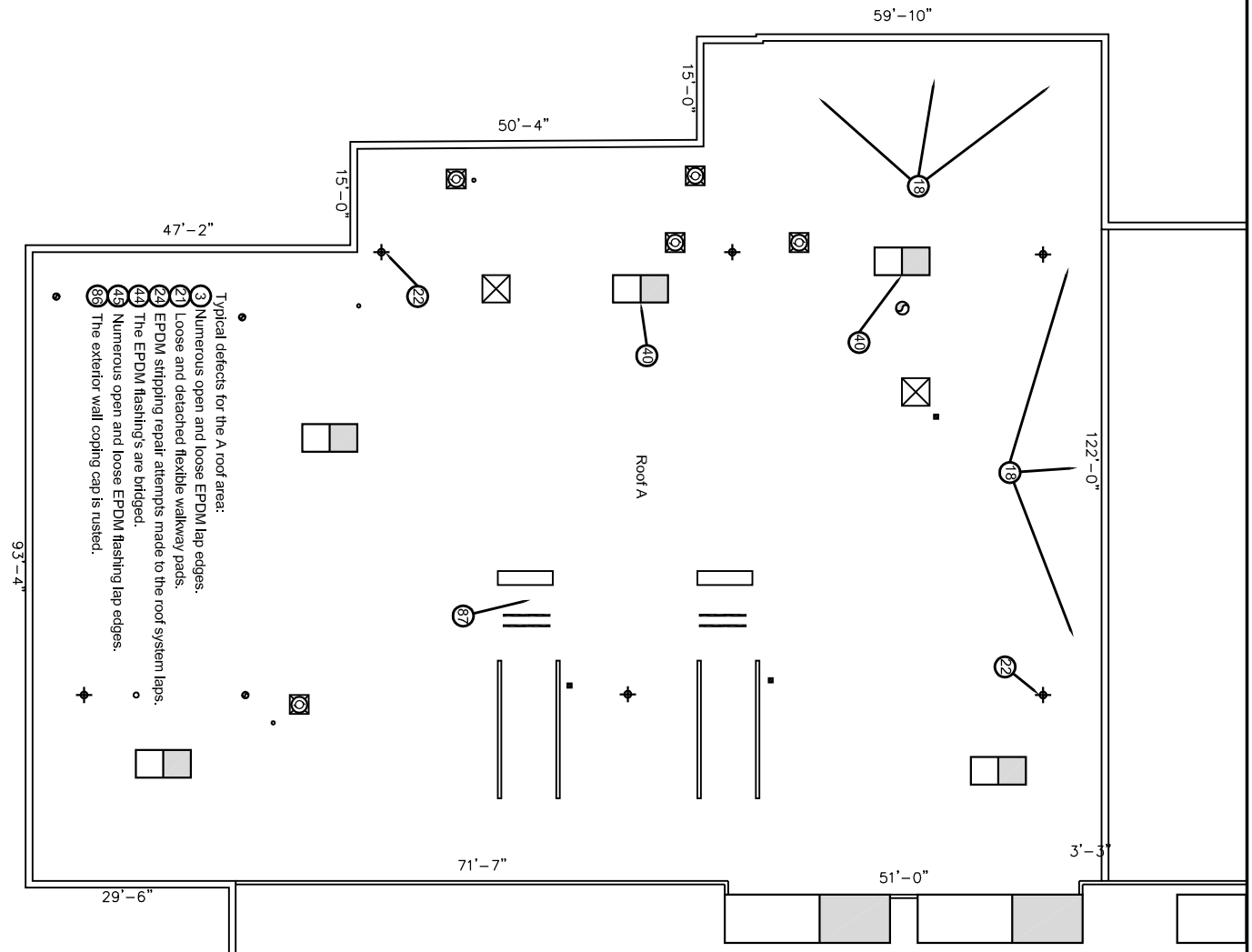
DRAWING LEGEND

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



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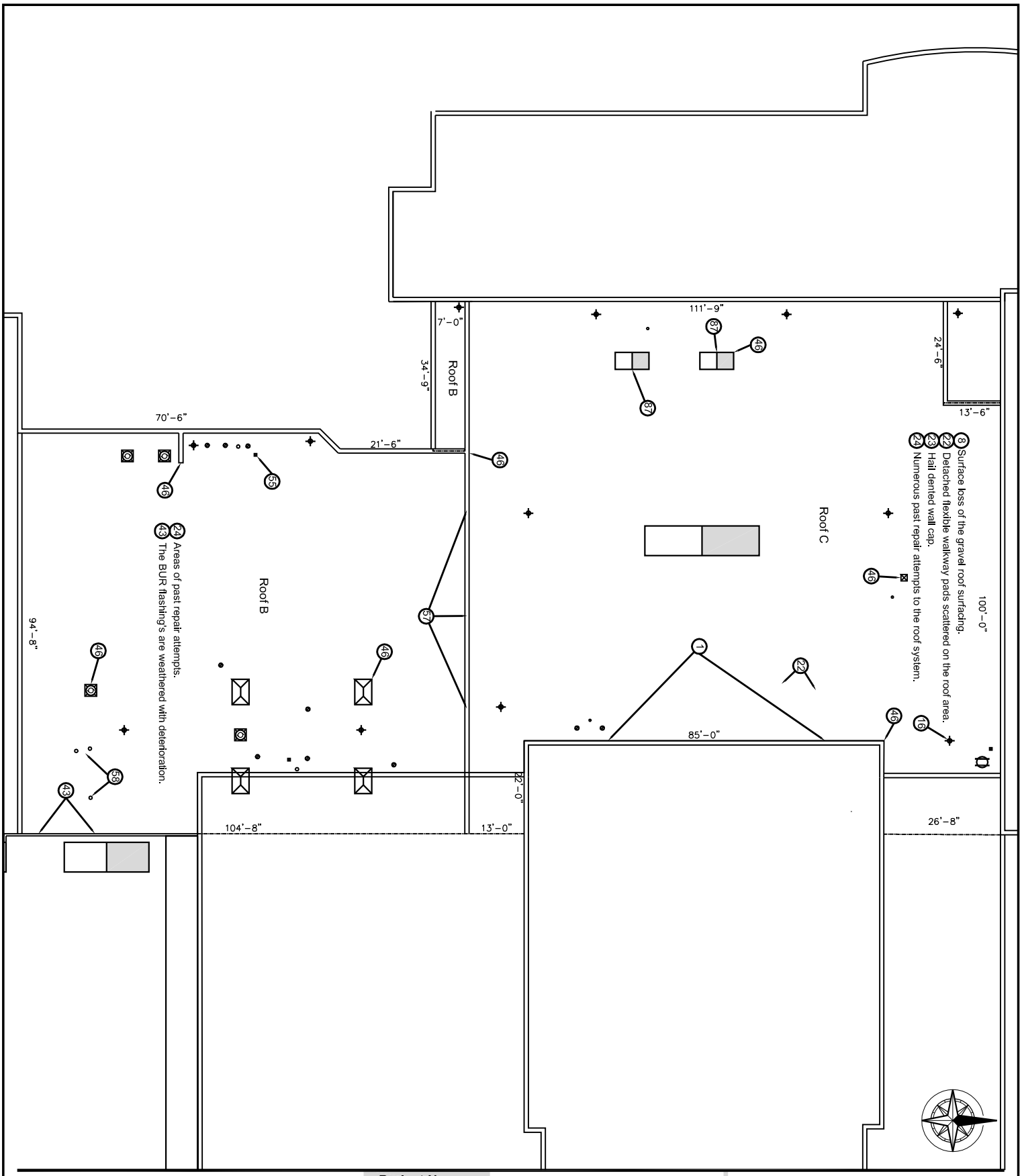

DRAWING LEGEND

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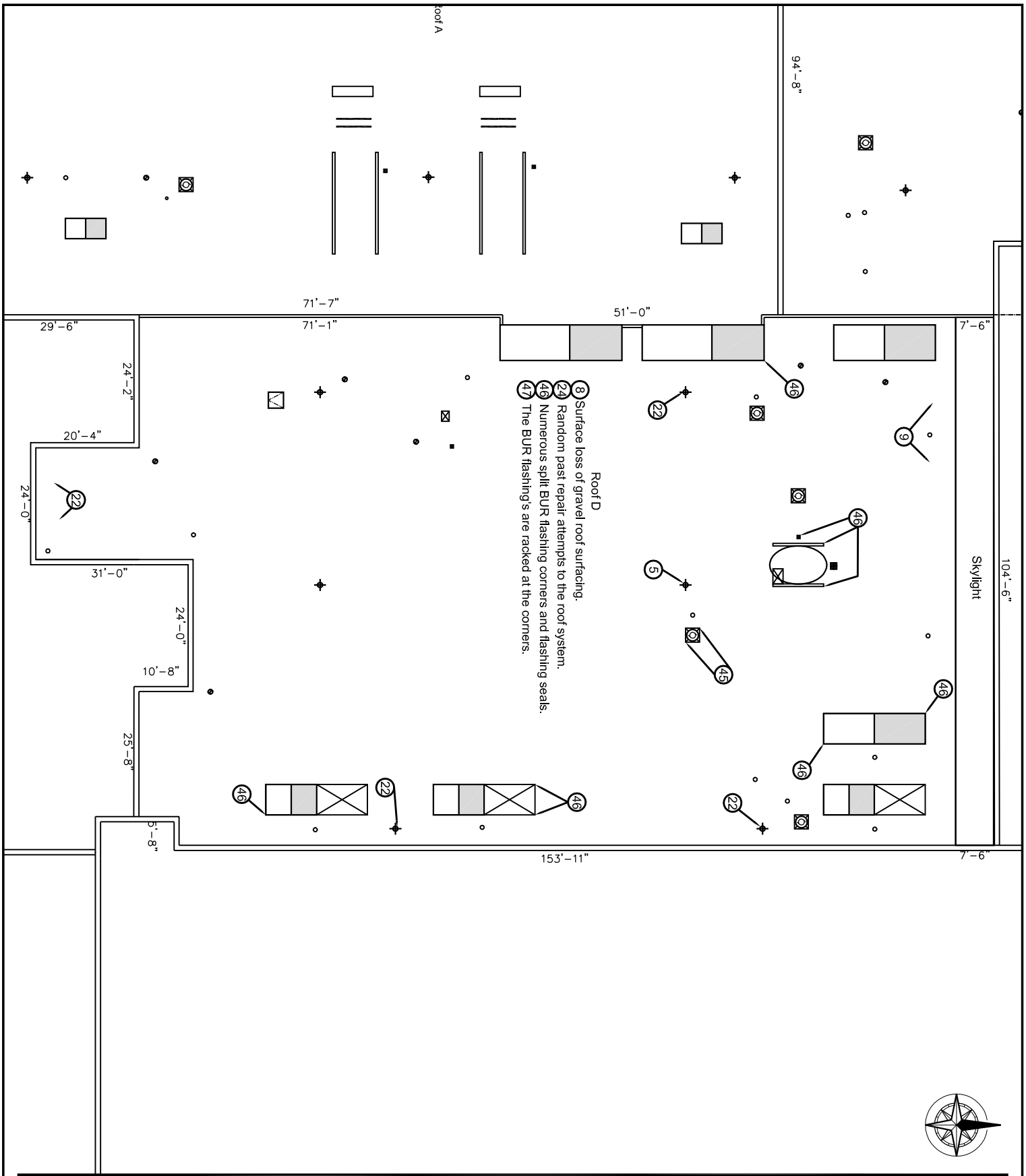

DRAWING LEGEND

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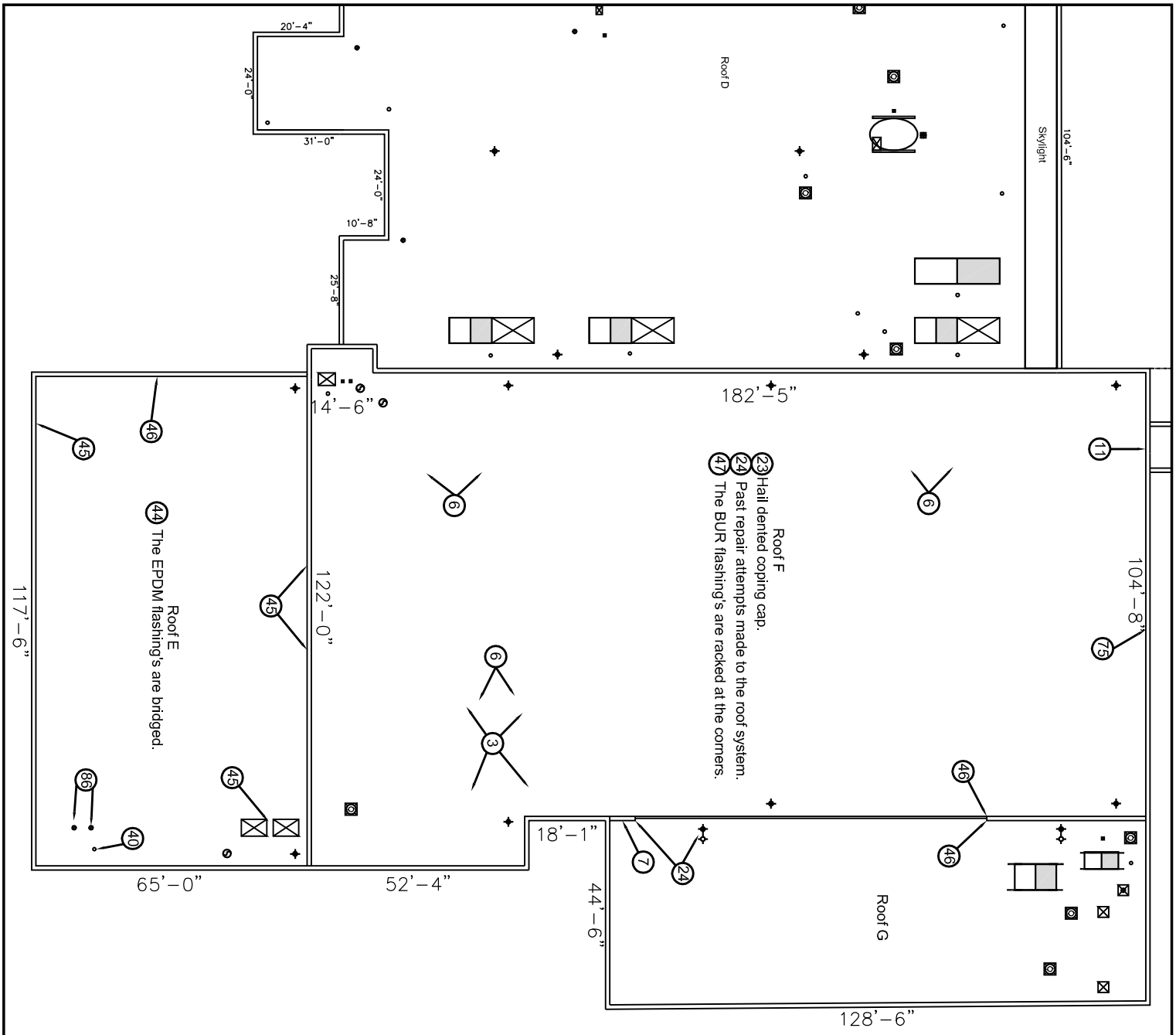
Sheet Number:	Date:	Drawn By:	Project Number:	Sheet Title:
01 of 01	03/01/2017	GH	00-000000	D-Roof Plan



DRAWING LEGEND

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

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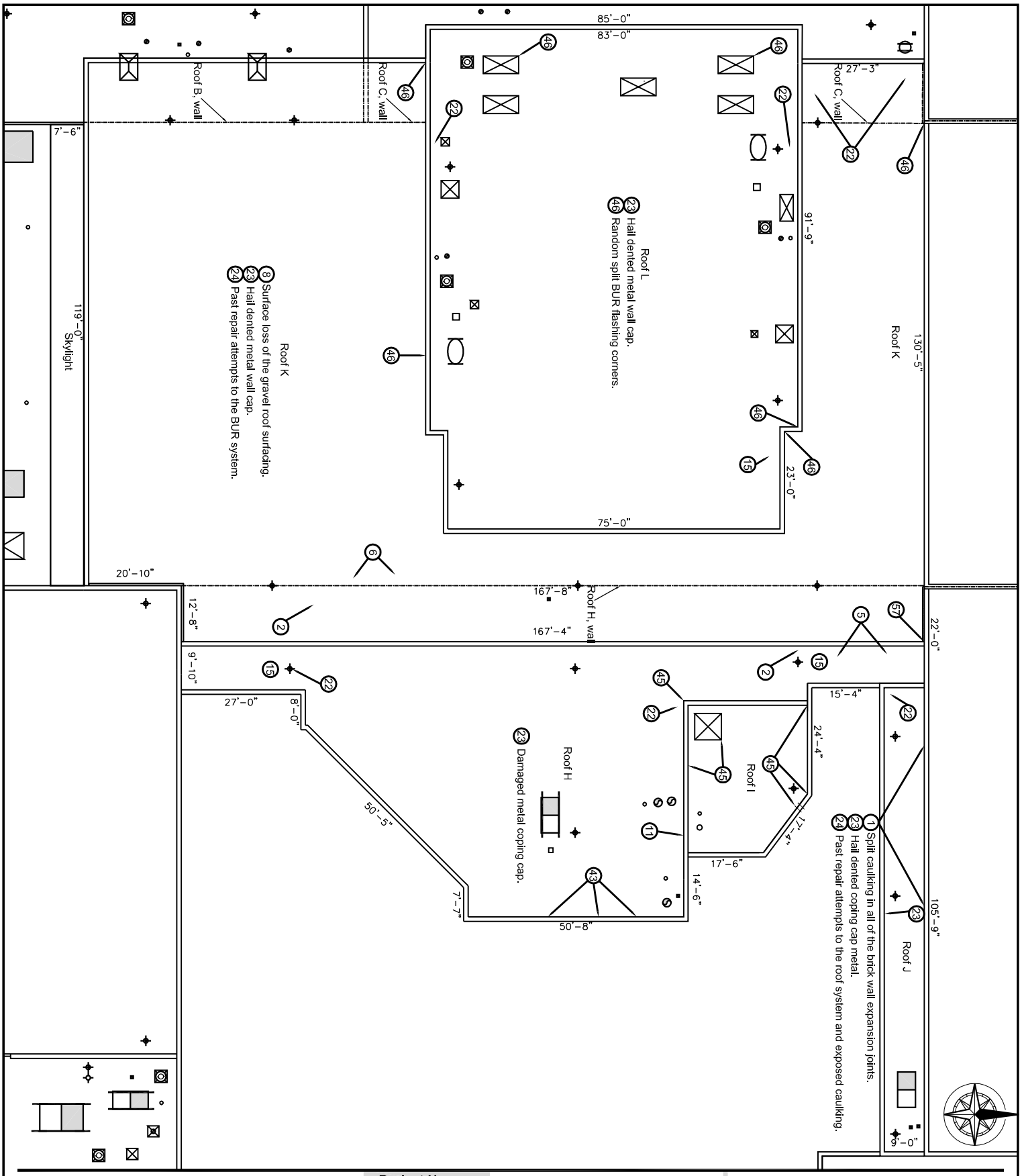
Project Name: Bellevue West High School

Project Address: 1501 Thurston Avenue
Bellevue, NE 68123

Sheet Number:	Date:	Drawn By:	Project Number:	Sheet Title:
01 of 01	03/01/2017	GH	00-000000	E,F&G-Roof Plan



DRAWING LEGEND

DRAIN
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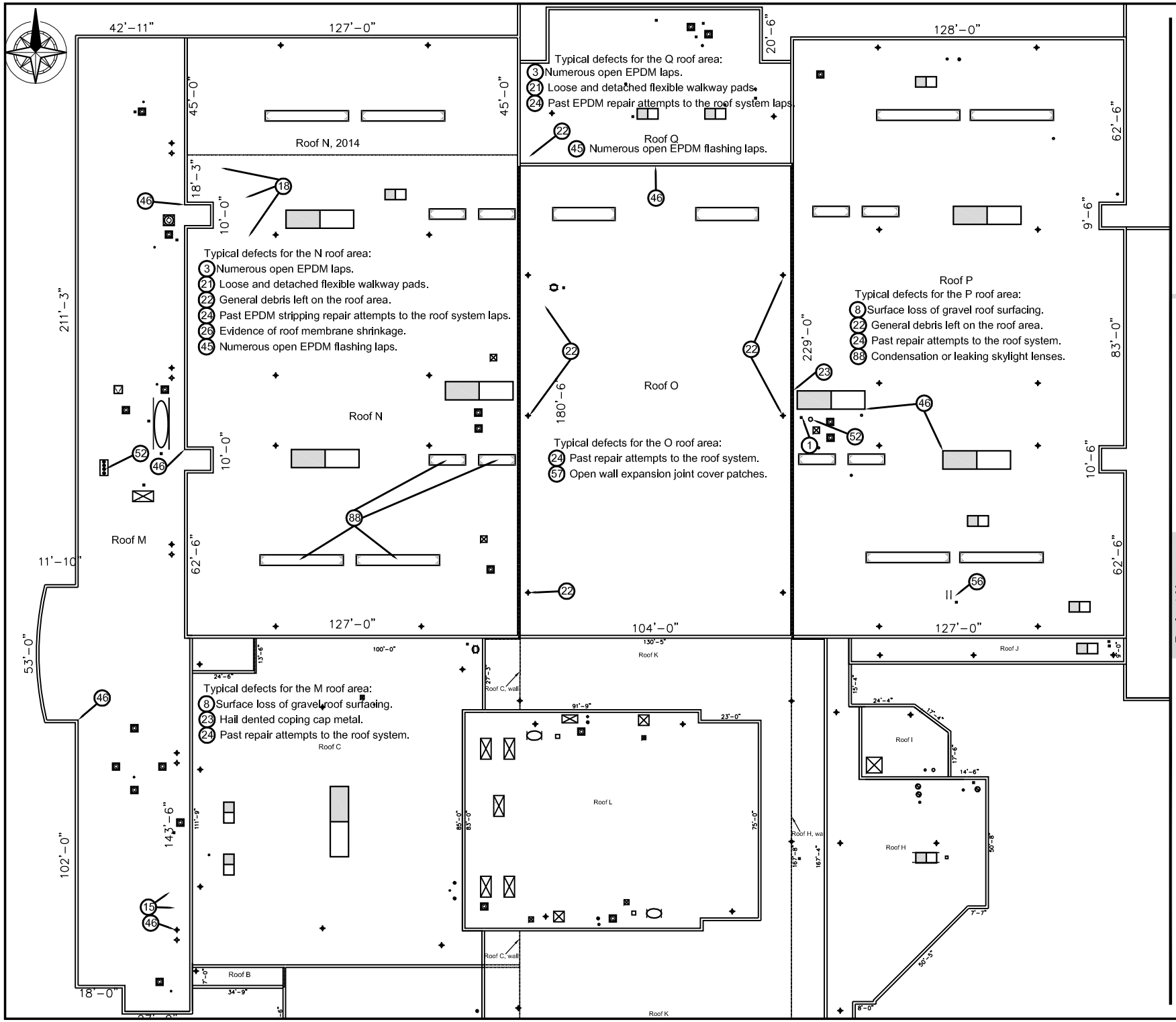

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Sheet Title: H,I,J,K&L-Roof Plan

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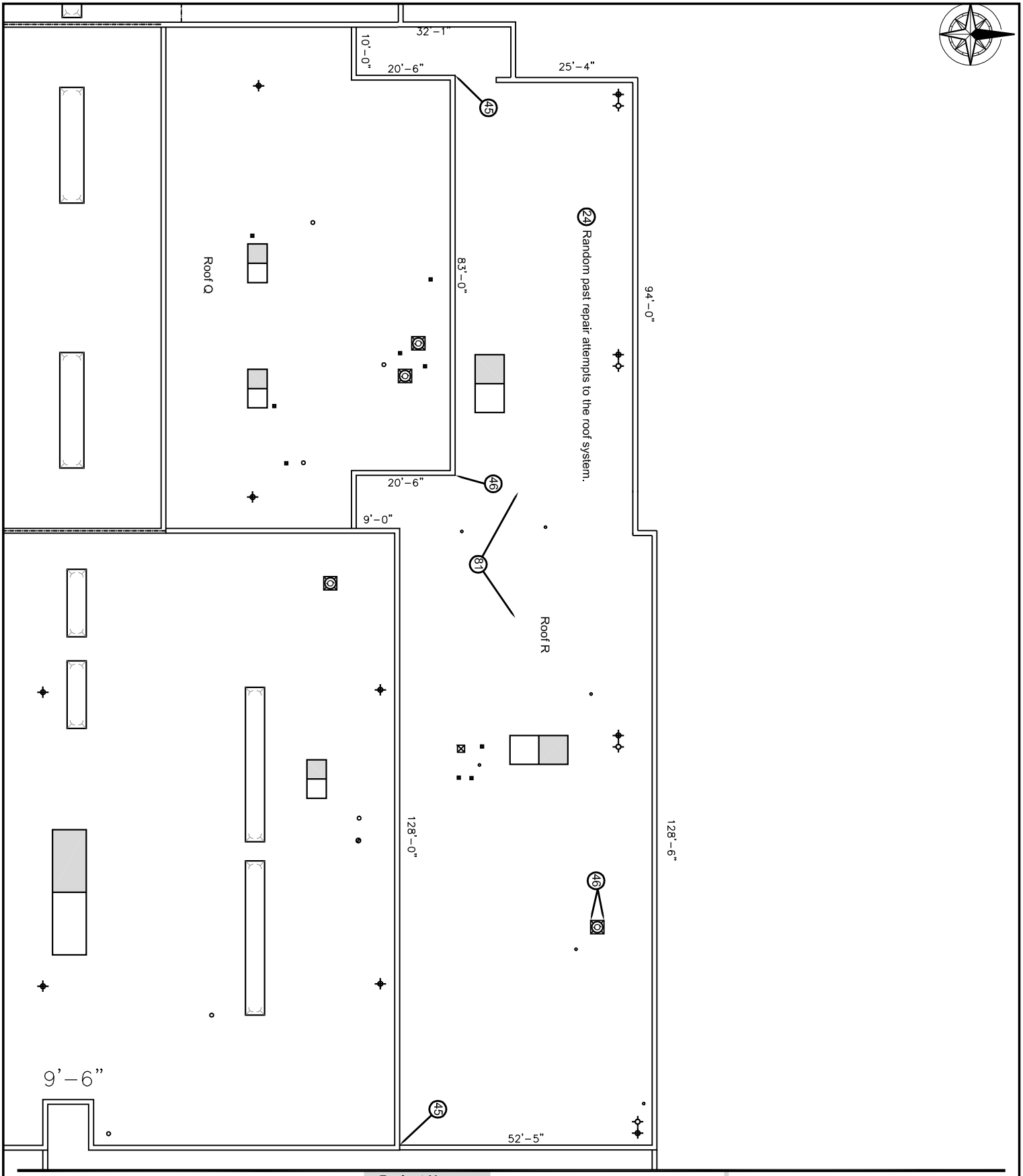
Drawn By: GH

Date: 03/01/2017

Sheet Number: 01 of 01



DRAWING LEGEND

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DRAWING LEGEND

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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.