

JOHNSON WILBUR ADAMS, INC.

Structural Engineering

May 3, 2024

Mr. Anthony DeMichael
Palatine Park District
250 E. Wood Street
Palatine, Illinois 60067

**Re: Palatine Stables – Palatine, IL
Structural Condition Assessment
JWA Project No. 2024201**

Dear Anthony:

Per your request, a site visit was performed on Friday April 26, 2024, at the above referenced Park District Facility. The purpose of the site visit was to visually observe the existing structural condition of the wood framing and foundation systems of two barn buildings.

Both existing barn buildings were constructed as typical pole barns with the main columns of the buildings extending below grade to provide lateral stability for wind loads. It was unclear exactly how far below grade the columns extended. In general, the columns were observed to be either 6x8 or 7 ½ inch diameter wood columns spaced at approximately 10'-0" o.c. The columns support pre-engineered wood roof trusses at the interior arena portion of the buildings and wood beams at the exterior stable stalls on the sides. 2x6 roof purlins spaced at approximately 24" o.c. and supporting a metal roof span between the trusses or beams.

The existing condition of the roof and foundation systems of both building and recommended repairs will be discussed below:

Roof/Viewing Platform Structures

In general, the roof structure of both barn buildings was observed to be in fair structural condition. Other than the items noted below no significant movement or distress was observed in any of the structural roof elements that would indicate that an instability or load capacity issue currently exists. The following deficiencies were observed.

1. At the west barn building the arena roof purlins were observed to be sloping down to the supporting roof truss on the east side of the building. The supporting truss was observed to be in good condition and did not show any signs of excessive deflection or stress. *It is my opinion that the existing condition of the roof structure in this area is not an immediate structural concern at this time. However, further investigation should be performed to determine the cause of the deflection and any potential repairs that may be required.*
2. At the west barn building a wood roof truss on the south side of the building was observed to have a horizontal crack in the bottom chord of the truss. *The truss bottom chord should be repaired as soon as practical preferably prior to the next winter season. The repair will likely consist of sistering new 2x6 members on each side of the bottom chord at the location of the crack.*
3. At the west barn building the bottom chord of a roof truss above the arena judging platform was observed to be cut and removed. No significant distress or deflections were

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observed in the truss at this location that would indicate that a load capacity issue currently exists. *However, it is my opinion that the truss should be repaired or properly supported as soon as practical to restore continuity back to the truss bottom chord.*

4. At the west barn building the bottom chord of a roof truss at the cross-gable roof on the east side of the building was observed to be cut and removed to accommodate a higher ceiling structure. No significant distress or deflections were observed in the truss at this location that would indicate that a load capacity issue currently exists. *However, it is my opinion that the truss should be repaired or properly supported as soon as practical to restore some continuity back to the truss bottom chord.*
5. At the west barn building arena judging platform the wood guard rail was observed to be shorter than the building code required 42" height for a safety railing. *If the platform will still be used for judging events the existing railing shall be modified or replaced with a code compliant railing system prior to the next use.*

Pole Barn Columns/Wood Girts

1. At both the east and west barns the wood girts located at the bottom of the walls between the columns were observed to be rotting due to the long-term exposure to moisture and soil. These girts are primarily intended to support the siding at the bottom of the walls and are not required for structural stability of the buildings. *As a result, it is my opinion that the condition of the bottom girts is not an immediate structural concern at this time. However, the girts should be replaced as required during any future repairs to the exterior walls.*
2. At both the east and west barn buildings rot was observed at the bases of numerous columns as a result of the long-term exposure to moisture below grade. Of the columns exposed at the time of the site visit 4 columns at the east barn building and 9 columns on the east side of the west barn building were observed to be rotted to the point that repairs are required. The exposed columns observed on the west side of the west barn building had either been previously repaired in 2014 or were in fair structural condition due to a sheet metal cover added to the exterior base of the wall. *It is my opinion that the current condition of the column bases at both barn buildings does not present an immediate life safety issue for continued use. However, the columns do contribute to the overall stability of the structure for both gravity and lateral loads. As a result, it is my opinion that the rotted column bases should be repaired as soon as possible to prevent any further damage to the barn structures over time. Since all of the column bases were not exposed at the time of my site visit it is my recommendation that all column bases be reviewed at the time of the repairs to determine the full quantity of repairs required. For reference refer to the attached Sketch SK1 of 1 dated 10/06/2014 for the repair detail used in 2014. In addition, refer to the attached sketches SK-1 and 2 of 2 dated 05/03/2024 for approximate locations of the columns observed to be rotted.*

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If you have any questions regarding this report or need additional assistance, please feel free to call me.

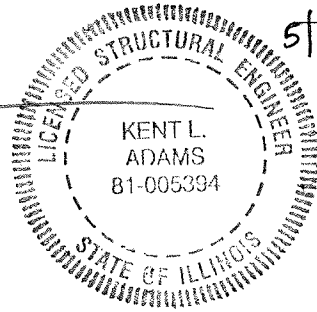
Scope and Limitation:

This report is a qualitative review of the structure and does not represent an exhaustive structural analysis of the building and its components. This report addresses the exposed and accessible structural framing only. This report does not address nonstructural items such as mechanical, plumbing, and electrical systems, weather enclosure items (roofing, gutters, siding, doors, and windows), life safety and accessibility issues, architectural features, pest control, mold, mildew, fungus, hazardous materials etc. All structural observations were visual only; no measurements or tests were performed. The observations were limited to the exposed and accessible areas of the building. The opinions and recommendations given above are based on the conditions assessed at the time of the observations. JWA reserves the right to modify or change any of these opinions in the event that other areas of construction are made accessible for observation or other documents and information about the structure become available. JWA makes no warranties, expressed, or implied in this report.

Very truly yours,



Kent L. Adams, S.E.
Johnson Wilbur Adams, Inc.-Principal



5/3/24

License Exp. 11/30/24

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Photo 1 Sloping Roof at West Barn



Photo 2 Cracked Truss Bottom Chord at West Barn

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Photo 3 Cut Truss Bottom Chord Adjacent to Arena Judging Platform



Photo 4 Cut Truss Bottom Chord at West Barn Cross Gable Roof

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Photo 5 Non-Code Compliant Railing at Judging Platform



Photo 6 Rotting Interior Column Base at East Barn Building

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Photo 7 Deteriorated Jamb Column at North Wall of West Barn Building



Photo 8 Deteriorated/Missing Column Base at East Barn Building

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Photo 9 Deteriorated/ Missing Column Base at East Barn Building



Photo 10 Rotted Column Base on East Wall of West Barn Building

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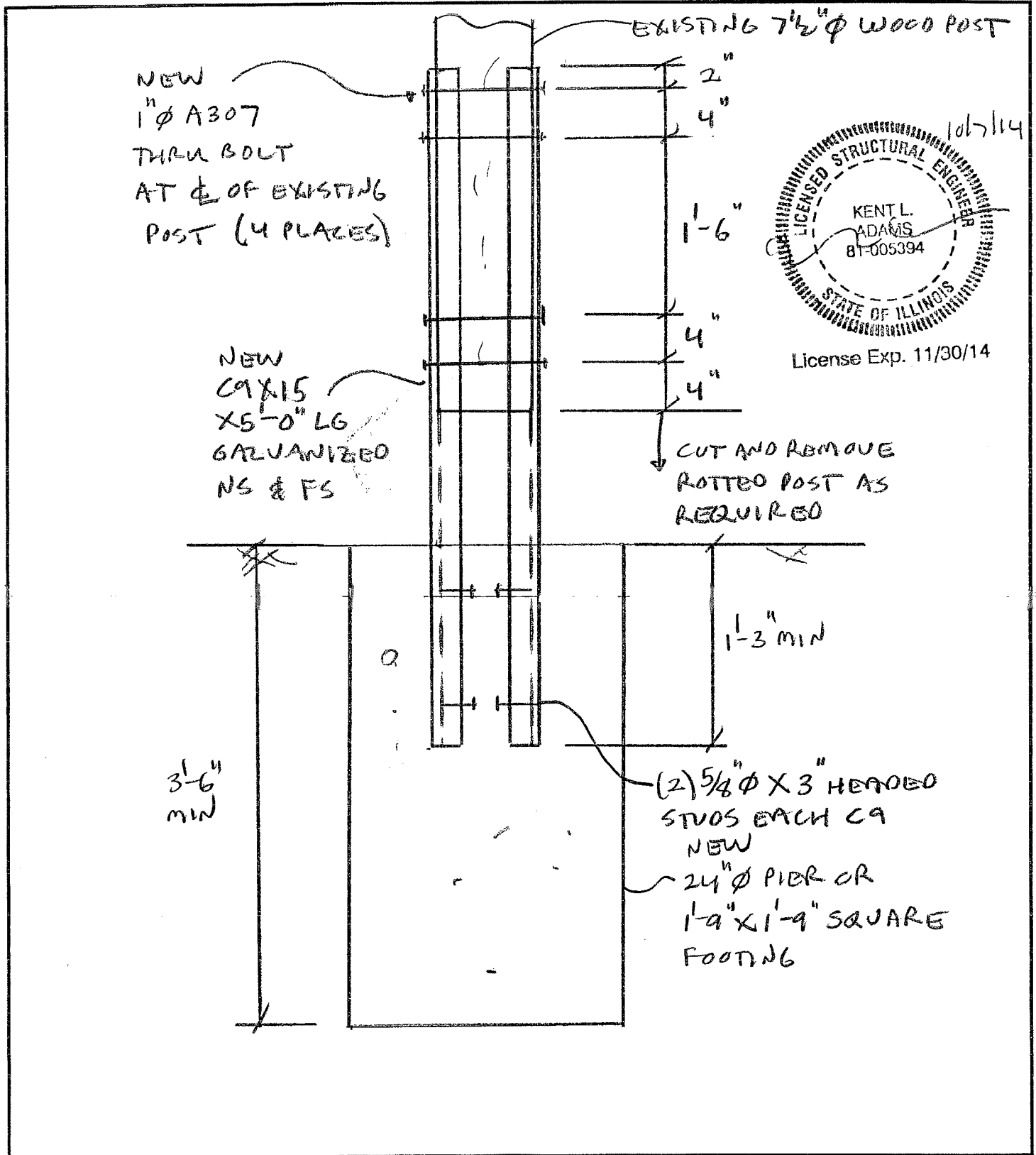
Photo 11 Rotted Column Base on East Wall of West Barn Building



JOHNSON WILBUR ADAMS, INC.
STRUCTURAL ENGINEERING

175 N. WASHINGTON ST.
WHEATON, ILLINOIS 60187

JOB PALATINE STABLES NO. 2014367
SHEET NO. SK1 OF 1
CALCULATED BY LLA DATE 10/6/14
CHECKED BY _____ DATE _____
DESCRIPTION _____





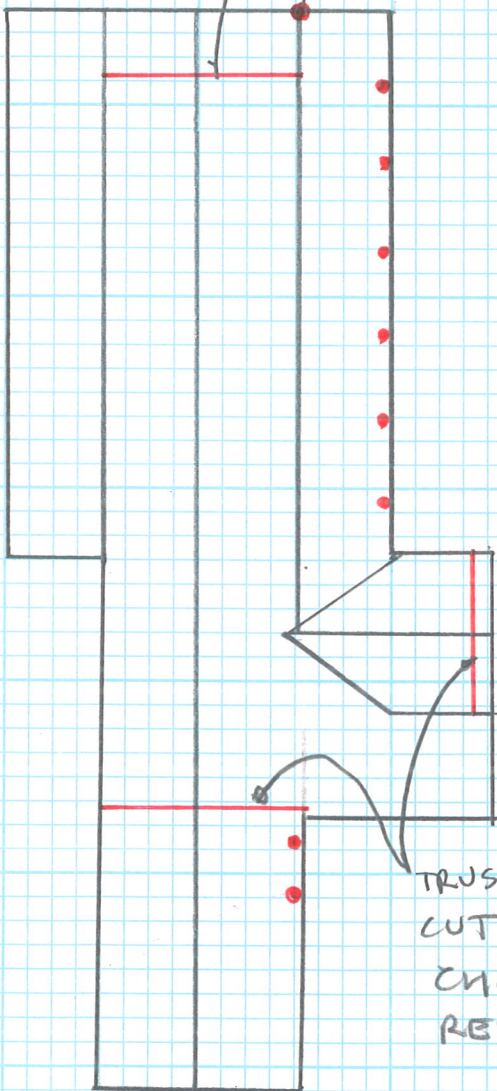
JOHNSON WILBUR ADAMS, INC.
STRUCTURAL ENGINEERING

330 S. NAPERVILLE ROAD • SUITE 300
WHEATON, ILLINOIS 60187

JOB PPD STABLES NO. 2024201
SHEET NO. SK-1 OF 2
CALCULATED BY KLA DATE 5/3/24
CHECKED BY _____ DATE _____
DESCRIPTION WEST BARN PLAN

CRACKED TRUSS
BOTTOM CHORD

INDICATES APPROXIMATE
LOCATION OF ROTTEN
COLUMN TO BE REPAIRED



TRUSS WITH
CUT BOTTOM
CHORD TO BE
REPAIRED

PLAN 4N



JOHNSON WILBUR ADAMS, INC.
STRUCTURAL ENGINEERING

330 S. NAPERVILLE ROAD • SUITE 300
WHEATON, ILLINOIS 60187

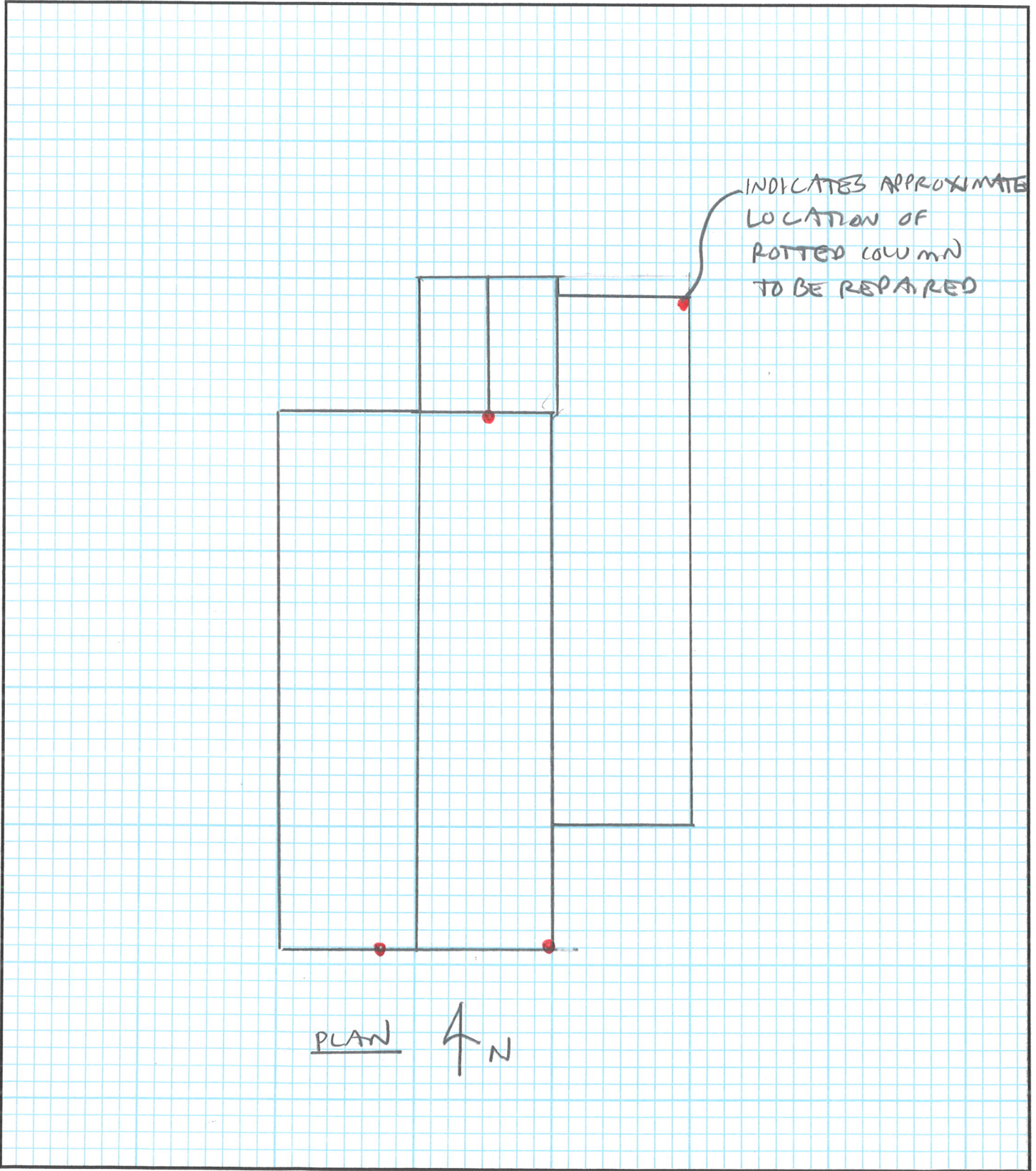
JOB PPD STABLES NO. 2024201

SHEET NO. SK2 OF 2

CALCULATED BY KLA DATE 5/3/24

CHECKED BY _____ DATE _____

DESCRIPTION EAST BARN PLAN



INDICATES APPROXIMATE
LOCATION OF
ROTTED COLUMN
TO BE REPAIRED

PLAN ↑ N