



**MADDOX ROOFING & CONSTRUCTION, INC.**

Single-Ply Roofing, Built-up Roofing  
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To: Browning School District  
RE: Fall Facility Roof Inspections

We conducted an extensive walk over of the following schools in November: Napi, KW Bergan, Old Browning High School, New Browning High School, Vina Chattin, Browning Middle School, William Buffalo and Babb School.

The following report is intended to high light the problematic areas of each school (if any), state the overall condition of roof assemblies and to indicate which facility should be prioritized for possible replacement.

The conditions and deficiencies noted on each facility will likely change from a fall inspection to a spring inspection due to the extremely volatile weather conditions our area experiences (high winds, massive temperature swings, etc.)

#### NAPI ELEMENTARY SCHOOL

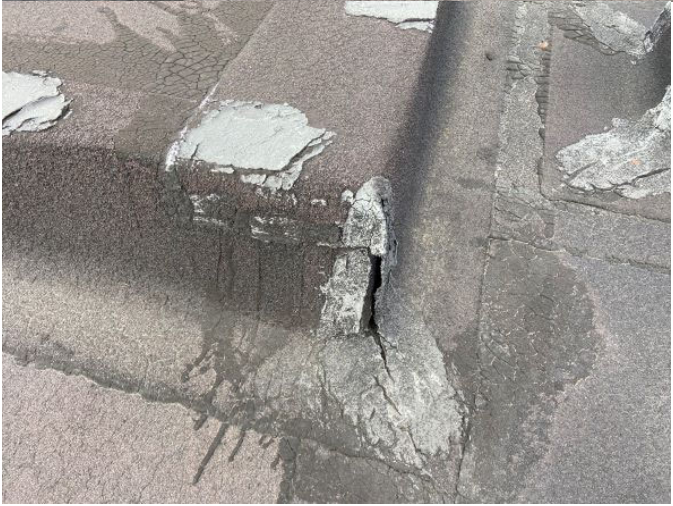
The existing roof assembly is a modified built-up roof. This assembly consists of a granulated cap sheet, two inner plies of fiberglass felt and a modified base sheet, all set in type 4 asphalt.

The general condition of this roof assembly is “poor”. The membrane itself is in decent condition, but there are an exceptionally large percentage of the flashings which are in very poor condition.

Observed deficiencies are: cracking at flashings/penetrations, moderate granule loss, deteriorated flashings, missing drain strainers, splitting of the plies due to movement of the building, penetrations that have not been flashed and migration of some wall flashings.

While there are significant problems with the flashings on this system, there a few leaks showing up inside the school.

This roof assembly at this facility is in the poorest condition of all the schools.



## WILLIAM BUFFALO SCHOOL

The existing roof assembly is a modified built-up roof. This assembly consists of a granulated cap sheet, two inner plies of fiberglass felt and a modified base sheet, all set in type 4 asphalt. A portion of the facility has a standing seam metal roof.

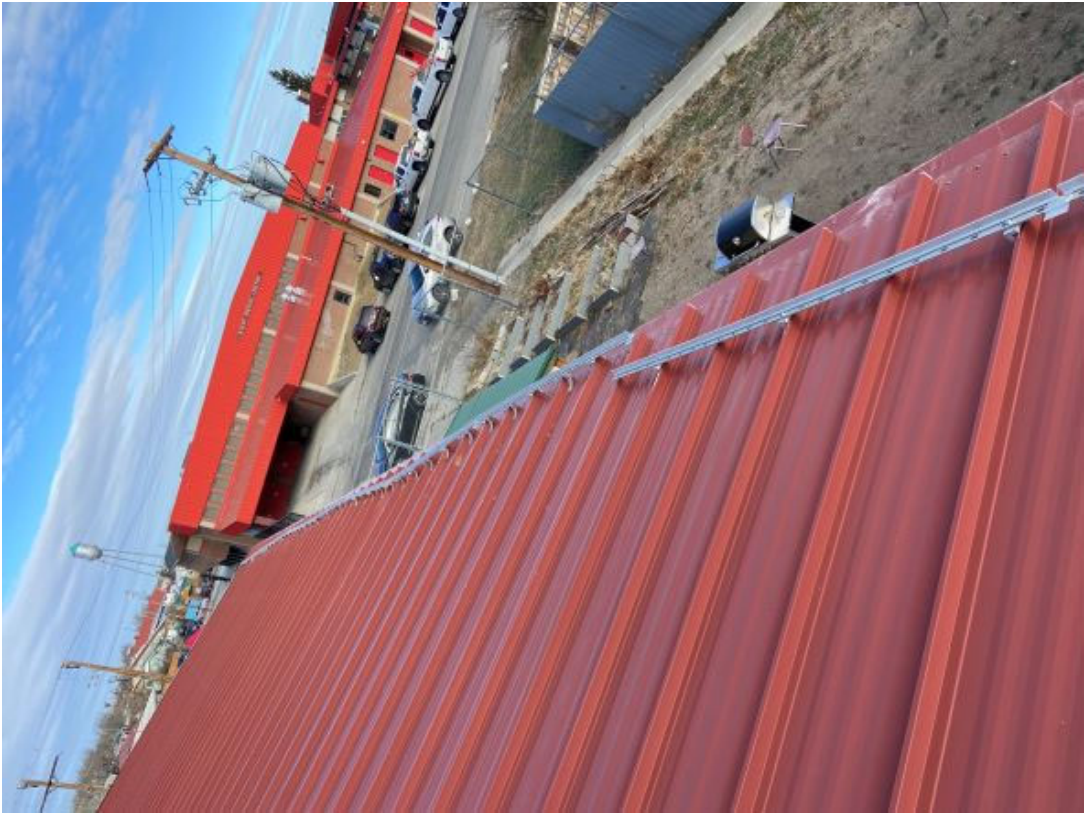
The general condition of this roof assembly is “poor”. The membrane and flashings are still in an overall watertight manner. However, the overall condition at both the membrane and flashings are showing significant wear with little to no granule retention. Observed deficiencies are: extreme granule loss, loose flashings, loose seams, damaged/missing snow retention system.

While this system looks bad on the outside, there are few leaks inside the building. This is due to the majority of the transitions or flashings still be sealed. The thermal shock from cold to hot will be an issue with this system very soon due to its age.

This roof assembly on the facility I would rate as the second poorest of the schools.







## KW BERGAN

The existing roof assembly is a modified built-up roof. This assembly consists of a granulated cap sheet, two inner plies of fiberglass felt and a modified base sheet, all set in type 4 asphalt.

The general condition of this roof is still borderline fair. The membrane/ cap sheet is still in fair condition with good granule retention. Some of the flashings at the penetrations, especially the pipes, are in need of some maintenance, but the system overall is still watertight with the exception of one area.

Deficiencies observed are; pipe flashings, loose stripping/flushing, loose wall flashings and a deteriorated sheet in one area.

There was one leak noted during the walkover at a corner on the SW side. This area is waterlogged and should be removed and replaced. The short parapet wall is holding the water here. It would need to be crickets and the membrane replaced.

With some maintenance, the assembly on this school could be expected to perform for another three to five years easily. Replacement would not be the wrong decision for this facility, but it is in better condition than some of the others.







Vina Chattin

The roof assembly on this facility is largely comprised of an architectural standing seam metal assembly, with a build up roof over an entry way on the west side.

The panel assembly and flashings look to be in good condition with no issues that would allow moisture to enter the building. With the high winds, loose or damaged panels or flashings would be expected but there was no damage or problems that were evident from that.

The flat roof at the entry way was the only area that seemed problematic.

The only deficiencies noted on this building are at the flat roof at the entry way and fascia damage on the east entry way.

The flashings from the flat roof to the metal wall panel assembly are in poor condition.

The roof itself is also in poor condition and should be considered for replacement. The damage to the metal fascia is not weather related, possibly damage by a delivery vehicle. It looks to be secure and the damage is just cosmetic.





## Old Browning High School

The existing roof systems on this facility are modified built up (base sheet, two inner plies and granulated cap sheet, typical of all modified BUR assemblies for the school district) and architectural standing seam metal.

The general condition of the standing seam metal is good, with some problems around the penetrations, but the flashings and panels are tight with no visible wind damage. The condition of the modified BUR is fair. The BUR sheet itself is in good condition, the flashings and the flat to metal transitions seem to be the problematic areas.

Deficiencies are:

BUR: Modified flashing loose at perimeter metal, some minor splitting of cap sheet, tie-in transition to metal roofing, penetrations with no flashing, loose/delaminated seams, loose flashings at some units.

Standing Seam: Improperly flashed or missing flashings at penetrations (units, pipes), tie-in at BUR transition.

The BUR and standing seam assemblies are both in good condition. With some maintenance, these systems could be expected to remain in a weathertight condition for some time.











## Browning Middle School

The existing roofing assemblies on this facility are Modified BUR (typical assembly) and a TPO single ply roof assembly at the new areas.

The general condition of the Modified BUR areas would be considered very good. There are some issues but they are minor. There is limited migration of the sheet. The single ply TPO would be considered excellent (new roof system in regards to the installation date). There are a few minor issues at flashings.

Deficiencies noted:

BUR: loose flashing at corners, steep to lower slope transition seals, curbs that need to be covered, cap sheet flashing at perimeter metal needs re-sealed, some curbs need to be properly flashed, some loose seams, plugged downspouts at north entry way causing overflow of the gutter and icing problems on walkway.

TPO: very minimal seam deficiencies, a few blow patches to re-seal, some loose wall flashing at the top/gym roof.

While there are a few items that should be addressed on this facility with maintenance, in general, both systems are in excellent condition.













## Browning High School

The existing roof assemblies on the High School are Modified BUR (the majority of the building), standing seam mechanically seamed metal panels at the gym and a single section that has TPO.

There are significant deficiencies on the Modified and the metal roof areas, however, despite the problems, both are in good condition. The problems at the BUR are mainly at the penetrations and some of the flashings. All of these can be corrected with maintenance. The major problem at the metal roof is one side, which again can be corrected.

### Deficiencies:

BUR: loose laps at vertical joints, flashings at pipes cracked or loose, loose/missing or cracked out corners on units, pipes not flashed, holes in the drain sumps, modified flashings at perimeter metal is loose or not attached, metal flashing at perimeter needs to be re-attached/hooked to cleat

TPO: minor peeling at some t-joints

Metal Panel Assembly: some snow guards are ripped off/missing, dented metal panels due to movement from the wind, holes or breaks in the panel due to the wind, sealant at units had deteriorated and they need to be flashed with uncured membrane, loose damaged panels that need to be replaced on the south side of the gym.

There is maintenance that needs to be performed on the BUR and the metal area, but overall, the assemblies on this facility are in good condition.













## Babb School

The existing roof assemblies in Babb are Modified BUR and an architectural mechanically seamed standing seam metal roof assembly over the gym area.

These are both in excellent condition with some maintenance needed. The majority of the problems are at the gutters and the penetrations.

Deficiencies are:

BUR: Modified BUR flashings are loose/peeling at the metal edging, corners are loose or missing at some units, pipe improperly flashed, snow entering thru the metal ridge cap

Metal Roof: extreme snow weight has broken the gutter straps, frozen downspouts have been blown out

Both assemblies on the facility are in good condition but do need maintenance performed in order to keep the systems in order.













Each school has maintenance that does need to be performed. However, each problematic area is not causing leaks inside the buildings. The attached photos show a minute portion of the areas that would need to be addressed at some point. It basically comes down to how in depth with repairs the district would like to go. There are the obvious areas that are blowing off or have blown off that should be addressed first.