ROOF ASSESSMENT REPORT

MONTAGUE TOWN POLICE DEPARTMENT
180 TURNPIKE ROAD
TURNER FALLS, MA 01376

Prepared For:

Mr. Steven Ellis
Town Administrator
Town of Montague, Massachusetts

Prepared By:

Northeast Roof Consultants, LLC
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Southborough, MA 01772
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Date: March 15, 2022
NRC Project No. 22-001

March 15 2022

Mr. Steven Ellis
Town Administrator
Town of Montague
One Avenue A
Turners Falls, MA 01376
(Email: townadmin@montague-ma.gov)

RE: Roofing Consulting Services
Roof Assessment and Report
Montague Town Police Department
Turners Falls, MA

I. INTRODUCTION

On Thursday, February 17, 2022, Northeast Roof Consultants was on site to perform a visual assessment of the existing single-ply roofing systems over the Montague Town Police Department and a section of the fire Department. Access to the roof was made through an internal roof hatch on the low-slope roof, with the assistance of Highway Maintenance personnel. The weather on the day of the inspection was overcast with temperatures in the 30-40's. Following are the results of our assessment. As exploratory test cuts were not taken as part of this assessment, the thickness and type of underlying components on the roofs could not be verified. The roof components on the main upper roof area were visible at the roof hatch location. The report includes a general overview of the facility, verified roof sizes and areas, general roof observations, existing issues, conclusions and recommendations with cost estimates for the recommended scope of work. Photo documentation of the assessment and a roof sketch showing the locations of the problem areas is also included.

II. GENERAL DESCRIPTION

The Police Department facility is a one-story masonry and steel framed facility built around 2009. The intersecting Fire Department roof is also one story roof of similar construction. The two-story roof over the Fire Department truck bays was not accessible on the day of the assessment. The L-shaped low-slope roof over the Police department drains to two separate drain lines consisting of primary internal drains and one emergency overflow drain for each section, located down the center line of the roof. The low-slope roof over the Fire Department office/living areas drains from west to east where four internal roof drains are located. Positive slope to the existing roof drains is present in all areas inspected as part of this assessment.

The Police Department roof is covered by an adhered Ethylene-Propylene-Diene-Monomer (EPDM) roofing system. The roofing system manufacturer is Firestone Building Products Company. The accessible Fire Department roof is covered by a white reinforced adhered

thermoplastic roof membrane that appears to be a Thermoplastic Polyolefin (TPO) membrane. The Police Department roof is surrounded by a 6" wide, 10"-18" tall low parapet on all sides. The Fire Department roof area intersects the Police Department roof on the west perimeter and the higher truck bay roof on the east perimeter. The remaining roof edges are flat with raised perimeter metal to prevent water from dripping over the edge of the roof and down the exterior walls. The existing perimeter metal on both roofs is shop fabricated from white aluminum sheet metal with continuous metal cleats. The low parapet is covered on the top and inside face with adhered EPDM membrane.

Roof top equipment and penetrations include HVAC units on metal roof curbs, A/C units mounted on wood sleepers, a roof hatch, exhaust fan curbs, fresh air intakes, pourable sealer pockets for the A/C conduit and condenser lines, numerous plumbing vents, gooseneck vents and an antenna support base.

Roof Measurements

- Roof Height - 12'-14' estimated.
- Police Department Roof: - 12,400 sq. ft.
- Low Fire Department Roof: - 2,800 sq. ft.
- Total all areas assessed: **15,200 sq. ft.**

Existing Roof Components and Thickness

As the roof areas reviewed for this report were likely covered under the roof membrane manufacturer's original roof warranty, no exploratory test cuts were taken in either area. Therefore, the exact type and thickness of the existing roof components could not be verified. Core cuts and/or repairs into a warranted roof assembly by a non-certified company can void the manufacturer's warranty. We were able to detect rigid foam insulation under the single-ply membranes, typically polyisocyanurate roof insulation. The insulation was secured to the roof deck (typically metal) with screw type fasteners and 3" diameter metal distribution plates. The estimated roof age is 13 years old.

III. ROOFING/FLASHING ISSUES

Our inspection of the Police Department roof revealed the following issues and concerns:

- The EPDM perimeter flashing is delaminating at several of the parapet inside corners and at the top of the low parapet.
- The EPDM membrane on the inside face and top of the perimeter parapet is unadhered and bubbling along the east elevation of the roof. The bubbling is typically caused by sealing of the membrane while the adhesive/primer is wet or when adhering the membrane when the temperatures are below 40 degrees F.
- The sealant at the pourable sealer pockets is aged, dried and shrinking. Voids in the sealant may allow water to enter the building interior.
- The protection pad between the antenna base and surface of the EPDM membrane is deteriorated and in need of replacement.
- Pine needles and other debris is collecting on different areas of the roof.

- Minor areas of standing water were evident on the roof surface during the assessment.
- The outside corner of the Exterior Insulated Finish System (EIFS) was unfinished at the intersection of the wall and roof at one location. The reinforcing mesh is visible over the Expanded Polystyrene insulation. There is also a small open gap in the wall covering under the bottom edge of the edge metal.

Inspection of the lower Fire Department roof revealed the following issues and concerns:

- The flashing height of the wall base flashing at the intersection of the truck bay roof is below the recommended flashing height of 8".
- Drain baskets are clogged at the base with debris.
- A vertical crack is present in the exterior wall of the truck bay above the lower Fire Department roof.

IV. CONCLUSIONS/RECOMMENDATIONS

The existing roofing systems over the Police Department and low Fire Department roof are in generally good condition at this time. The field seams and field membrane appear to be well adhered to the substrate with no evident delamination. Minor repair work and general maintenance and cleaning of the Police Department roof should allow the roof to reach is typical useful service life of 20+ years. Delaminated and open flashing seams along the low parapet should be covered under the manufacturer's typical systems warranty. Membrane bubbling and unadhered areas along the low parapet do not appear to be water infiltration issue at this time. This area should be monitored going forward, with repairs being implemented as needed. Cleaning of the roof surface should be considered at least twice a year (spring and fall, or after severe weather events). This should include removal of pine debris and other vegetation on the roof surface and cleaning of the internal roof drain baskets. This work can be undertaken by Town employees.

The area of wall system presently open to the weather should be sealed with proper materials to prevent future water infiltration. Replacement of the shrinking pourable sealant and deteriorated buffer pad under the antenna are not covered by the warranty. All required repair work should be done by a certified applicator in accordance with the written warranty.

The Fire Department low roof requires no repair work at this time. Cleaning of the drain bowls and roof surface should be done twice a year. Vertical cracks in the masonry wall at the high roof intersection should routed and sealed with a polyurethane sealant of matching color to prevent water infiltration into the building. The low wall base flashing height should be monitored when snow drifting is occurring as moisture could enter at the top of the through wall flashing joint.

(Short Term Recommendations – Roof Repairs 2022)
(Proposed Scope of Work)

- Re-adhere open seams in the low parapet flashing at locations indicated on the roof sketch. **(This work should be covered under the existing warranty.)**
- Replace or add pourable sealant at the penetration pocket indicated on the roof sketch.
- Replace the buffer pad under the roof antenna base with a new pad approved by the membrane manufacturer.
- Properly seal the exposed reinforcing mesh in the wall system and adjacent opening in the wall with appropriate materials.
- Clean roof and drain basket of debris.
- Rout and seal the vertical crack in the vertical wall above the Fire Department low roof with appropriated materials.
- **Cost Estimate for work not covered under the roof membrane manufacturer's warranty- $1,000 - $2,000 (Based on 2022 Costs).**

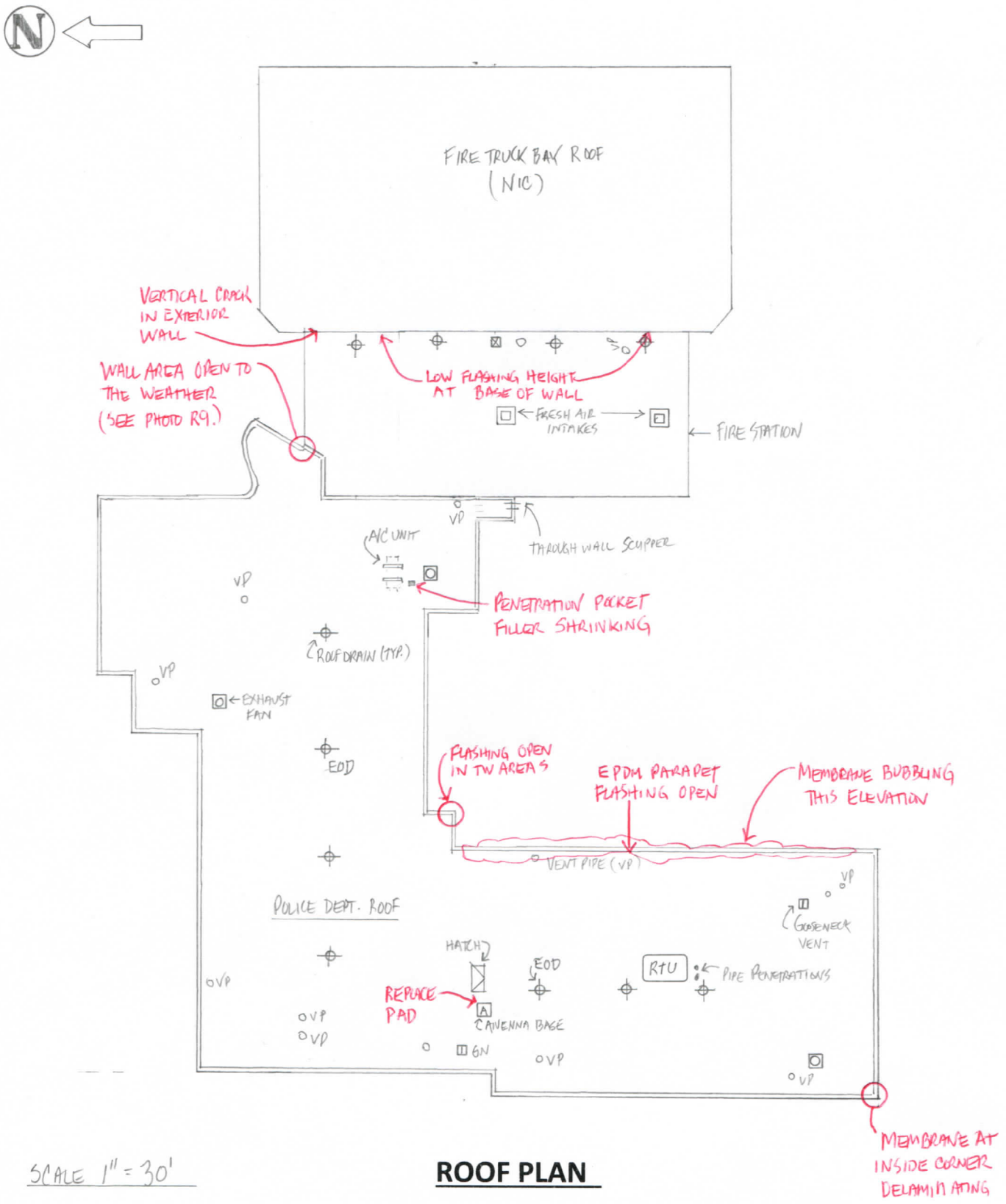
No long term recommendations are required at this time. Interim inspections conducted by a qualified roof installer or consultant, followed by required yearly maintenance should keep the roofs serviceable for an extended period of time.

The above referenced cost estimate does not include the cost for design fees, permitting, hazardous material testing, disconnection of A/C units if required, structural deck renovation (if required), plumbing requirements or hidden conditions. Repairs should only be performed by qualified and licensed personnel familiar with the type of work needing repair. We hope this provides you with the information you require. After your review of this report, feel free to call with any questions, comments or concerns. Please see the following photo pages to view the existing conditions and areas of concern at each location.

Sincerely,

John R. Skypeck, RRC
President
Northeast Roof Consultants, LLC

Reliance: This report is for exclusive use and may be relied upon by the Town of Montague officials. No parties or persons other than those identified as authorized users may use or rely on the information or opinions in this report without the express written consent of Town of Montague officials and Northeast Roof Consultants, LLC.



SCALE 1" = 30'

ROOF PLAN

NORTHEAST ROOF CONSULTANTS, LLC **2 PEGGY DRIVE** **SOUTHBOROUGH, MA 01772** **508-277-0284**	**2022 ROOF ASSESSMENT** POLICE DEPARTMENT 180 TURNPIKE ROAD TURNERS FALLS, MA 01376 MAIN ROOF	DRAWN BY: JRS	SCALE: NTS	DRAWING NUMBER: **SK-1**
		DATE: 1/6/2022	REV. DATE:	
		DESCRIPTION: ROOF AREA PLAN		

Photo R1
02/17/22

Photo Location:
Police Department Roof

Description:
View of the adhered EPDM roofing system over the Police Department Facility looking west to east.

Photo R2
02/17/22

Photo Location:
Police Department Roof

Description:
View of the adhered EPDM roofing system over the Police Department Facility looking west to east.

Photo R3
02/17/22

Photo Location:
Police Department Roof

Description:
View of the adhered EPDM roofing system over the Police Department Facility looking north to south.

Photo R4
02/17/22

Photo Location:
Fire Department Low Roof

Description:
View of the adhered TPO roofing system over the Fire Department Facility looking north to south.

	**Photo R5** 02/17/22 *Photo Location:* Police Department Roof *Description:* Void in EPDM flashing at low parapet at seam overlap.
	**Photo R6** 02/17/22 *Photo Location:* Police Department Roof *Description:* Opening in EPDM flashings at inside corner of low parapet.

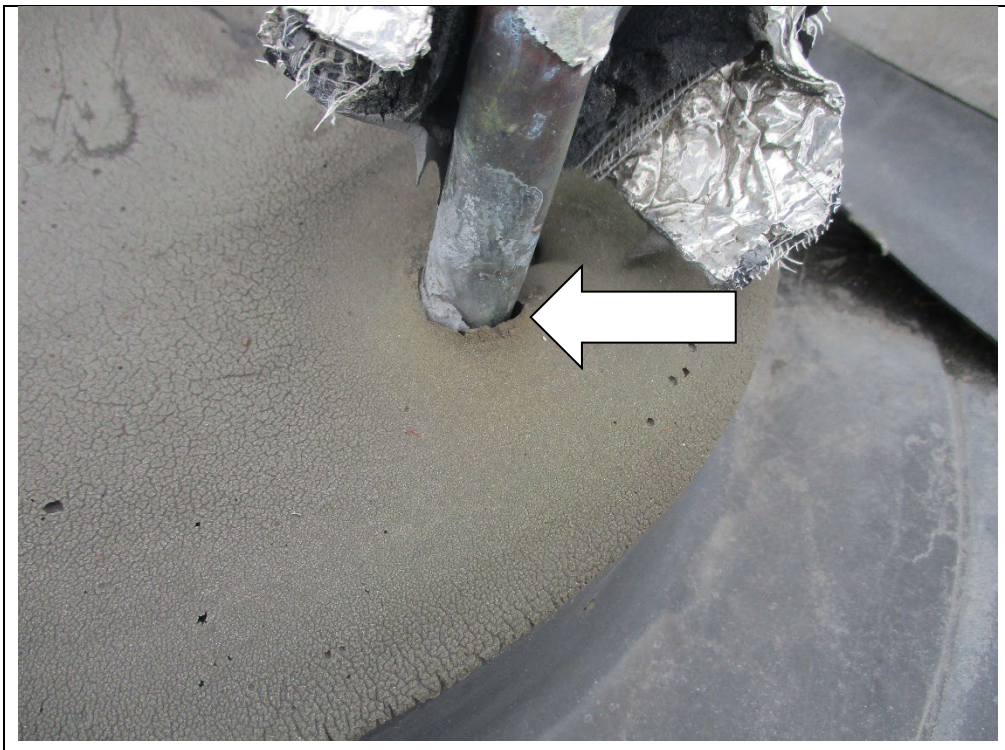


Photo R7
02/17/22

Photo Location:
Police Department Roof

Description:
Shrinking of penetration pocket sealer pulls away from copper pipe and allows moisture into the building.

Photo R8
02/17/22

Photo Location:
Police Department Roof

Description:
Pad under antenna base is deteriorated and requires replacement.

Photo R9
02/17/22

Photo Location:
Intersection of the Police and Fire Department Roofs

Description:
View of the unfinished edge of the Insulated wall System. Note: opening in wall under bottom edge of metal fascia.

Photo R10
02/17/22

Photo Location:
Police Department Roof

Description:
Accumulation of pine needles and other debris in area of standing water.

Photo R11
02/17/22

Photo Location:
Exterior wall between high and low Fire department roof areas.

Description:
View of the unfinished edge of the Insulated wall System. Note: opening in wall under bottom edge of metal fascia.

Photo R12
02/17/22

Photo Location:
Fire Department Roof

Description:
Accumulation of debris around internal roof drain on TPO roof.