



Elementary Schools

174-Stead Elementary School

ROOF ASSESSMENT REPORT

2024



10580 Stead Blvd.
Reno, NV 89506

For Questions Contact:

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Vice President of Operations

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WWW.BTAWORLDWIDE.COM



Washoe County Schools **174-Stead Elementary School: Reno, NV** **2025 Executive Summary**

Background

On September 09, 2024, BTA conducted an objective survey on the roofs at 174-Stead Elementary School in Reno, NV.

Building Size: 58,463
 Replace/Coating Value: \$2,109,459

In its current condition, 4 % of the surveyed roof areas are recommended for replace/coating.

Recommendation

Based on current conditions, BTA recommends the following budget:

Replace/Coating: \$90,375
 Repair: \$6,558
 Maintenance Reserve: \$3,135

Strategic repairs identified by BTA will extend the life of the roof inventory by approximately 3 year(s).

* The maintenance reserve that is identified has been generated based on the age and condition of each roof area. While not directly tied to defects, it is a reserve for leak response items that are likely to occur based on aged roofs continuing to deteriorate beyond their current condition.

Additional Cost Items Observed (Mobilization Cost not Included): \$1,949

Defect	Qty	Unit	Description	Cost
XX1	135	SF	Trees/Vegetation Overhanging Roof	\$ 1,949

5-Year Unconstrained Budget

Year	Replace/Coating	Repair	Maintenance	Total
2025	\$ 90,375	\$ 6,558	\$ 3,135	\$ 100,068
2026	\$ 31,149	\$ 0	\$ 3,288	\$ 34,437
2027	\$ 0	\$ 0	\$ 3,519	\$ 3,519
2028	\$ 679,311	\$ 0	\$ 2,251	\$ 681,562
2029	\$ 290,391	\$ 0	\$ 1,794	\$ 292,185
Total	\$ 1,091,226	\$ 6,558	\$ 13,987	\$ 1,111,771

Current Conditions

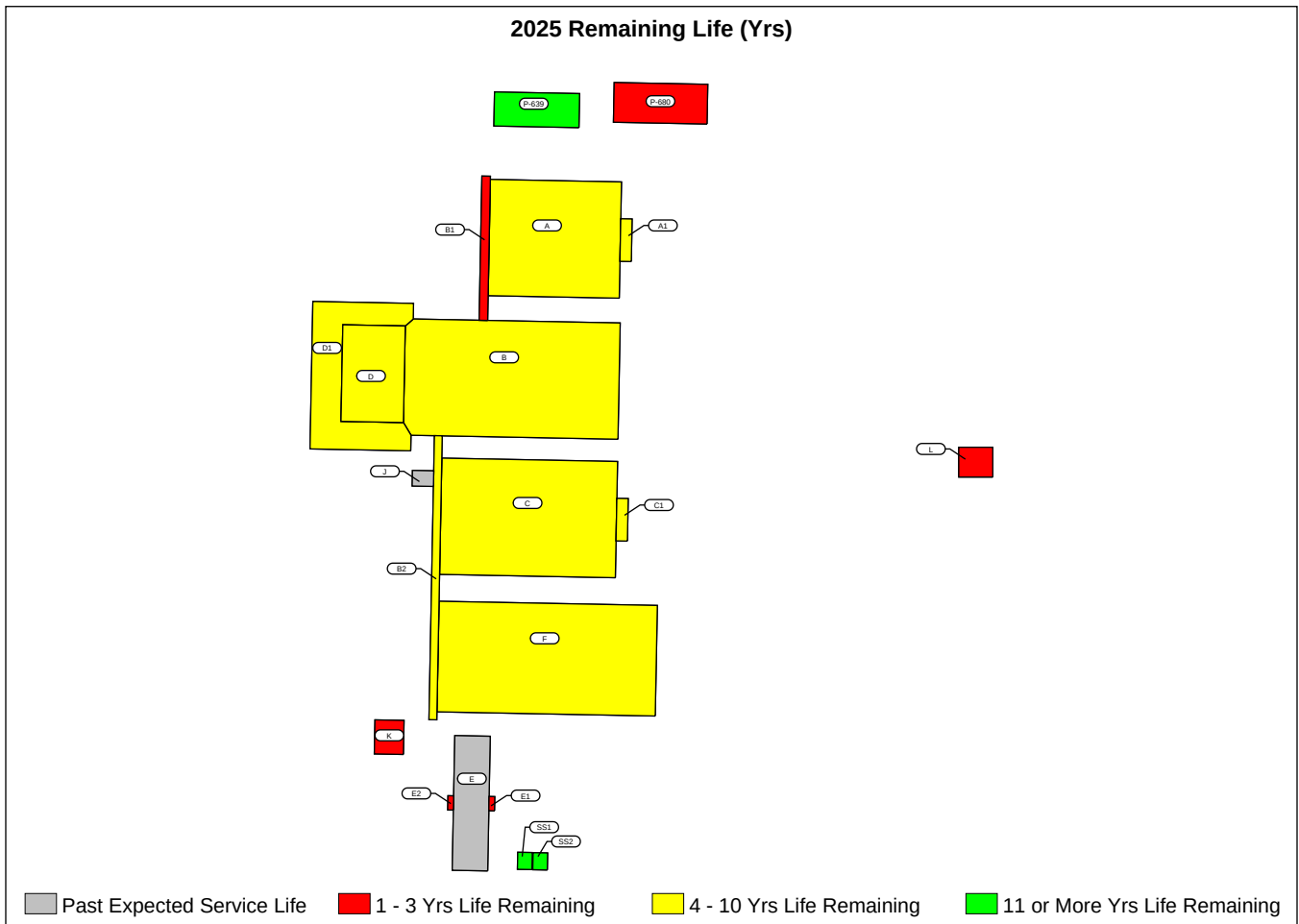
Roof Area	Subsystem	Size(SF)	Age	SE	ASE	Recommendation	Cost
A	BUILT-UP	7,585	19	5	5	No Work	\$ 0
A1	BUILT-UP	240	19	6	6	No Work	\$ 0
B	BUILT-UP	12,386	19	6	6	No Work	\$ 0
B1	BUILT-UP	610	19	2	2	No Work	\$ 0
B2	BUILT-UP	1,102	23	7	7	No Work	\$ 0
C	BUILT-UP	10,168	23	4	4	No Work	\$ 0
C1	BUILT-UP	240	23	5	5	No Work	\$ 0
D	BUILT-UP	2,998	19	4	4	No Work	\$ 0
D1	BUILT-UP	3,972	19	4	4	No Work	\$ 0



Washoe County Schools
174-Stead Elementary School: Reno, NV
2025 Executive Summary

Roof Area	Subsystem	Size(SF)	Age	SE	ASE	Recommendation	Cost
E	BUILT-UP	2,375	28	1	1	Replace	\$ 80,059
E1	BUILT-UP	40	28	1	1	Replace	\$ 1,313
E2	BUILT-UP	40	28	1	1	Replace	\$ 1,313
F	BUILT-UP	12,012	23	8	8	No Work	\$ 0
J	SHINGLE	165	30	1	1	Replace	\$ 7,690
K	PANEL	492	35	2	10	Repairs	\$ 3,402
L	PANEL	504	35	3	10	Repairs	\$ 1,835
P-639	SINGLE-PLY	1,440	11	11	11	No Work	\$ 0
P-680	SHINGLE	1,848	18	3	4	Repairs	\$ 1,321
SS1	SHINGLE	123	1	18	18	No Work	\$ 0
SS2	SHINGLE	123	1	18	18	No Work	\$ 0

SE (Serviceability Estimate) = Remaining Life, ASE (Adjusted Serviceability Estimate) = Adjusted Remaining Life After Repairs



Building

Name: Elementary Schools - 174-Stead Elementary School
Address: 10580 Stead Blvd. Reno, NV 89506

Roof Area

Name: A1
Subsystem: BUILT-UP
Size: 240 sqft.
Year Installed: 2006

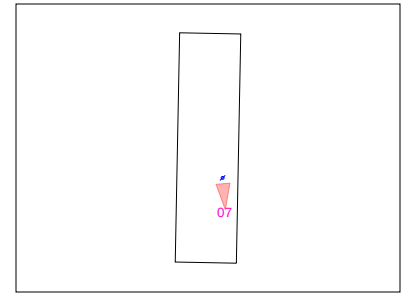


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Deteriorated Surfacing

Building

Name: Elementary Schools - 174-Stead Elementary School
Address: 10580 Stead Blvd. Reno, NV 89506

Roof Area

Name: B
Subsystem: BUILT-UP
Size: 12,386 sqft.
Year Installed: 2006

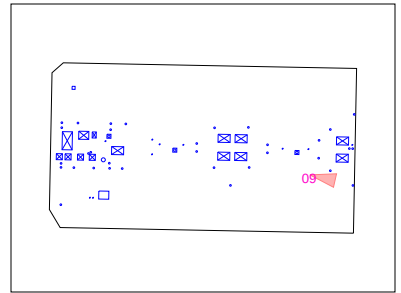


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Overview of Roof Area

Building

Name: Elementary Schools - 174-Stead Elementary School
Address: 10580 Stead Blvd. Reno, NV 89506

Roof Area

Name: B1
Subsystem: BUILT-UP
Size: 610 sqft.
Year Installed: 2006

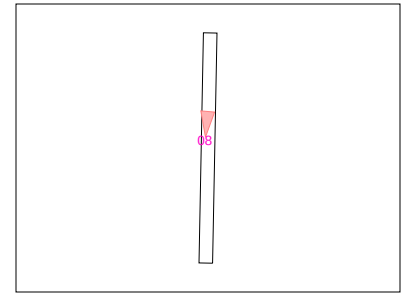


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Overview of Roof Area

Building

Name: Elementary Schools - 174-Stead Elementary School
Address: 10580 Stead Blvd. Reno, NV 89506

Roof Area

Name: C
Subsystem: BUILT-UP
Size: 10,168 sqft.
Year Installed: 2002

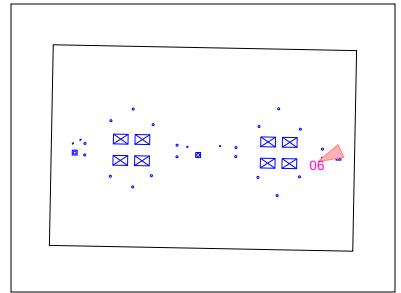


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Overview of Roof Area

Building

Name: Elementary Schools - 174-Stead Elementary School
Address: 10580 Stead Blvd. Reno, NV 89506

Roof Area

Name: E
Subsystem: BUILT-UP
Size: 2,375 sqft.
Year Installed: 1997

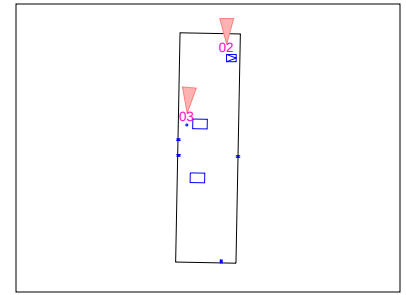


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Base Flashing Split

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Overview of Roof Area

174-Stead Elementary School Photo Report

Building

Name: Elementary Schools - 174-Stead Elementary School
Address: 10580 Stead Blvd. Reno, NV 89506

Roof Area

Name: J
Subsystem: SHINGLE
Size: 165 sqft.
Year Installed: 1995

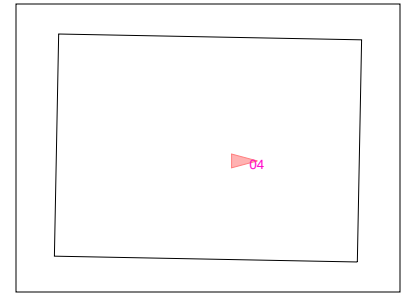


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Shingle Damage

Building

Name: Elementary Schools - 174-Stead Elementary School
Address: 10580 Stead Blvd. Reno, NV 89506

Roof Area

Name: K
Subsystem: PANEL
Size: 492 sqft.
Year Installed: 1990

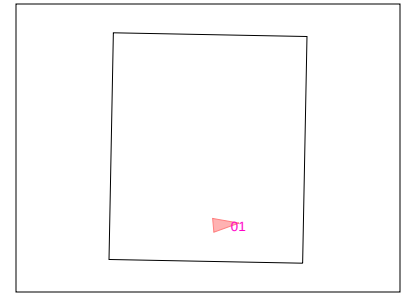


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Trees Overhanging Roof Area

Building

Name: Elementary Schools - 174-Stead Elementary School
Address: 10580 Stead Blvd. Reno, NV 89506

Roof Area

Name: SS1
Subsystem: SHINGLE
Size: 123 sqft.
Year Installed: 2024

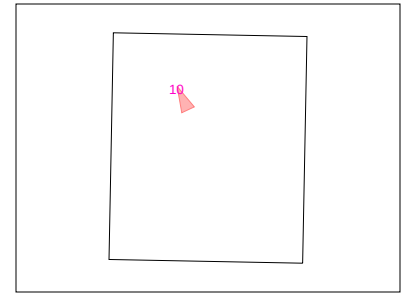


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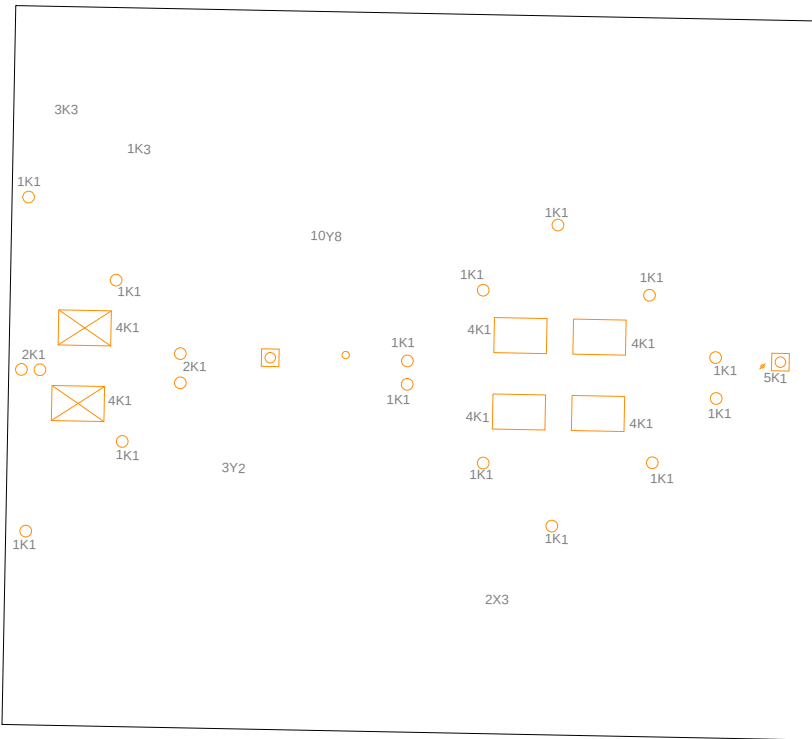
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Overview of Roof Area



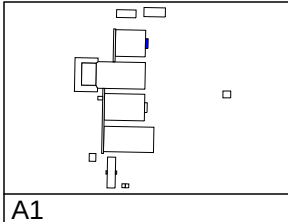
Expected Life	
Before	After
5 yrs	5 yrs

Page: 1

174-Stead Elementary School Defect Summary Report

Facility_Type: Elementary Schools
 Building: 174-Stead Elementary School
 Subsystem: BUILT-UP
 Sqft: 240

Expected Life	
Before	After
6 yrs	6 yrs



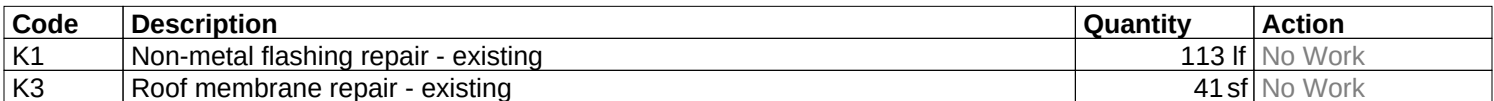
A1



Code	Description	Quantity	Action
K1	Non-metal flashing repair - existing	2 If	No Work
Y8	Missing Granules - Widespread Percentage	10ea	No Work



Expected Life	
Before	After
6 yrs	6 yrs

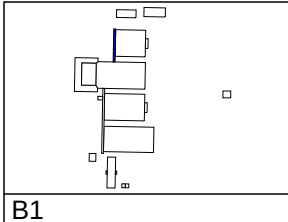




174-Stead Elementary School Defect Summary Report

Facility_Type: Elementary Schools
Building: 174-Stead Elementary School
Subsystem: BUILT-UP
Sqft: 610

Expected Life	
Before	After
2 yrs	2 yrs



3K2
3K2
2K2
100K3
2K2
12Z3
30Y8
2K2

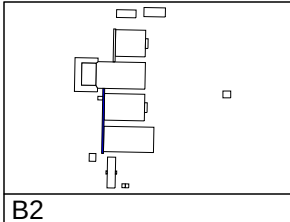
Code	Description	Quantity	Action
K2	Metal flashing repair - existing	12 lf	No Work
K3	Roof membrane repair - existing	100 sf	No Work
Y8	Missing Granules - Widespread Percentage	30ea	No Work
Z3	Grease, solvent, or oil on membrane	12 sf	No Work



174-Stead Elementary School Defect Summary Report

Facility_Type: Elementary Schools
Building: 174-Stead Elementary School
Subsystem: BUILT-UP
Sqft: 1,102

Expected Life	
Before	After
7 yrs	7 yrs



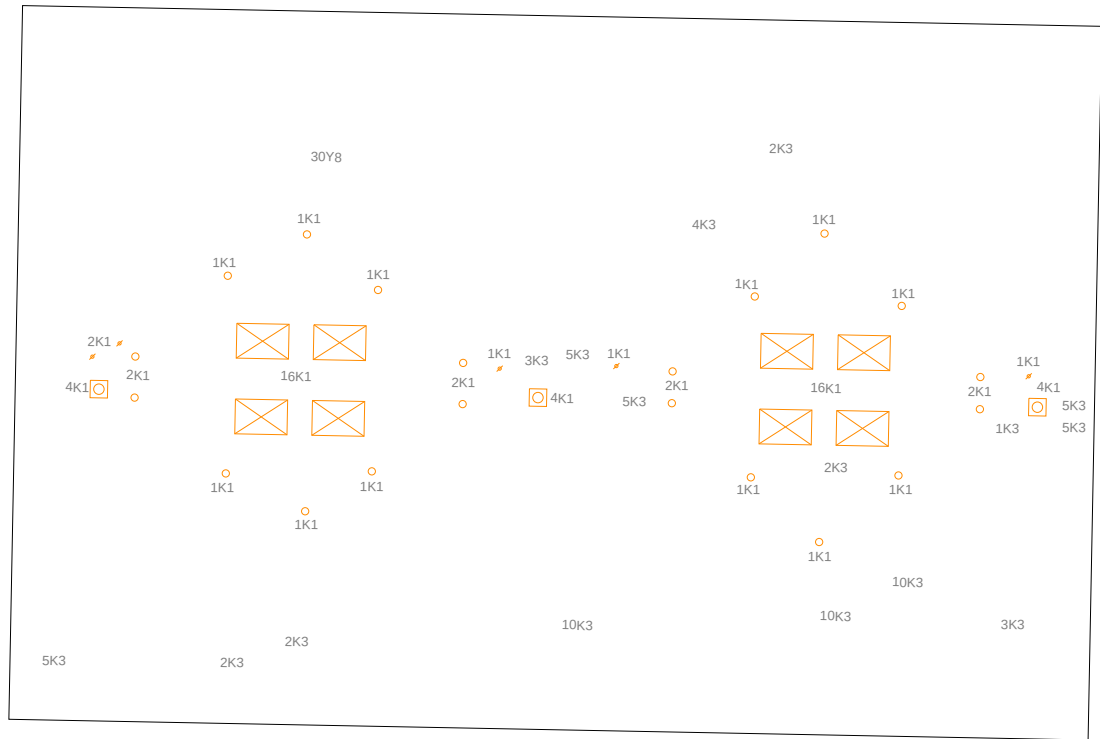
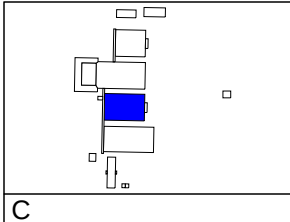
Code	Description	Quantity	Action
K1	Non-metal flashing repair - existing	5 lf	No Work
K3	Roof membrane repair - existing	20 sf	No Work



174-Stead Elementary School Defect Summary Report

Facility_Type: Elementary Schools
Building: 174-Stead Elementary School
Subsystem: BUILT-UP
Sqft: 10,168

Expected Life	
Before	After
4 yrs	4 yrs



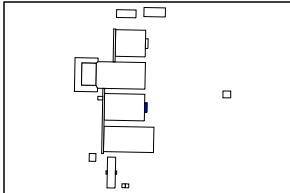
Code	Description	Quantity	Action
K1	Non-metal flashing repair - existing	69 lf	No Work
K3	Roof membrane repair - existing	74 sf	No Work
Y8	Missing Granules - Widespread Percentage	30ea	No Work



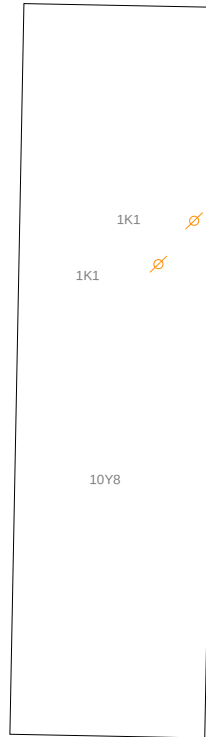
174-Stead Elementary School Defect Summary Report

Facility_Type: Elementary Schools
Building: 174-Stead Elementary School
Subsystem: BUILT-UP
Sqft: 240

Expected Life	
Before	After
5 yrs	5 yrs



C1



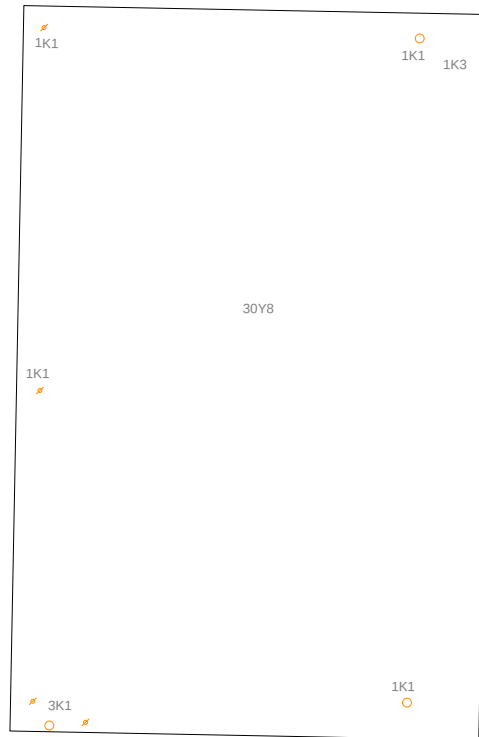
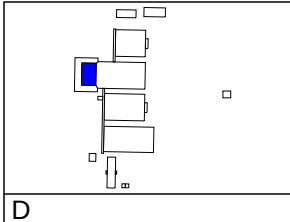
Code	Description	Quantity	Action
K1	Non-metal flashing repair - existing	2 lf	No Work
Y8	Missing Granules - Widespread Percentage	10ea	No Work



174-Stead Elementary School Defect Summary Report

Facility_Type: Elementary Schools
Building: 174-Stead Elementary School
Subsystem: BUILT-UP
Sqft: 2,998

Expected Life	
Before	After
4 yrs	4 yrs



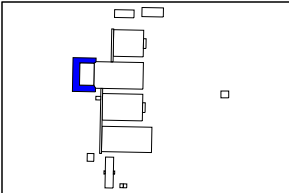
Code	Description	Quantity	Action
K1	Non-metal flashing repair - existing	7 lf	No Work
K3	Roof membrane repair - existing	1 sf	No Work
Y8	Missing Granules - Widespread Percentage	30ea	No Work



174-Stead Elementary School Defect Summary Report

Facility_Type: Elementary Schools
Building: 174-Stead Elementary School
Subsystem: BUILT-UP
Sqft: 3,972

Expected Life	
Before	After
4 yrs	4 yrs



D1

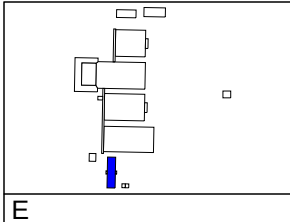


Code	Description	Quantity	Action
K1	Non-metal flashing repair - existing	21 lf	No Work
K2	Metal flashing repair - existing	20 lf	No Work
K3	Roof membrane repair - existing	14 sf	No Work
XX1	Trees/Vegetation Overhanging Roof	15 sf	No Work
Y2	Deteriorated surfacing--top felt exposed	32 sf	No Work
Y3	Deteriorated surfacing--no exposed felt	90 sf	No Work
Y8	Missing Granules - Widespread Percentage	15ea	No Work

174-Stead Elementary School Defect Summary Report

Facility_Type: Elementary Schools
 Building: 174-Stead Elementary School
 Subsystem: BUILT-UP
 Sqft: 2,375

*** To Be Replaced**



E

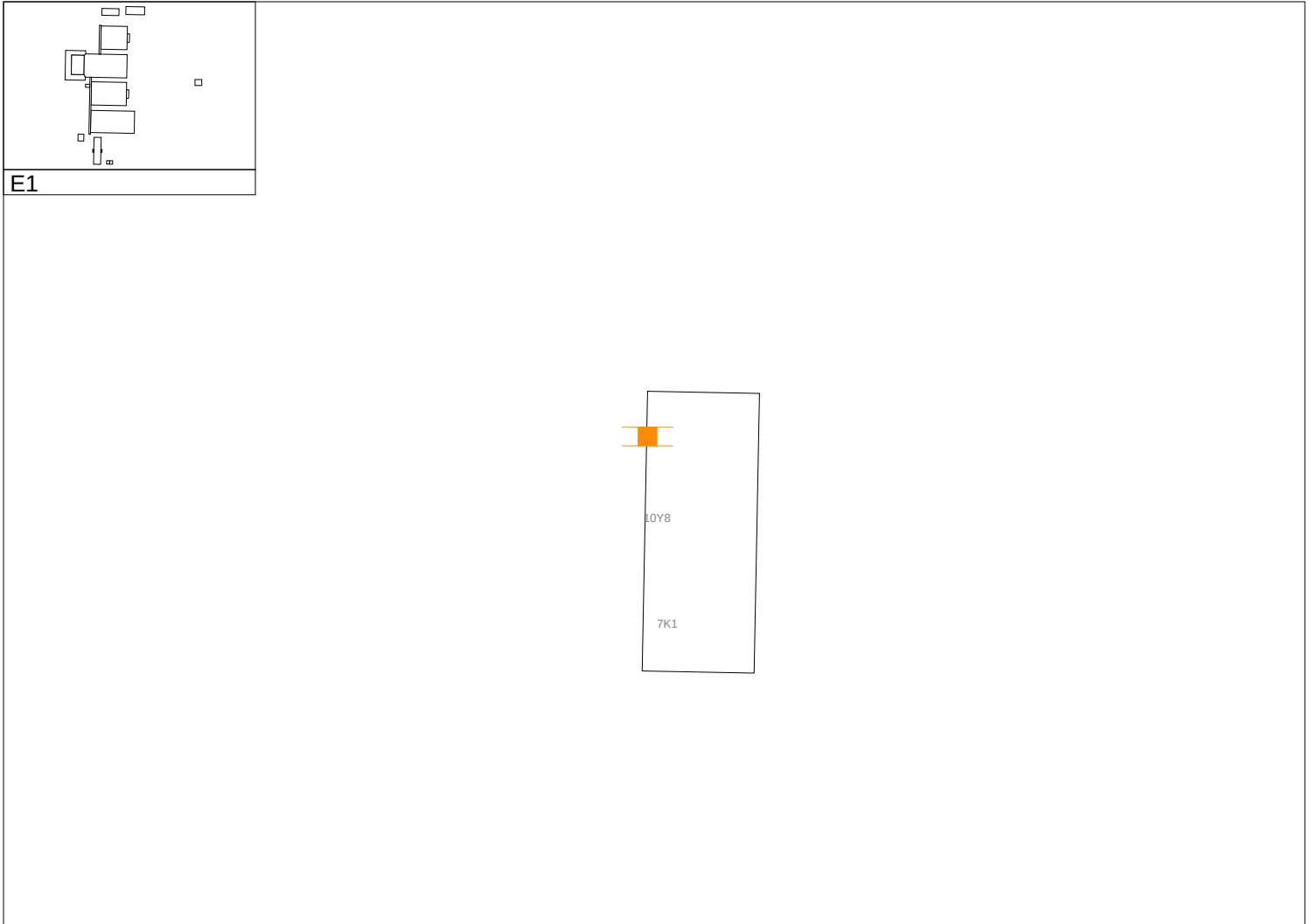


Code	Description	Quantity	Action
B1	Flashing or sleeve hole, split, or tear caused by deterioration	10 lf	No Work
K1	Non-metal flashing repair - existing	34 lf	No Work
K3	Roof membrane repair - existing	200 sf	No Work
Y8	Missing Granules - Widespread Percentage	30ea	No Work
Z6	Vegetation/Debris not penetrating the membrane	6 sf	No Work

174-Stead Elementary School Defect Summary Report

Facility_Type: Elementary Schools
 Building: 174-Stead Elementary School
 Subsystem: BUILT-UP
 Sqft: 40

*** To Be Replaced**

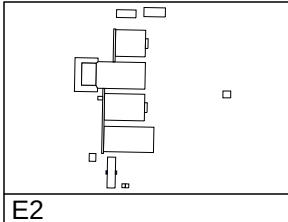


Code	Description	Quantity	Action
K1	Non-metal flashing repair - existing	7 If	No Work
Y8	Missing Granules - Widespread Percentage	10ea	No Work

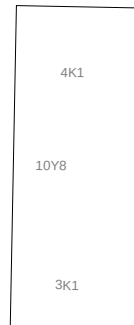
174-Stead Elementary School Defect Summary Report

Facility_Type: Elementary Schools
 Building: 174-Stead Elementary School
 Subsystem: BUILT-UP
 Sqft: 40

*** To Be Replaced**



E2



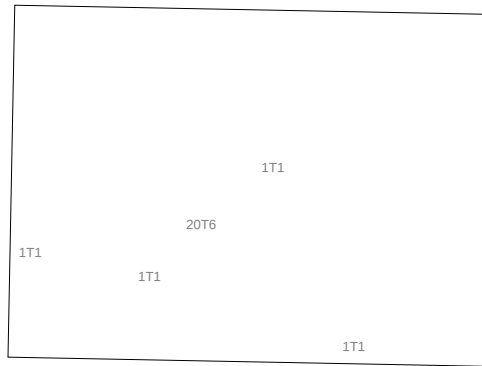
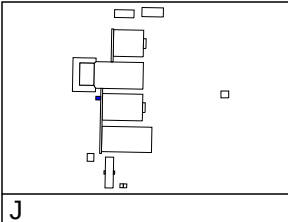
Code	Description	Quantity	Action
K1	Non-metal flashing repair - existing	7 lf	No Work
Y8	Missing Granules - Widespread Percentage	10ea	No Work



174-Stead Elementary School Defect Summary Report

Facility_Type: Elementary Schools
Building: 174-Stead Elementary School
Subsystem: SHINGLE
Sqft: 165

*** To Be Replaced**



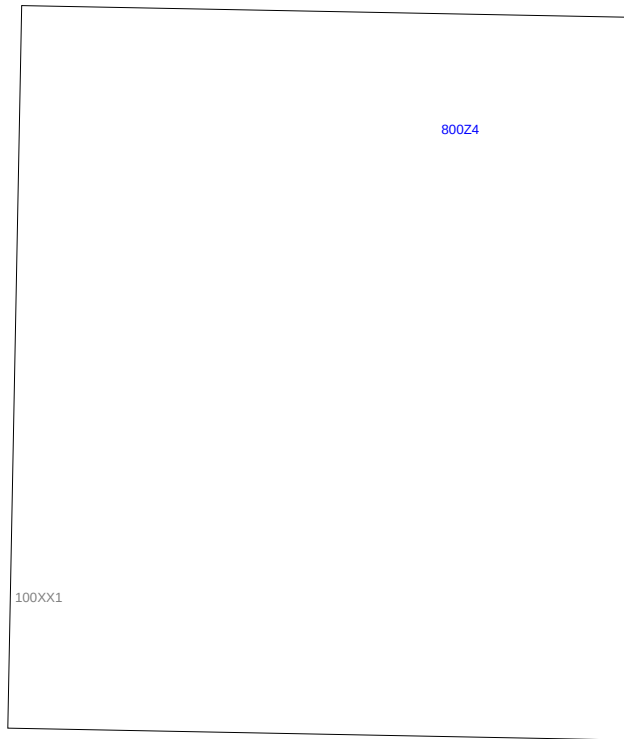
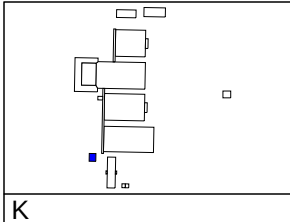
Code	Description	Quantity	Action
T1	Hole, cracked, split, broken or tab or shingle missing	4 sf	No Work
T6	Deteriorated—asphalt exposed (%)	20ea	No Work



174-Stead Elementary School Defect Summary Report

Facility_Type: Elementary Schools
Building: 174-Stead Elementary School
Subsystem: PANEL
Sqft: 492

Expected Life	
Before	After
2 yrs	10 yrs



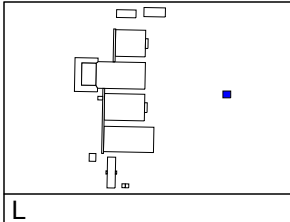
Code	Description	Quantity	Action
XX1	Trees/Vegetation Overhanging Roof	100sf	No Work
Z4	Vegetation/Debris on roof	800sf	Reconstructive



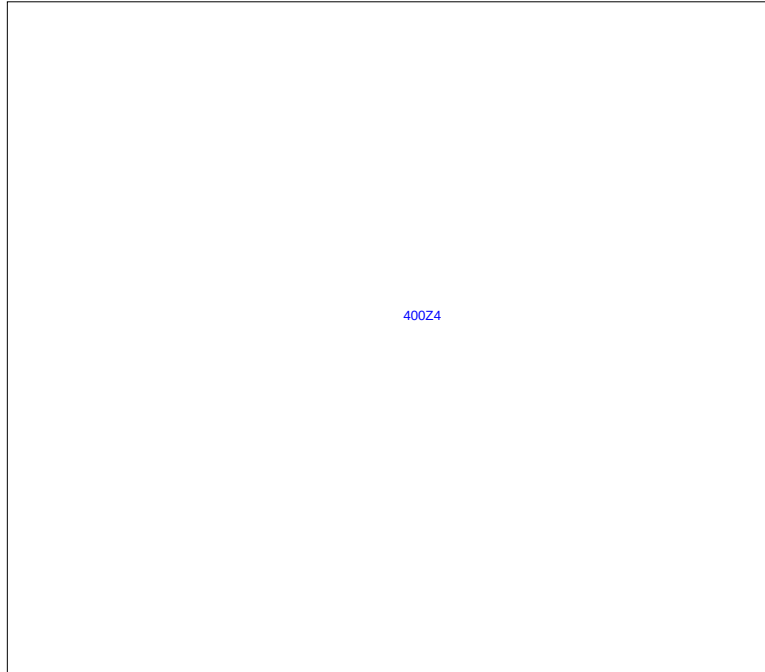
174-Stead Elementary School Defect Summary Report

Facility_Type: Elementary Schools
Building: 174-Stead Elementary School
Subsystem: PANEL
Sqft: 504

Expected Life	
Before	After
3 yrs	10 yrs



L



400Z4

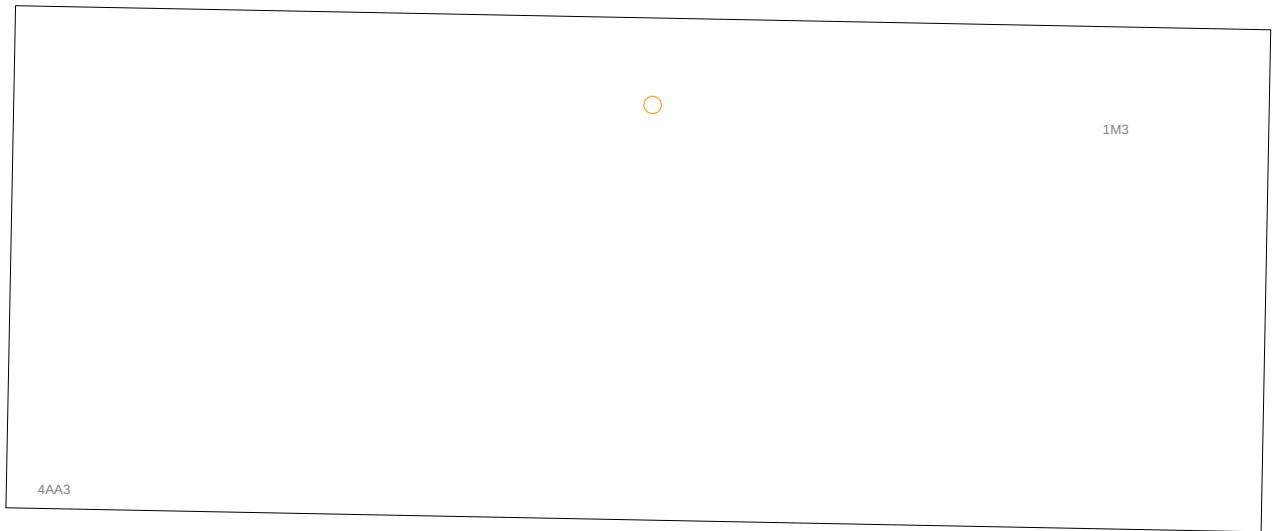
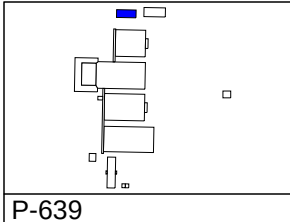
Code	Description	Quantity	Action
Z4	Vegetation/Debris on roof	400sf	Reconstructive



174-Stead Elementary School Defect Summary Report

Facility_Type: Elementary Schools
Building: 174-Stead Elementary School
Subsystem: SINGLE-PLY
Sqft: 1,440

Expected Life	
Before	After
11 yrs	11 yrs

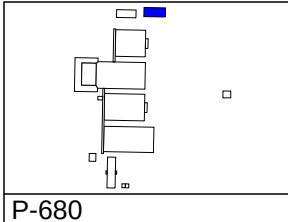


Code	Description	Quantity	Action
AA3	Grease, solvent, or oil on membrane	4 sf	No Work
M3	Roof membrane repair - existing	1 sf	No Work

174-Stead Elementary School Defect Summary Report

Facility_Type: Elementary Schools
 Building: 174-Stead Elementary School
 Subsystem: SHINGLE
 Sqft: 1,848

Expected Life	
Before	After
3 yrs	4 yrs



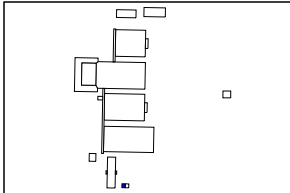
Code	Description	Quantity	Action
T1	Hole, cracked, split, broken or tab or shingle missing	5 sf	No Work
T3	Deteriorated—base felt exposed (%)	20ea	No Work
T7	Tab or shingle not adhered, or lifted or raised	35 sf	No Work
Y5	Fastener protruding or exposed	132 sf	Reconstructive



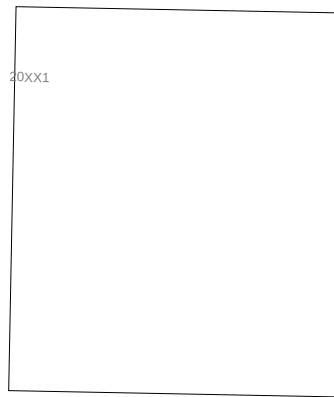
174-Stead Elementary School Defect Summary Report

Facility_Type: Elementary Schools
Building: 174-Stead Elementary School
Subsystem: SHINGLE
Sqft: 123

Expected Life	
Before	After
18 yrs	18 yrs



SS1



Code	Description	Quantity	Action
XX1	Trees/Vegetation Overhanging Roof	20 sf	No Work

FULL REPAIR DESCRIPTION: PANEL

REPAIRS-GENERAL FOR ALL DEFECTS

A. Surface Preparation

1. Cut away loose, deteriorated, unbonded and damaged materials, as indicated, at the defective areas by cutting straight and neat lines and avoid damaging materials to remain in place.
2. For reconstructive repairs, replace wet roofing and flashing materials encountered with dry materials to match existing.
3. For temporary repairs, allow wet materials encountered to dry prior to applying repair materials, or replace wet materials with dry materials to match existing.
4. Remove dirt, dust, and debris from the repair area. Prime where necessary to achieve satisfactory bond, with the specified primer, and allow to dry.
5. Prepare substrates to provide a surface suitable to achieve positive bonding of the new materials to the substrate.
6. Lift or remove sheet metal, mechanical units, or other components installed in conjunction with the present roof systems, as required or detailed to facilitate the repairs.
7. Remove and dispose of debris, vegetation, and silt and dirt accumulations from each roof area. Clean out and wash gutters and conductors.
8. Clean out roof drains and piping, and gutters and conductors, and other drainage means in the repair areas.
 - a. Water test to assure that drains, piping, and conductors function properly.
 - b. Repair leaks.

B. Underlayment Component (Localized Replacement)

1. Install self-adhering membrane: Follow installation requirements of the underlayment manufacturer.
2. Install one ply of red rosin sheathing paper. Secure to the deck as necessary to hold in place.

C. Standing Seam Sheet Metal Roofing Installation (Localized Replacement)

1. Install the sheet metal roof panel system to match existing, including underlayments, in accordance with the requirements and recommendations of the manufacturer, using the manufacturers current printed instructions.
2. Metal panels shall be installed plumb and true in a proper alignment and in relation to the existing structural framing. If necessary, use chalk lines as visible guides to ensure the proper alignment of the panels.
3. Install sheet metal panel clips as required to secure the standing seam sheet metal panel system to the underlying substrate, and to allow movement of the roof system. Follow the requirements and recommendations of the sheet metal panel manufacturer. Install a minimum of two fasteners per clip.

D. Roof Coating Application

1. Power-wash the roof surface. Use a cleaning agent recommended by the coating manufacturer.
2. Apply the recommended primer for use over the roof membrane surface and flashings.

3. Encapsulate fastener heads and gutter straps located on the sheet metal panels:
 - a. Flashing sealant approved for use in this application by the coating manufacturer.
4. Flash horizontal and vertical seams, ridge caps, rake edges, parapet walls, curb flashings, and other roof penetrations using flashing-grade sealant and reinforcing fabric approved by the coating manufacturer for the application.
5. Flash exterior and interior gutters using flashing-grade sealant and reinforcing fabric approved by the coating manufacturer for the application.
6. Treat areas of residual asphalt and corrosion using a flashing-grade sealant approved by the coating manufacturer.
7. Prior to coating application, the coating manufacturer shall inspect preparation of the substrate. Any preparation work found to be defective or inadequate shall be corrected to the satisfaction of the coating manufacturer. Provide documentation of the inspection to the Owner.
8. Prior to work start, inspect all surface preparation and flashing work. Correct any identified defects prior to application of coating.
9. Prior to work start, inspect the areas adjacent to the work area for vehicles and other property that could be damaged by coating overspray. Prior to work start, remove or protect cars and other property that may be damaged by work activities.
10. Prior to work start, close any rooftop air intakes within and adjacent to the work area.
11. Work shall be performed by skilled craftsmen who are qualified to perform the specified work and shall be done in a manner comparable to the best standards of practice found in the trade. All material shall be evenly applied so as to be free from sags, runs, crawls, wrinkles, holidays, or any other application defects. All brush coats shall be of the proper consistency and properly brushed out so as to show the minimum of brush marks.
12. Coatings shall be applied in accordance with manufactures printed instructions for that particular material.
13. Apply coating in two applications, minimum. Application rate for the first coat shall be 1.00 gallons per 100 square feet, and 1.50 gallons per 100 square feet for the second coat (2.50 gallons per square feet, total); unless otherwise recommended by the manufacturer.
14. Apply top coating in a direction perpendicular to bottom coating.
15. Completed dry film thickness shall be 21 mils, minimum; unless otherwise recommended by the manufacturer.

REPAIR PROCEDURE BY DEFECT CODE

Repair procedures provided below are to be used as applicable to the defect found. Not all defect types are covered. Follow NRCA recommended repair procedures for any defect not covered by procedures provided.

- Z. Ponding/Vegetation/Debris/Contamination

Z4(r). Vegetation/Debris on roof (SF)

- a. Remove and dispose of debris, vegetation, and silt and dirt accumulations.

FULL REPAIR DESCRIPTION: SHINGLE

REPAIRS-GENERAL FOR ALL DEFECTS

A. Surface Preparation

1. Cut away loose, deteriorated, unbonded and damaged materials, as indicated, at the defective areas by cutting straight and neat lines and avoid damaging materials to remain in place.
2. For reconstructive repairs, replace wet roofing and flashing materials encountered with dry materials to match existing.
3. For temporary repairs, allow wet materials encountered to dry prior to applying repair materials, or replace wet materials with dry materials to match existing.
4. Remove dirt, dust, and debris from the repair area. Prime where necessary to achieve satisfactory bond, with the specified primer, and allow to dry.
5. Prepare substrates to provide a surface suitable to achieve positive bonding of the new materials to the substrate.
6. Lift or remove sheet metal, mechanical units, or other components installed in conjunction with the present roof systems, as required or detailed to facilitate the repairs.
7. Remove and dispose of debris, vegetation, and silt and dirt accumulations from each roof area. Clean out and wash gutters and conductors.

B. Underlayment Replacement (Localized)

1. Install self-adhering underlayment eaves, rakes, ridges, penetrations, valleys, skylights, dormers, behind apron and step flashings, locations indicated on the drawings and other locations required by the asphalt shingle manufacturer.
2. Follow the written installation requirements of the self-adhering underlayment manufacturer.
3. Lay self-adhering underlayment flat, wrinkle free. Install the underlayment at locations indicated. At eaves, install underlayment parallel to the eave edge. At rake edges, install the underlayment beneath the flange of the rake edge metal. Refer to the project drawings.
4. Extend self-adhering underlayment 24 horizontal inches beyond interior wall of the building envelope, minimum.
5. At a minimum, side laps shall be overlapped 4 inches, and end laps shall be overlapped 8-inches. Refer to NRCA and manufacturer requirements and follow the more stringent requirement.
6. Using a roller, roll underlayment to ensure proper adhesion to structural deck.
7. Install synthetic/ asphalt felt underlayment (match existing) at all locations not covered by self-adhering membrane. Follow written installation requirements of the underlayment manufacturer.
8. Unroll the underlayment parallel with the eave edge. Lay underlayment flat, wrinkle free. Do not over stretch during installation.
9. At a minimum, side laps shall be overlapped 2-inches, and end laps shall be overlapped 4-inches. Refer to NRCA and manufacturer requirements and follow the more stringent requirement.

C. Asphalt Shingle Installation (Localized)

1. Install the specified asphalt shingle roofing system, including self-adhering membranes and underlayments, in accordance with the requirements and recommendations of the asphalt shingle roofing manufacturer, using the manufacturer's current printed instructions, and the recommendations

in the NRCA "Roofing Manual: Steep-Slope Roof Systems – Latest Edition", and ARMA "Residential Asphalt Roofing Manual, Latest Edition".

2. Use chalk lines as visible guides to ensure the proper exposure, coverage, and horizontal and vertical alignment of the shingles.
3. Apply shingles across and diagonally up the roof, as recommended by the asphalt shingle manufacturer.
4. Install six nails per full length shingle. Do not nail into or above the factory-applied adhesive strips. Refer to asphalt shingle roofing manufacturer printed instructions for recommended location of nails. Remove any underdriven nails, and repair and damage caused by defective fastening with roofing cement. If severe damage occurs during nail removal, replace the full shingle.
5. Shingle exposure shall be as recommended by the asphalt shingle manufacturer.
6. Starter course at eaves, install one row of starter strip shingles.
 - a. Fasten the starter strip shingles in accordance with the requirements of the asphalt shingle roofing manufacturer. Overhang the eave consistently by 1/4-inch to 3/4-inch, unless indicated otherwise by the asphalt shingle manufacturer.
7. During installation, check installation of shingle courses to ensure proper alignment of cutouts, and correct horizontal and vertical orientation of course.
8. Bond the tabs of the first shingle course to the starter strip, using a quarter-sized dab of roofing cement placed on the starter strip 12-inches o.c. Press the first course firmly into the roofing cement.
9. On steep slope roofs exceeding 12-inches per foot in slope, in areas defined as "high wind areas", or when required by the asphalt shingle roofing manufacturer, bond shingle tabs by "hand tabbing", placing a quarter-sized dab of roofing cement 12-inches o.c. and pressing the overlying shingle firmly into the roofing cement.
10. Valley flashings:
 - a. Install valley to match existing following the "Closed Cut Method" or "Open Valley Method", as defined in the NRCA "Roofing Manual: Steep-Slope Roof Systems – Latest Edition", and ARMA "Residential Asphalt Roofing Manual, Latest Edition".
11. Hip/ Ridge flashings:
 - a. Install shingles manufactured by the asphalt shingle manufacturer or specified shingles trimmed following the manufacturer's requirements, following the printed instructions of the asphalt shingle roofing manufacturer.

REPAIR PROCEDURE BY DEFECT CODE

Repair procedures provided below are to be used as applicable to the defect found. Not all defect types are covered. Follow NRCA recommended repair procedures for any defect not covered by procedures provided.

Y. Fastener Defects

Y5(r). Fastener protruding or exposed (SF)

- a. Remove fastener and penetrated shingles.
- b. Reattach shingle using a fastener in a different location
- c. Apply sealant under top tab and press into place

- d. Apply sealant to hole resulting from removed fastener