

Chesterfield County

9800 Government Center Parkway
Chesterfield, VA 23832

Bon Air Fire Department Company #4



**2600 Polo Parkway
Midlothian, VA**

11/7/2017

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INTRODUCTION TO REPORT FORMAT

The following condition codes are intended to provide a summary of the overall condition of each roof system.

Below is a listing of the condition codes used and their associated meaning:

ROOF CONDITION CODE	DESCRIPTION
Failed 0-1 Years Remaining Service Life	Removal and replacement of the roof system within the next 12 months is recommended due to the severity of deterioration.
Poor 2-4 Years Remaining Service Life	The roof assembly has surpassed or is nearing the end of its useful service life. Replacement will be required in the near future but can be temporarily postponed with strategic repairs until the frequency of leaks becomes unacceptable to internal operations or on-going repair costs become prohibitive.
Fair 5-7 Years Remaining Service Life	The roof system is serviceable yet requiring repairs and routine maintenance to maintain. Repairs should be implemented in a timely manner to prevent further development.
Good 8 Plus Years Remaining Service Life	Only minor repairs required or early in service life with no repairs required. Repairs should be implemented in a timely manner to prevent further development.

On the Detailed Deficiency Listing page of the report is a Deficiency Priority. It is located on the left hand margin of the page. Each deficiency is given a priority for completing the needed correction, depending on the urgency of the problem. The keys to the priority codes are as follows:

"E" Emergency - Correct immediately - Life Safety or Possibility of Personal Injury is a Major Concern

"C" Critical - Urgent need for immediate repair to avoid imminent failure with risk to life safety or risk of major disruption to operations

"S" Significant - Lack of immediate attention may lead to much higher repair cost or premature failure of roof system within 12 months

"M" Minor - Not an immediate concern, but should be scheduled for repair

"MN" Monitor - Defect should be addressed at time of roof system replacement or re-inspected annually for further deterioration that would support reclassification to a higher risk category

"N/A" – Not Applicable - No Corrective Action Required

INTRODUCTION TO REPORT FORMAT

(Cont'd)

In the event a corrective action is considered routine maintenance for completion sometime with in the next 1-5 years, the following Deficiency Priority Codes will be used.

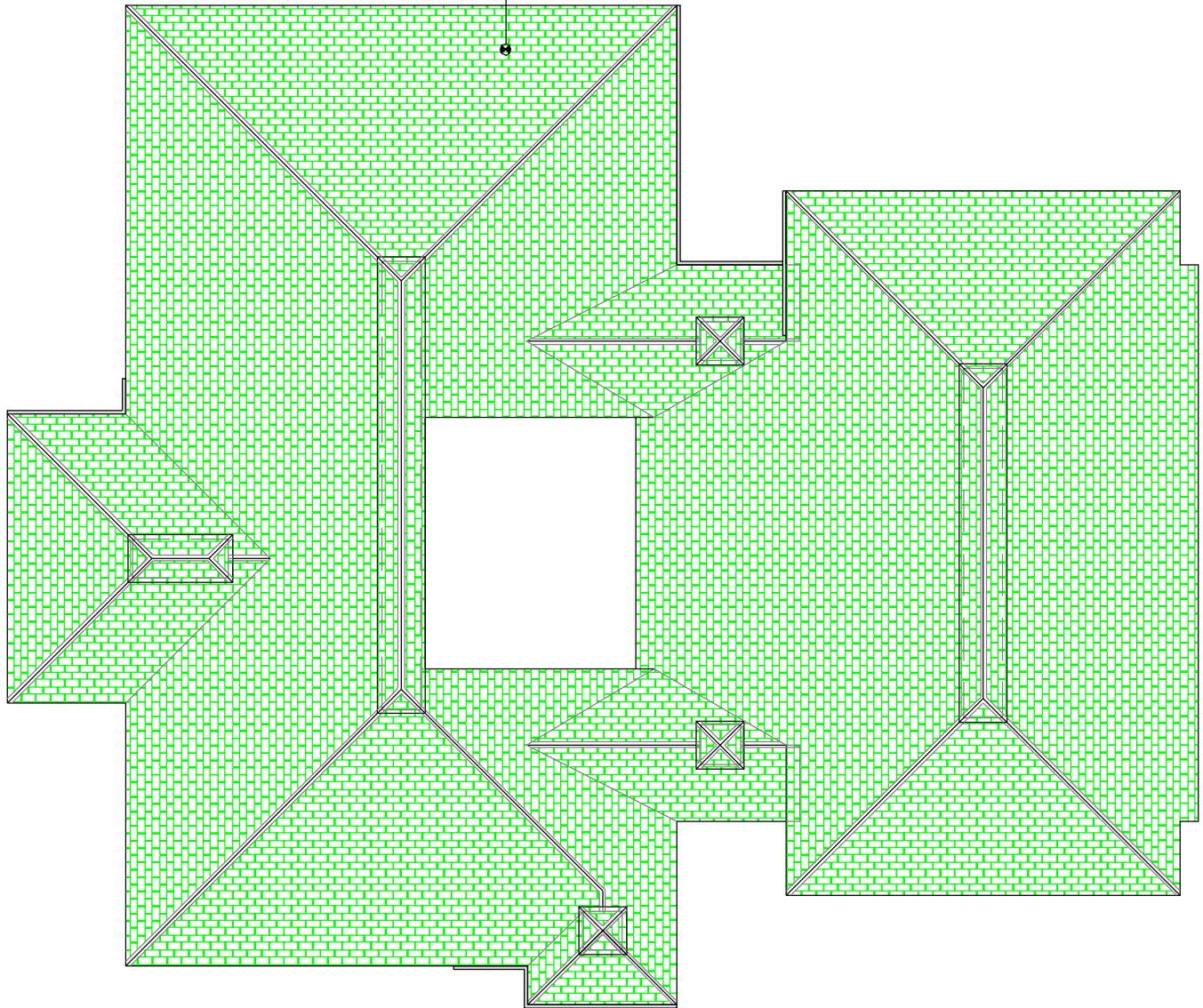
1 - First Year	Complete within first year
2 - Second Funding Year	Complete during funding year 2
3 - Third Funding Year	Complete during funding year 3
4 - Fourth Funding Year	Complete during funding year 4
5 - Fifth Funding Year	Complete during funding year 5


This information, along with the Summary information, should allow for prioritizing the needs of each roof area and development of a maintenance and capital improvement budget.

Several items have been taken into consideration in establishing anticipated service life and budget estimates.

Service life estimates are based on data obtained through our field survey, historical experience and practical considerations of required repairs and the assumption that routine maintenance procedures, including annual inspections will be followed.

● SLATE
11,774 SQ. FT. +/-
SLATE ROOF TILES



FAILED	POOR	FAIR	GOOD	
0-1 YEARS REMAINING SERVICE LIFE	2-4 YEARS REMAINING SERVICE LIFE	5-7 YEARS REMAINING SERVICE LIFE	8+ YEARS REMAINING SERVICE LIFE	

PROJECT KEY PLAN
NOT TO SCALE

5890-515 (108)

ROOF CONSULTING SERVICES, INC
 P.O. BOX 9747
 RICHMOND, VIRGINIA 23228
 * SURVEYS * SPECIFICATIONS * INSPECTIONS *

Date: 11/07/2017
 Project: BON AIR FIRE DEPARTMENT COMPANY #4
 Address: 2600 POLO PARKWAY
 MIDLOTHIAN, VA



Roof System Condition Evaluation Report

Project Information

Facility Name: Bon Air Fire Department Company
#4
2600 Polo Parkway
Midlothian, VA

Contact: Jeff Tignor

Phone: (804) 717-6144 **Cell:** (804) 387-0371

Email: tignorj@chesterfield.gov

Total Roof Area Sq. Ft. (+/-): 11,774

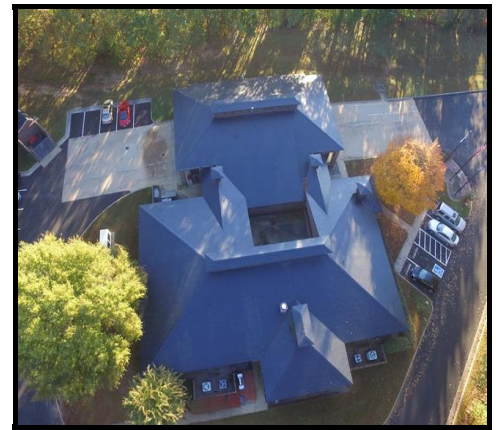
Exterior Wall Type: Masonry

Year Building Built: N/D

Exterior Wall Condition: Good

Building Use: Fire Station

Exterior Moisture Staining: Minor



Roof Areas Summary

Roof Area Identification	Size (sq/ft)	Roof Type	Year Installed	Remaining Life (Yrs)	Roof Condition Code	Replace Year	Replacement Cost Estimate	Repair Cost Estimate
Slate	11,774	Slate Roof Tiles	N/D	10 Plus	Good	2027	\$211,932.00	\$3,425.00
Totals	11,774	Sq Ft					\$211,932.00	\$3,425.00

Project Comments:

On Friday November 3, 2017, a comprehensive visual roof inspection was completed on Bon Air Fire Department Company # 4 located at 2600 Polo Parkway, Midlothian, Virginia 23113. The purpose of this inspection was document observed roof system deficiencies, determine the overall condition of the existing roof system and to estimate the remaining service life of the in-place roof assembly.

The installed roofing consists of a synthetic slate steep slope system complete with flashings and incidentals for a complete assembly over a cementitious wood fiber roof deck. The original completion date of the installed roofing is not known. The installed assembly is revealing signs of stress and overall wear, in areas, but is generally considered in Good condition.

For repairs, we have estimated a total repair cost of \$3,425.00. This repair cost estimate is based on all recommended repairs being completed under a single work order. In the event only selective items are repaired, then the estimated cost is subject to an increase in overall repair cost.

Please reference the Roof Area Information, Detailed Deficiency Listing, Photograph Documentation and Roof Plan drawing sections of this report for the detailed information pertaining to our findings and recommendations for corrective action.

Roof Area Information For:

Bon Air Fire Department Company #4
2600 Polo Parkway
Midlothian, VA

Roof Area - Slate

Roof System Data

Area Name: Slate	Year Installed: N/D	Active Leaks: None Reported
Size Sq. Ft. (+/-): 11,774	Remaining Service Life (Years): 10 Plus	Leak History: Minor
Roof Elevation: 20' - 40' +/-	Average Roof System R Value: N/D	Leak Sensitivity: Normal

Roofing Contractor:

Company: Unknown
Contact: Unknown
Phone: N/D

Guarantee Info:

Guarantee (Y/N): Unknown
Manufacturer: Unknown
Guarantee Term: Unknown
Guarantee Number: Unknown
Expiration Date: Unknown

Roof System:

Roof System Type: Slate Roof Tiles
Roof Membrane Type: Slate Roof Tiles
Membrane Condition: Good
Roof Surfacing Type: None
Recovery System: No

Roof Deck and Support Structure:

Deck Type: Plywood Sheathing
Deck Thickness: 5/8 Inch
Roof Truss Type: Wood Frame
Truss Height: N/D
Truss Span: N/D
Truss Spacing: 24" o.c.

Vapor Retarder:

Vapor Retarder: N/At
Type: N/A
Location: N/A
Attachment: N/A
Condition: N/A
Relative Humidity: N/D

Maintenance Items:

Mechanical Damage: None Observed
Chemical Exposure: No
Roof Traffic: Service
Debris: Yes

Base Flashings:

Flashing Type: Metal
Height: 6" - 12"
Coated: No
Cant Strip Type: N/A
Condition: Good
Securement: Mechanical

Counter Flashing:

Reglet Joint: **Surface Mount:**
Thru Wall: **Term Bar:**
CF Metal Type: Aluminum

Perimeter Types:

Gravel Stop Type: N/A
Gravel Stop Condition: N/A
Parapet Wall Type: N/A
Parapet Wall Condition: N/A
Wall Coping Type: N/A
Wall Coping Condition: N/A
Wall Coping Size: N/A
Metal Coping Material Type: N/A
Metal Coping Quantity: N/A
Expansion Joint Type: N/A
Expansion Joint Condition: N/A

Penetrations:

Penetrations:	Quantity:
Soil Stacks: <input checked="" type="checkbox"/>	<input type="text" value="3"/>
Exhaust Units: <input checked="" type="checkbox"/>	<input type="text" value="1"/>
Standard Curbs: <input type="checkbox"/>	<input type="text" value="0"/>
Pipe Supports: <input type="checkbox"/>	<input type="text" value="0"/>
Pitch Pans: <input type="checkbox"/>	<input type="text" value="0"/>
Roof Hatch: <input type="checkbox"/>	<input type="text" value="0"/>
Hot Stacks: <input type="checkbox"/>	<input type="text" value="0"/>
Skylights: <input type="checkbox"/>	<input type="text" value="0"/>
Smoke Hatch: <input type="checkbox"/>	<input type="text" value="0"/>
Other: <input type="checkbox"/>	<input type="text" value="0"/>

Drainage:

Drainage: Good
Slope: 5/12 - 6/12
Ponding Water: No
Drainage Comments: No ponding water observed during this inspection

Item:

Size:

Material Type:

Quantity:

Condition:

Roof Drains: <input type="checkbox"/>	N/A	N/A	0	N/A
Scuppers: <input type="checkbox"/>	N/A	N/A	0	N/A
Gutters: <input checked="" type="checkbox"/>	5"	Aluminum	105 +/- LF	Good
Downspouts: <input checked="" type="checkbox"/>	4" x 4"	Aluminum	4	Good

Roof Area Information For:

Bon Air Fire Department Company #4

2600 Polo Parkway

Midlothian, VA

Roof Area - Slate

Asbestos Material Testing:

Performed:	Results:	Required:
Membrane: No	Membrane: Not Part of Contract	Membrane: Yes
Flashing: No	Flashing: AB Test Not Performed	Flashing: Yes
Repairs: No	Repairs: AB Test Not Performed	Repairs: Yes
Other: No	Other: AB Test Not Performed	Other: No

Roof Moisture Survey:

Moisture Survey Completed:	No
Results:	N/A
Number of Anomalies:	N/A
% of Wet Roof Area:	N/A
Total Sq. Ft. of Wet Roof Area:	N/A

Sq. Ft.

Roof System Composition

Layer No	Layer Type	Thickness	Attachment	Condition
1	Plywood Sheathing	5/8 Inch	Mechanical	Good
2	Suspected Underlayment	#30	Mechanical	N/D
3	Synthetic Slate	3/8" - 5/8" +/-	Mechanical	Good

Roof Condition Code: Good

Recommendation: Repair

Replacement Year: 2027

Replacement Cost (+/-): \$211,932.00

Deficiencies Repair Cost: \$3,425.00

Budget Notes:

The budget estimate does not include pricing for asbestos or lead abatement, if required, or for any unforeseen conditions that may exist. Deficiency repair costs are based on all work being completed under one work order.

Roof Area Comments:

As stated, we have completed a comprehensive visual roof inspection for the Bon Air Fire Department Company # 4 located at 2600 Polo Parkway, Midlothian, Virginia 23113. The purpose of this inspection was document observed roof system deficiencies, determine the overall condition of the existing roof system and to estimate the remaining service life of the in-place roof assembly.

It is important to note that the installed roofing is a thin manufactured synthetic slate versus a typically mined roofing slate. Extreme caution should be provided when accessing this roofing system as foot pressure can and will provide cracking of the slates. Consequently, RCS provided this evaluation with the use of a drone versus physically walking the roof surface.

The installed roofing utilizes the "closed valley" approach for the valley detailing. Closed valleys are not closed in the sense that the slate forms a continuous moisture barrier across the valley, but in the sense that there is no gap down the center of the valley. Beneath the slate, the valley should be lined with heavy-duty underlayment or metal. The remaining hips and ridges are installed in acceptable standards with an overall condition rating of Good.

Roof Area Information For:

Bon Air Fire Department Company #4

2600 Polo Parkway

Midlothian, VA

Roof Area - Slate

The existing roof system is a slate tile system installed over a plywood deck and standard wood trusses. Between the rafter is loose batt fiberglass insulation supported between the rafters with chicken wire. Drainage is facilitated by 105 LF of gutters and 4 downspouts. No information pertaining to the date of installation, roof system manufacturer or any warranty that may be in effect was provided by the Owner for the installed roofing.

The overall condition of these roof areas is Good. Seven (7) types of deficient conditions were observed during the course of this investigation. A comprehensive list of these deficient conditions can be found in the Detailed Deficiency Listing section of this report. With corrections to the noted deficiencies and routine maintenance, the Owner should realize an additional 10 Plus years of service life from the installed roof system.

The roof replacement budget estimate is based on the existing slate roof system being removed down to the structural decking and new 40 year dimensional shingles being installed that include all trim metals, accessories and a standard manufacturers shingle warranty.

Detailed Deficiency Listing For:
Bon Air Fire Department Company #4
2600 Polo Parkway - Midlothian, VA
Roof Area - Slate

Deficiency Priority Codes:

Current Year Priorities

E - Emergency
 C - Critical
 S - Significant
 M - Minor
 MN - Monitor

Future Year Maintenance

1 - First Year Funding
 2 - Second Year Funding
 3 - Third Year Funding
 4 - Fourth Year Funding
 5 - Fifth Year Funding

N/A - Not Applicable

No Correction Action
 Required

Inspection Date: 11/7/2017

Inspectors: Daniel Sanders, Jr.

NUMBER	PRIORITY CODE	DEFICIENCY DESCRIPTION	QUANTITY	UNIT PRICE	REPAIR COST
		DEFICIENCY SOLUTION	UNITS		
1	M	Missing / damaged slate tiles	23	\$100.00	\$2,300.00
		Remove damaged slate tiles and install new slates to match existing type, size, thickness and length, secured to substrate with copper slate bibs	Each		
2	M	Debris on roof surface	1	\$25.00	\$25.00
		Remove and properly dispose of all debris	Location		
3	M	Debris in gutter	5	\$50.00	\$250.00
		Remove and properly dispose of all debris to provide positive drainage from gutter to downspouts	Locations		
4	M	Vegetative growth (mold) on roof surface	1	\$100.00	\$100.00
		Staining on the roof surface is directly related to the Northern exposure of the installed roofing. Remove and properly dispose of all vegetative growth with commercial grade soap and bristle brush. Rinse clean.	Location		
5	M	Tree limbs / branches overhanging roof surface	3	\$100.00	\$300.00
		Contact a local tree service to have the overhanging limbs to prevent prevent damage to roof surface and reduce organic debris accumulation	Locations		
6	M	Loose slate tiles	2	\$100.00	\$200.00
		Re-install tiles to prevent them from sliding off roof and to provide a watertight condition	Locations		

Detailed Deficiency Listing For:
Bon Air Fire Department Company #4
2600 Polo Parkway - Midlothian, VA
Roof Area - Slate

Deficiency Priority Codes:

Current Year Priorities

E - Emergency
 C -Critical
 S - Significant
 M - Minor
 MN - Monitor

Future Year Maintenance

1 - First Year Funding
 2 - Second Year Funding
 3 - Third Year Funding
 4 - Fourth Year Funding
 5 - Fifth Year Funding

N/A - Not Applicable

No Correction Action
 Required

Inspection Date: 11/7/2017

Inspectors: Daniel Sanders, Jr.

NUMBER	PRIORITY CODE	DEFICIENCY DESCRIPTION	QUANTITY	UNIT PRICE	REPAIR COST
		DEFICIENCY SOLUTION	UNITS		
7	M	Improper flashing detail at exhaust unit	1	\$250.00	\$250.00
		Due to the unit being flashed with metal flashing, the expanding and contracting of the metals has caused the sealants to deteriorate and open. It is our recommendation that an adhered membrane be installed as though this was a low slope detail penetrating the primary membrane. Flashing over the existing base metal and terminate at the top of the exhaust unit. The top can be terminated using over sized backer-rod to prevent the need for fasteners (similar to a typical roof hatch detail).	Location		

Grand Total **\$3,425.00**

Priority Code Totals:

Minor **\$3,425.00**

Photograph Documentation

**Bon Air Fire Department Company #4 - 2600 Polo Parkway
Midlothian, VA**

Roof Area - Slate

**1. Building Exterior - Elevation
Overview**



**2. Building Exterior - Elevation
Overview**



11/7/2017

Photograph Documentation

Bon Air Fire Department Company #4 - 2600 Polo Parkway

Midlothian, VA

Roof Area - Slate

**3. Building Exterior - Elevation
Overview**



**4. Building Exterior - Elevation
Overview**



11/7/2017

Photograph Documentation

Bon Air Fire Department Company #4 - 2600 Polo Parkway

Midlothian, VA

Roof Area - Slate

**5. Building Exterior - Elevation
Overview**



**6. Building Exterior - Elevation
Overview**



11/7/2017

Photograph Documentation

Bon Air Fire Department Company #4 - 2600 Polo Parkway

Midlothian, VA

Roof Area - Slate

7. Roof System Overview



8. Roof System Overview



11/7/2017

Photograph Documentation

**Bon Air Fire Department Company #4 - 2600 Polo Parkway
Midlothian, VA
Roof Area - Slate**

9. Roof System Overview



10. Roof System Overview



11/7/2017

Photograph Documentation

**Bon Air Fire Department Company #4 - 2600 Polo Parkway
Midlothian, VA
Roof Area - Slate**

11. Roof System Overview



12. Roof System Overview



11/7/2017

Photograph Documentation

Bon Air Fire Department Company #4 - 2600 Polo Parkway

Midlothian, VA

Roof Area - Slate

13. Roof System Overview



14. Roof System Overview



11/7/2017

Photograph Documentation

Bon Air Fire Department Company #4 - 2600 Polo Parkway

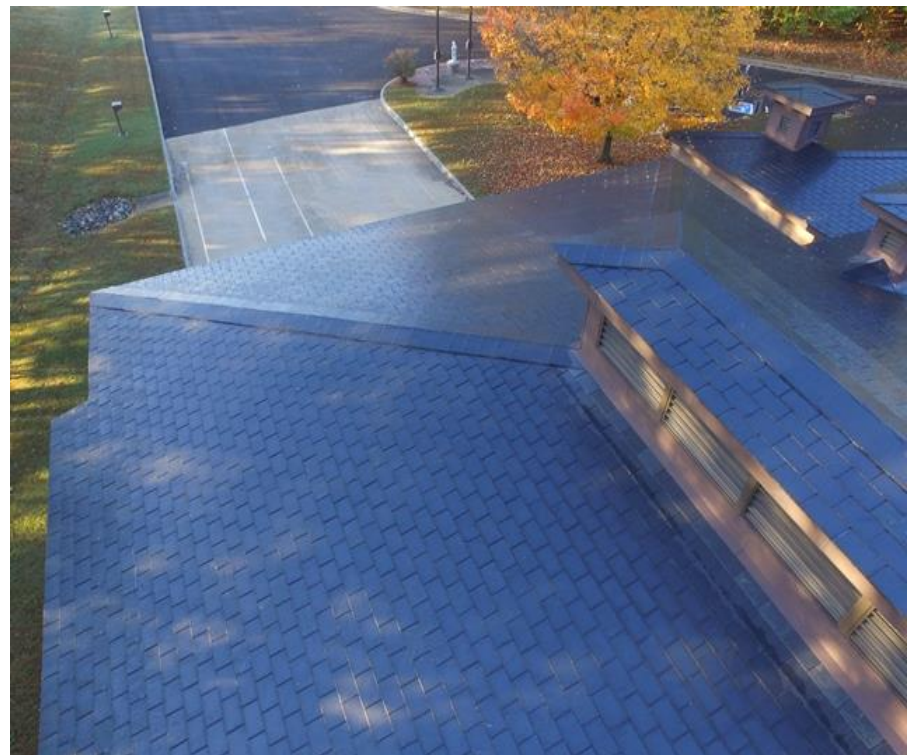
Midlothian, VA

Roof Area - Slate

15. Roof System Overview



16. Roof System Overview



11/7/2017

Photograph Documentation

**Bon Air Fire Department Company #4 - 2600 Polo Parkway
Midlothian, VA**

Roof Area - Slate

17. Roof System Overview



18. Roof System Overview



11/7/2017

Photograph Documentation

**Bon Air Fire Department Company #4 - 2600 Polo Parkway
Midlothian, VA
Roof Area - Slate**

19. Roof System Overview



20. Roof System Overview



11/7/2017

Photograph Documentation

Bon Air Fire Department Company #4 - 2600 Polo Parkway

Midlothian, VA

Roof Area - Slate

21. Roof System Overview



22. Roof System Overview



11/7/2017

Photograph Documentation

Bon Air Fire Department Company #4 - 2600 Polo Parkway

Midlothian, VA

Roof Area - Slate

23. Roof System Overview



24. Roof System Overview



11/7/2017

Photograph Documentation

Bon Air Fire Department Company #4 - 2600 Polo Parkway

Midlothian, VA

Roof Area - Slate

25. Roof System Overview



26. Roof System Overview



11/7/2017

Photograph Documentation

Bon Air Fire Department Company #4 - 2600 Polo Parkway

Midlothian, VA

Roof Area - Slate

27. Deficiency #1 - Missing /
damaged slate tiles



28. Deficiency #1 - Missing /
damaged slate tiles



11/7/2017

Photograph Documentation

Bon Air Fire Department Company #4 - 2600 Polo Parkway

Midlothian, VA

Roof Area - Slate

29. Deficiency #2 - Debris on roof surface



30. Deficiency #2 - Debris on roof surface



11/7/2017

Photograph Documentation

Bon Air Fire Department Company #4 - 2600 Polo Parkway

Midlothian, VA

Roof Area - Slate

31. Deficiency #3 - Debris in gutter



32. Deficiency #3 - Debris in gutter



11/7/2017

Photograph Documentation

Bon Air Fire Department Company #4 - 2600 Polo Parkway

Midlothian, VA

Roof Area - Slate

33. Deficiency #4 - Vegetative growth (mold) on roof surface



34. Deficiency #4 - Vegetative growth (mold) on roof surface



11/7/2017

Photograph Documentation

Bon Air Fire Department Company #4 - 2600 Polo Parkway

Midlothian, VA

Roof Area - Slate

**35. Deficiency #5 - Tree limbs /
branches overhanging roof surface**



**36. Deficiency #5 - Tree limbs /
branches overhanging roof surface**



11/7/2017

Photograph Documentation

Bon Air Fire Department Company #4 - 2600 Polo Parkway

Midlothian, VA

Roof Area - Slate

37. Deficiency #6 - Loose slate tiles



38. Deficiency #7 - Improper flashing detail at exhaust unit



11/7/2017

Photograph Documentation

Bon Air Fire Department Company #4 - 2600 Polo Parkway

Midlothian, VA

Roof Area - Slate

39. Deficiency #7 - Improper flashing detail at exhaust unit



11/7/2017

