



POLK COUNTY, WISCONSIN

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Sharon Jorgenson, County Clerk
100 Polk Plaza, Suite 110, Balsam Lake, WI 54810
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MINUTES

AD HOC COMMITTEE ON FAIRGROUNDS INFRASTRUCTURE

Government Center, 100 Polk County Plaza, Balsam Lake, WI 54810

County Board Room

Thursday, May 4th, 2017 2:00 p.m.

Meeting called to order by Chair Larry Jepsen at 2:06 p.m.

Members present

Attendee Name	Title	Status
Larry Jepsen	Chair	Present
Joe Demulling	Supervisor	Present
Chris Nelson	Supervisor	Present
Brad Olson	Supervisor	Absent
Mike Prichard	Supervisor	Present

Also present were Dana Frey, County Administrator, Sharon Jorgenson, County Clerk, Debbie Peterson, Director of Parks, Forestry, Buildings, & Solid Waste, Dale Wood, Fair Board Representative, and members of the public.

Approval of Agenda- Chair Larry Jepsen called for a motion to approve the agenda. **Motion** (Nelson/Prichard) to approve agenda. **Motion** carried by unanimous voice vote.

Approval of Minutes- Chair Larry Jepsen called for a motion to approve the February 28th minutes. **Motion** (Nelson/Demulling) to approve minutes. **Motion** carried by unanimous voice vote.

Public Comment: Committee received public comment from members of the public. Committee received information regarding a pending donation of \$20,000 for repairs on "H" Barn, as well as other public comment.

Announcements and committee information:

Chair Jepsen declared committee charges and responsibility to exercise due diligence in examining all possible options (restoration, repair, or reconstruction) for Fairground grandstand and to develop recommendations concerning available options for the grandstand.

Discussion items:

Committee discussed options for Fairground grandstand and obtaining RFP's (Request for Proposal) for a variety of options to determine feasibility. Committee was informed by

Administrator Frey that per County policy a minimum of three bids (RFP) would be required. Supervisor Nelson suggested that the committee obtain estimates for several configurations for the Fairground Grandstand as follows:

Demolition Options/Estimates:

1. Obtain estimate for possible demolition options for existing Fairground Grandstand:
 - a. Least expensive option using heavy equipment to raze building.
 - b. Humane option –involving manual tear down and removal of boards from building, with possibility of auctioning off useable barn board/grandstand materials.

Permanent Repair Options/Estimates:

2. Obtain estimate for constructions costs associated with permanent repairs to Fairground Grandstand structure as per Short Elliott Hendrickson Inc. structural evaluation letter dated October 19, 2016.
 - a. Include cost for new roof on structure—install either shingles or steel with “historic look”.
 - b. Improve ADA access/egress with larger platform of 400 square feet.

New Construction Options/Estimates:

3. Obtain estimate for new construction of Fairground Grandstand using a two phase approach.
 - a. Phase 1: Install bleachers only on site with suitable seating capacity and appropriate ADA access/egress of 400 square feet minimum.
 - b. Phase 2: Construct roof over existing bleachers. Include price options for roof only over bleachers or option for fully enclosed complex including built in storage areas underneath building.

Debbie Peterson, Department Head for Parks, Forestry, Buildings and Solid Waste will obtain estimates on the various options and provide the estimates to the committee.

Committee discussed developing recommendations concerning an inventory of improvements and repairs needed for Fairgrounds buildings infrastructure. Administrator Frey provided information regarding the use of Capital Improvement Plans, while informing the committee that emergency repairs are handled in a different way. Administrator Frey informed committee that the Fair Board’s inventory of pending projects and needed repairs should be submitted by the Fair Board annually to Debbie Peterson who will determine whether to include items under a Capital Improvement Plan in the budget or as a necessary emergency repair. Capital Improvement Plan items then come to the Board in the budgeting process.

Action Items:

Committee postponed decision on Resolution 16-17: Resolution to Amend 2017 County Budget to Provide for Consulting Services Concerning the Repair or Restoration of the Polk County Fairground Grandstand.

Next meeting: To be determined--Mid-June after receipt of estimates.

Future Items:

Continuation of discussion of options for Fairgrounds Grandstand and feasibility.

Debbie Peterson to obtain estimates for options for Fair Grandstand and provide information to committee.

Provide committee with copies of letters/evaluation of Fairgrounds Grandstand received from Short Elliott Hendrickson Inc dated October 19, 2016 and December 6, 2016.

Motion (Prichard/Demulling) to adjourn. **Motion** carried by unanimous voice vote. Chair Larry Jepsen declared meeting adjourned at 3:45 p.m.

Respectfully submitted,

Sharon Jorgenson
County Clerk



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AGENDA AND NOTICE OF MEETING

AD HOC COMMITTEE ON FAIRGROUNDS INFRASTRUCTURE

Government Center, 100 Polk County Plaza, Balsam Lake, WI 54810

County Board Room

Thursday, May 4, 2017 at 2:00 p.m.

A quorum of the County Board may be present

- | | | |
|------|---|--------------|
| 2:00 | 1. Call to order | Larry Jepsen |
| | A. Approval of agenda | |
| | B. Approval of Minutes for February 28, 2017 | |
| 2:05 | 2. Public comment (3 minutes) | |
| 2:10 | 3. Announcements and committee information | Larry Jepsen |
| | 4. Action Items | |
| | A. Recommendation on Resolution 16-17: Resolution to Amend 2017 County Budget to Provide for Consulting Services Concerning the Repair or Restoration of the Polk County Fairground Grandstand. | |
| 2:30 | 5. Discussion Items | |
| | A. Develop Recommendations Concerning Options Toward Restoration, Repair, or Reconstruction of Fairgrounds Grandstand. | |
| | B. Develop Recommendations Concerning Inventory of Improvements/Repairs to Other Buildings and Supporting Infrastructure. | |
| | C. Identification of Subject Matters for Upcoming Meetings | |
| 3:30 | 6. Adjourn | |
-

This meeting is open to the public according to Wisconsin State Statute 19.83. Persons with disabilities wishing to attend and/or participate are asked to notify the County Clerk's office (715-485-9226) at least 24 hours in advance of the scheduled meeting time so all reasonable accommodations can be made. Requests are confidential.

1 Polk County Board of Supervisors

2 Resolution No. 16 -17

3 Resolution To Amend 2017 County Budget To Provide For Consulting Services Concerning the
4 Repair or Restoration of the Polk County Fairground Grandstand;

5 TO THE HONORABLE SUPERVISORS OF THE COUNTY BOARD OF THE COUNTY OF
6 POLK:

7 Ladies and Gentlemen:

8 WHEREAS, in adopting Resolution No. 2-17, the Polk County Board of Supervisors established the
9 Polk County Ad Hoc Committee on Fairgrounds Infrastructure to investigate cost estimates relating
10 to the repair or restoration of the Fair grandstand and to provide report and recommendation to the
11 County Board at the March 2017 regular meeting; and

12 WHEREAS, upon review of preliminary information at its February 28, 2017 meeting, the Ad Hoc
13 Committee on Fairgrounds Infrastructure recommended that the County Board authorize and
14 appropriate for expenditure the sum of \$21,000 for a structural evaluation of the grandstand to
15 accurately determine the repair or restoration costs.

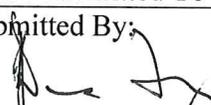
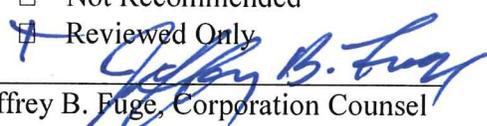
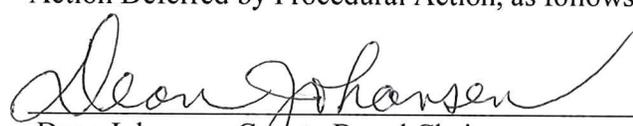
16 NOW, THEREFORE, BE IT RESOLVED that, pursuant to Wisconsin Statute Section 65.90(5)(a),
17 the Polk County Board of Supervisors authorizes an amendment to the 2017 County Budget to
18 transfer the sum of \$21,000 from County Fund Balance to the Fair Operating Budget – Other
19 Professional Services 101-20-55460-219), said sum to be expended toward the purchase of a
20 structural evaluation and other consulting services on the design of the repairs or restoration of the
21 grandstand.

22 BE IT FURTHER RESOLVED that, pursuant to Wisconsin Statute Section 65.90(5)(a), the Polk
23 County Board of Supervisors directs the Clerk to publish this resolution by Class 1 notice under
24 Sections 985.02 and 985.07(1) within 15 days of passage and post the adopted resolution on the
25 County's website.

(Continued on Page 2)

Polk County Board of Supervisors
Resolution No. 16-17

Resolution To Amend 2017 Budget To Provide For Consulting Services Concerning the Repair or Restoration of the Polk County Fairground Grandstand

Funding Source/ Funding Amount:	Fund Balance: \$
Date Reviewed as to Appropriations:	March 9, 2017 General Government Committee
Committee Recommendation as To Appropriation:	
Effective Date:	Upon Passage and Publication
Dated Submitted To County Board	March 21, 2017
Submitted By: 	_____
Review By County Administrator: <input type="checkbox"/> Recommended <input type="checkbox"/> Not Recommended <input type="checkbox"/> Reviewed Only _____ Dana Frey, County Administrator	Review By Corporation Counsel: <input checked="" type="checkbox"/> Approved as to Form <input type="checkbox"/> Recommended <input type="checkbox"/> Not Recommended <input checked="" type="checkbox"/> Reviewed Only  _____ Jeffrey B. Fuge, Corporation Counsel
Acknowledgement of County Board Action	
Mark As Appropriate:	
At its regular business meeting on the ____ of _____, 2017, the Polk County Board of Supervisors considered and acted on the above resolution, Resolution No. <u>16</u> 17: Resolution To Amend 2017 County Budget To Provide For Consulting Services Concerning the Repair or Restoration of the Polk County Fairground Grandstand; as follows:	
<input type="checkbox"/> Enacted by two-thirds majority of the board of supervisors by a vote of _____ in favor and _____ against. <input type="checkbox"/> Enacted by unanimous vote. <input type="checkbox"/> Defeated by a vote of _____ in favor and _____ against. <input type="checkbox"/> Defeated by voice vote. <input type="checkbox"/> Action Deferred by Procedural Action, as follows: _____	
SIGNED BY:  Dean Johansen, County Board Chairperson	
Attest:  Sharon Jorgenson, County Clerk	



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MINUTES

AD HOC COMMITTEE ON FAIRGROUNDS INFRASTRUCTURE

Government Center, 100 Polk County Plaza, Balsam Lake, WI 54810

County Board Room

9:00 a.m. Tuesday, February 28, 2017

Meeting called to order by Chair Craig Moriak at 9:03 AM.

Members present

Attendee Name	Title	Status
Craig Moriak	Chair	Present
Larry Jepsen	Vice Chair	Present
Chris Nelson	Supervisor	Present
Brad Olson	Supervisor	Present
Mike Prichard	Supervisor	Absent

Also present were Tammy Peterson, Executive Assistant, Dana Frey, County Administrator, Debbie Peterson, Director of Parks, Forestry, Buildings, & Solid Waste, Dale Wood, Fair Board Representative, members of the public and member of the press.

Approval of Agenda- Chair Craig Moriak called for a motion to approve the agenda. **Motion** (Jepsen/Olson) to approve agenda. **Motion** carried by unanimous vote.

Approval of Minutes- Chair Craig Moriak called for a motion to approve the February 16th minutes. **Motion** (Olson/ Jepsen) to approve minutes. **Motion** carried by unanimous vote.

Public Comment: Russ Hanson from Cushing and Norm Toensing from St Croix Falls spoke on the Polk County fairgrounds.

Announcements and committee information:

Chair Moriak provided announcements regarding committee information to members.

Chair Moriak called on Deb Peterson to give report on durability and life expectancy of portable bleachers for Polk County Fairgrounds. Ms. Peterson provided handout on rental, deposit and purchase of bleachers that would hold up to 1500 people. Ms. Peterson stated Jeff Fuge, Corporation Counsel is working on a contract.

Discussion items:

Chair Moriak called on open discussion on the possible restoration or renovation of existing grandstand, restoration or renovation of part of the grandstand, or demolition of existing grandstand and replacement with full grandstand or bleachers with or without roof or sides.

Motion (Nelson/ Olson) to approve to rent temporary bleachers from Always Available Seating.

Motion was amended by (Nelson/ Jepsen) to include securing grandstand so no entry and move to County Board. **Motion** carried by unanimous vote.

Motion (Nelson/ Jepsen) to prepare a resolution to spend up to \$21,000 for a structural review of the grandstand to accurately determine repair costs and to submit to the County Board for 1st reading in March (no action, only information). **Motion** carried by unanimous vote.

Chair Craig Moriak announced he has moved to a different district and will no longer be on the County Board effective April 1st.

Motion (Olson/Chris Nelson) to adjourn. Chair Craig Moriak declared meeting adjourned at 10:32 a.m.



Building a Better World
for All of Us®

October 19, 2016

RE: Polk County Parks and Recreation
Structural Condition Evaluation of Existing
Grandstands - St. Croix Falls, Wisconsin
SEH No. POLKC - 138708 14.00

Deb Peterson
Director
Polk County Parks and Recreation
100 Polk County Plaza
Balsam Lake, WI 54810

Dear Ms. Peterson:

The purpose of this letter is to present the results of Short Elliott Hendrickson's structural evaluation of the existing Polk County Fairgrounds Grandstands structure in St. Croix Falls, Wisconsin. This report represents our opinions based upon our September 8, 2016 site visit and structural calculations and qualitative assessments based on data gathered. In the report we offer background information, descriptions of observations, a general assessment of conditions and discussion of potential repair approaches and corrective measures.

The goal of this structural evaluation has been to identify structural safety concerns and to provide engineering assessment of the extent and severity of identified problems. Polk County may use this information when evaluating risks associated with ongoing use of the structure and for considering options for repairs of the structure or complete replacement. If the County chooses to proceed with repair options a more complete structural evaluation, including documentation of individual members and connections throughout the structure that warrant repair, will be necessary prior to design and detailing of repairs.

BACKGROUND INFORMATION

The grandstands structure at the Polk County fairgrounds is a wood framed structure approximately 200 feet in length by 30 feet in depth from front to back. There is a knuckle near the middle of the structure where five 16 foot bays to the south and six 16 foot bays to the north intersect at a slight angle. The two northernmost bays appear to have been partially reconstructed and there are some framing differences in these bays, so it is possible that the northernmost bay was a later addition. Based on concrete etching near the south end of the structure, it is apparent that the grandstand was constructed before the date of August 28, 1927. Metal cladding has since been applied to the perimeter of the structure. Framing consists of original rough cut lumber and heavy timber as well as treated lumber that has been installed to repair the original structure. Seating platforms and walkways are constructed with 2x12 seat boards and 2x8 foot boards supported on 2x10 and 2x12 stringers (appears to vary between original and replacement). Seat and foot boards typically span approximately 3'-6" but the maximum measured span was 4'-3". The sloped stringers are spaced at up to 4'-3" on center, although in much of the structure additional stringers have been added to bring the spacing to approximately 2'-0". Beams supporting the sloped stringers are triple 2x8 lumber supported on timber columns. The landing at the base of the grandstands is a concrete slab on grade with concrete masonry walls each side. The press platform at

Engineers | Architects | Planners | Scientists

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the middle knuckle of the structure appears to have been reconstructed and the access ramp at the front of the structure also appears to be a recent addition.

At the front and back of the grandstands structure, timber columns extend above the seating platform to a roof structure consisting of lumber trusses and roof joists. Columns extending to support the roof are typically 6x8 timber posts, although columns at each end are smaller and some have been previously repaired or replaced. Other posts not extending above the seating level range in size from 4x6 to 6x6 to built-up 2x6 columns. Some of the intermediate framing in the space below the bleachers (particularly on the north end) appears to have been a later addition. The framing below the seating platform is regularly braced with 2x lumber diagonal braces in each direction. Typical connections between braces and main frames were nailed. Main frame columns are connected to the front CMU wall with small diameter bolts and steel brackets. Some foundation connections have been previously repaired. The outside wall at the rear (west side) is framed with rough cut 2x6 studs at 24" on center between main frames. Original openings in the rear wall have typically been permanently closed and covered with metal siding on the outside of the building but a number of ventilation openings were maintained through the steel siding.



Photo 1: Grandstands from Front (East) Side

CONDITION OBSERVATIONS

This section describes conditions observed in the field that are cause for structural concern because they affect either the load capacity of individual elements or entire sections of the structure. This portion of the report is focused on observations of deterioration or distress but some discussion is provided regarding potential approaches to strengthening or repairing deteriorated conditions.

Foundation Settlement and Building Drift

The most significant structural concern with the grandstands structure is the extent and severity of settlement and lateral drift. It appears that the differential settlement and lateral drift are interrelated but it is possible that multiple mechanisms have worked to create these conditions.

Settlement is most apparent at the north end of the building with the worst condition occurring about 30 feet from the knuckle. Settlement is visually evident viewing the front elevation of the grandstands (Photo 2). Other evidence is present within the area below the north wing including sloped braces that appear to have originally been horizontal, distress at the ceiling of the concession area (north part of the



Photo 2: Note Sloped Seats Right of Knuckle



Photo 3: Uneven Ceiling and Sloped Beams in Concession Area

may have occurred immediately during construction. However, the lack of wood discoloration adjacent to a settled partition wall on the north edge of the concession area suggests that a large proportion of the settlement was not immediate.

knuckle), and the apparently unintended drop in the rear wall foundation north of the knuckle. Measurements of the footboard elevations using a contractor's self levelling laser showed a drop of over 16 inches from the middle of the knuckle to the second frame line to the north. The south wing also exhibits some settlement away from the knuckle, but only in the magnitude of approximately 2 inches. It is unknown to what degree the difference on the south wing is the result of soil movement as opposed to original construction tolerances. On the other hand, the condition of the north wing is a clear indicator of differential movement. While the settlement is readily apparent looking at the seats, the roof doesn't show nearly as much evidence of movement, suggesting some of the settlement

Repairs to address the settlement observed in this structure would be significant. Even assuming areas of moderate settlements of up to 4 inches would be allowed to remain, repair would require significant jacking, structure adjustment, and installation of supplemental foundation measures such as helical piles. If repairs are undertaken, it is likely that middle and rear columns would need to be jacked and supported throughout most of the north wing. Another option would be to leave the existing settlement in place on the north wing and provide foundation measures only to prevent further movement. This approach would also require repairing and reinforcing joints that have been damaged by the settlement and we would recommend repair or reconstruction of walls, ceilings, and other elements that have been damaged by the settlement. Considering the severity of the condition, the alternative of arresting but not correcting settlement may be preferable.

Lateral drift of the structure is also evident from a number of perspectives. Looking at the rear wall of the building, lateral drift of each wing is apparent. Measurements of plumb indicate that the middle columns of the south wing lean forward by generally 2 inches and as much as 4 inches in the first 8 feet above the grandstand seating elevation. The north wing middle columns lean the opposite direction, but less significantly. These columns lean back by as much as 2 inches in the first 8 feet above the grandstand seating elevation. The drift is most apparent when looking at the rear wall near the knuckle where the drift occurs in opposite directions each side (Photo 4).

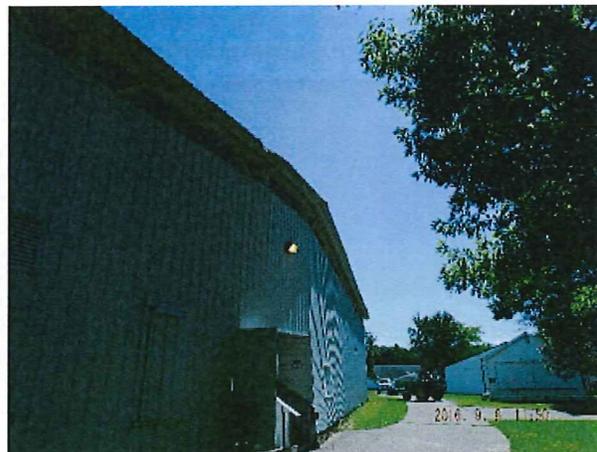


Photo 4: Visible "Twist" in Rear Wall at Knuckle

Part of this lateral drift may be associated with the settlement of foundations (particularly on the north wing), but the magnitude and direction of movement on the south wing suggests that the drift may be permanent displacement from a past wind event. Such movement would likely stress or compromise bracing connections.

Repair of lateral drift conditions would require progressive operations to first apply force to adjust the structure to a relatively plumb condition then temporarily brace the structure until new supplemental connections could be established between existing braces, columns, and foundation anchors. The process may require cutting or removing nails at some existing connections before adjusting the building to avoid splitting or crushing the wood members at the connections. New supplemental connections would likely consist of a combination of bolts, nails, and off-the-shelf metal plate connectors designed for the purpose.

Wood Deterioration

A number of deteriorated existing wood elements were discovered in locations throughout the grandstand structure, primarily near exposed edges. Moisture deterioration of these wood members and connections results in reduced structural capacity, so these deteriorated elements will require repair. Deteriorated items observed during our site visit included:

- A small number of seat and foot boards near ends of grandstand
- Wood top rail of guards at both north and south ends
- 4x4 knee braces at main frame columns near end of building (Photo 5)
- Bases of main frame columns on front wall (particularly at press platform)
- Top of several 8x6 columns on west wall of north wing
- Roof rafters near ends of structure



Photo 5: Deteriorated Knee Braces

Sizing and Connection Issues

Several conditions were noted where flaws in existing construction result in potentially unsafe conditions that should be addressed. These conditions include excessive cantilevers in roof beams where the north and south wings intersect at the knuckle (Photo 6). Another concern is the location of splices in roof rafters away from points of support. It is not clear whether these are original conditions or the result of later modifications, but supplemental framing should be provided to eliminate these weak points. The press platform also has a number of minor deficiencies including guard connections, middle beam sizing, and connections of beams to posts. These deficiencies can be corrected relatively easily.



Photo 6: Excessive Roof Beam Cantilevers

Numerous connections at the roof level are split or separated. These separations and splits have likely resulted from the settlement and lateral drift issues discussed previously in this report. The failure of these connecting members reduces the stability of the roof framing system. In addition to re-establishing these connections, further analysis of the roof system may indicate that additional lateral bracing and possibly periodic diagonal bracing should be installed to reinforce the capacity of the system for lateral wind loads.

STRUCTURAL ASSESSMENT

Evaluation of individual components of the grandstands structure has required numerous assumptions regarding grades of construction lumber and timber and the typical condition of the members. Therefore, results of structural evaluation calculations presented in this section should be considered approximate. They are intended to provide a picture of the general structural adequacy of the structural systems based on analysis of key structure components.

This general evaluation has not included structural evaluation of all components and connections in the large grandstands structure. Not all building components and conditions have been analyzed by calculation. For instance, systems such as the lateral bracing below the grandstand involved approximations to assign loads to individual members. Detailed analysis of these components and connections is outside the scope of this general evaluation, but may be appropriate as part of a comprehensive evaluation and repair program that would include checking all components and connections within the structure for sway loads and wind loads as well as gravity loads.

Building Code Requirements

Short Elliott Hendrickson reviewed the requirements of the current Wisconsin Commercial Building Code and other building codes referenced within the state building code as part of this evaluation. The specific standards applicable to this structure are the following:

- Wisconsin Commercial Building Code
- 2009 International Building Code (IBC) – by reference
- ASCE 7-05 Minimum Design Loads for Buildings and Other Structures – by reference
- 2009 International Existing Building Code
- ICC 300 – 2002 Standard for Bleachers, Folding and Telescopic Seating, and Grandstands

The minimum uniformly distributed live load defined in ASCE 7 for stadium and arena bleachers of 100 pounds per square foot (psf) is applicable to new structures of this kind. In addition to this uniform live load, the code requires bleachers to be braced to sustain horizontal swaying forces of 24 pounds per linear foot (plf) of seat parallel to each row of seats and 10 plf of seat perpendicular to each row of seats. Applicable wind loads and combinations with live and dead loads are also provided in ASCE 7.

Although the 2009 International Existing Building Code (IEBC) contains provisions for allowing unaltered existing structures to remain unmodified if damage has not reduced the capacity below original design loads, the standard specifically excludes grandstands from the scope, referring to ICC 300. The ICC 300 Standard describes load requirements similar to ASCE 7 for new structures as well as additional design requirements. The chapter in ICC 300 covering existing grandstand structures requires them to be maintained in good repair and structurally sound, specifically requiring repair of unsafe conditions. The IEBC requires that repairs or modifications be designed to bring the affected portion into compliance with current code requirements.

Based on these codes and standards, SEH evaluated structural elements considering loads required for new structures. Where stresses due to these design loads would exceed allowable load capacity of the structure by more than 50%, we have considered it an unsafe condition. Also in locations where deterioration or distress of existing materials has compromised their capacity, we have considered it an unsafe condition.

Historical Codes and Specifications

Historical codes and specifications can shed light on the design loads that were likely applicable at the time of construction and grades and types of wood that would have been available. It is our understanding that the structure was built prior to 1930. It is unknown whether the structure was

engineered or designed empirically according to practices commonly used at the time for similar structures. Because there was no timber design code in place at the time of construction, the 1944 "National Design Specification for Dimension Lumber and Its Fastenings", the first comprehensive national standard for designing wood, was used as a source for information about design requirements and wood grades and properties that were used in the early days of engineered wood design. We also used a table of 1922 "Design Values for Structural Timber" available from the American Wood Council.

Assumptions of Design Properties and Method of Analysis

Our method of analysis for original lumber materials was to assume favorable (high) original material grades and allowable stresses for original members. Based on typical wood design values published in the 1922 "Design Values for Structural Timber" we selected a design allowable stress in bending of 1,300 psi for consideration of existing lumber. This allowable stress design value is the equivalent of machine stress rated (MSR) lumber that is available today. The reason for this approach of assuming favorable design properties was to acknowledge the better material properties of older lumber that was more likely harvested from old growth forests. This approach also avoids making unreasonably low assumptions about the existing materials. If results of analysis considering favorable material properties indicate overstress conditions under design loads, we are able to confidently recommend that strengthening is needed. If results instead indicate that the structure is adequate for code-required design loads, then testing to confirm lumber species and material properties would be required to verify the assumptions.

For newer lumber members we also used an approach of using favorable material design values. A newer stringer was found with a Hem-Fir No. 1 grade stamp, so this relatively high grade of lumber was assumed when analyzing new stringers even though not all stringers were individually observed.

Capacity of Structurally Intact Framing Elements

Calculations were performed for major structural elements of the grandstands including sloped main stringers and intermediate beams supporting stringers. Even with favorable material assumptions, stringers and some beams were found to be inadequate to support live loads required by the current code. In some areas, such as the north wing where an additional line of framing has been added below the upper stringers, the newer stringers were found to have a design stress to allowable stress ratio of less than 1.5, meaning they could remain without modification. However, the majority of the grandstand framing does not meet this criteria and warrants strengthening. Strengthening of these elements (likely by installing sister joists) and improvement of connections would be required to bring the structure up to current code standards.



Photo 7: Reconstructed Stringers at North End

Components were also evaluated according to ICC 300 recommendations. Stair treads were evaluated considering a 300 lb point load at mid-span, consistent with the ASCE 7-05 requirements for concentrated loads on exit ways. These members were shown to be inadequate by the current code where stringer spacing is 3'-6" or greater, but with a design stress to allowable stress ratio of less than 1.5. The 2x12 seat framing (which appears to be replacement construction) was found to be adequate for the requirement of 120 plf along seat boards.

Other structure elements, such as columns and bracing below the grandstands, appear to be generally adequate, assuming high grade lumber and timber material without significant deterioration. However, a more detailed analysis of individual bracing members for sway loads or wind loads may yield additional strengthening requirements.

The roof rafter system over the grandstand structure was evaluated using approximate methods. Many components and particularly connections appear to be undersized for current design snow loads, but this may be less of an issue unless the structure is used in the winter months. Of greater concern is the capacity of the primarily nailed roof connections to resist wind uplift forces. A detailed analysis of connections was beyond the scope of this general structural evaluation, but many of the nailed and bolted connections among roof framing members, bracing members, columns, and knee braces are suspect based on visual observation.

Capacity of Deteriorated Framing Elements

Structural roof framing, column knee braces, and wood guardrail framing at each end of the grandstand exhibits severe to moderate deterioration within 10'-20' of the outside edge. Also several columns on the back face of the grandstands on the north end have been partially replaced, apparently because of prior deterioration. The capacity of seat and foot boards is compromised near the outside edges of the structure where the bearing and bending capacity are compromised by moisture-related deterioration. All of these deteriorated elements are considered unsafe conditions and require repair or replacement meeting the design criteria of the current code.

Nailed bracing and beam connections in the severely settled portion of the structure are suspect because of the amount of unintended movement exhibited by leaning and settlement. These connections may need to be strengthened to restore the capacity of the structure to support lateral sway and wind loads, particularly if the structure is restored to a plumb condition as discussed previously.

Moisture deterioration in roof rafters, beams, and column knee braces results in significantly weakened connections at the perimeter of the building where wind uplift forces are highest (Photo 8). These compromised connections constitute an unsafe condition that necessitates strengthening of the deteriorated wood members and supplementing connections with engineered metal plate connectors.



Photo 8: Deteriorated Roof Rafters and Deck Boards

Architectural Considerations

In addition to the numerous structural concerns identified in this report, there are several architectural elements of the grandstands that do not meet current code requirements and that may present challenges if the cost or extent of structural repairs triggers requirements to bring the accessibility of the structure into code compliance.

Based on ICC 300, the state referenced code related to Bleachers and Grandstands we noted the following:

- Occupant capacity of this grandstand is 1,450 persons
- Aisle width going up the bleachers is wide enough to meet code, however the handrail centered on each aisle does not have acceptable handrail to meet code and exit aisles at base of

bleachers are all far too narrow to meet exit requirements. Per code, these aisles should be 58 inches wide, however current aisles are only 29 inches wide and restricted down to 19 inches wide at stairs.

- There are several instances where guardrails do not meet the minimum height of 42 inches which applies where seating is adjacent to an open end and over 30 inches above adjacent grade.
- Guard at edges of press platform should have balusters or grid that will prevent 4" sphere from passing at any point.
- While most stairs meet code required riser height, the first step at each aisle up to bleachers are 8 1/2 inches high, which is 1/2 inch higher than allowed by code. Also the bottom riser differs by more than 3/8 inch in height compared to risers above.
- The relatively low height of the roof over the upper portion of the grandstand does not provide a clear height of 80 inches over aisle accessways as required by the code.

Assessment Conclusions

The observed structural conditions and results of structural evaluation calculations identified a number of elements in the existing grandstands that are not adequate for minimum design loads applicable for this structure type. The reasons for the inadequacies include original member sizing and detailing deficiencies, effects of major settlement, and ongoing deterioration. It is our opinion that the structure requires major strengthening, repair and rehabilitation work in order to be brought into compliance with provisions of the Wisconsin Commercial Building Code guidelines applicable to existing structures. Further, the structure is unsafe for assembly type occupancy in its current condition and repairs need to be made before this structure can be utilized for events. Recommendations for minimum structural repairs have been discussed with the descriptions of individual conditions and deficiencies. The list of needed repairs is extensive but may be summarized by the following:

- Restoration of leaning portions of structure to a plumb condition
- Jacking settled portions and/or installation of supplemental foundation measures
- Strengthen stringers supporting grandstands throughout structure
- Supplement beams and columns below grandstands where applicable
- Supplement bracing and stringer connections with bolts and metal plate connectors
- Replace or repair columns deteriorated at top or base
- Install supplemental rafters to repair rotted or poorly spliced components
- Install wind uplift connections for roof framing
- Replace or supplement split and deteriorated roof lateral bracing and column knee braces
- Replace deteriorated seat and foot boards and guards at ends of structure
- Reconstruct guard around press deck to bring to code compliance

Other repair and maintenance work that is not immediately necessary to remedy unsafe conditions should also be considered in planning for future expenditures. One significant example is roof replacement including removal of cedar shakes below the metal roof and replacement of rotted roof deck boards throughout the roof. Another maintenance item would be repainting the structure to maintain weather resistance.

Considering the significant list of required repair and strengthening measures, state or local building authorities may require additional work to improve accessibility (such as providing an accessible seating area) and/or improving access/egress conditions that do not currently meet the code. Because of the likely expense associated with the repairs and the possibility of requirements for further work to improve accessibility, the option of complete demolition and replacement with a code compliant and accessible structure may be a more economically viable alternative.

LIMITATIONS

The assessment and recommendations in this letter are based on limited site observations. Field observations were limited to visual observations without testing of materials and without removal of finishes to verify obstructed construction. Observations were not made in all locations throughout the structure for the purpose of this evaluation. However, an attempt was made to observe representative conditions in each part of the structure and of most of the different types of framing. More detailed observations were also made in areas of the structure where significant deterioration was observed.

Some portions of the grandstand framing were not accessible for detailed observations at the time of the investigation, as they were hidden behind interior ceilings, metal siding, and roofing felt. Further observations may lead to different conclusions, and conditions may be discovered during repairs and rehabilitation that contradict the limited observations and assumptions described in this report. If conditions that appear to be unsafe are discovered, SEH recommends suspending work and limiting access at the discretion of Polk County and/or the repair contractor until the situation can be further evaluated.

Given the age of the structure, it is unlikely that original construction drawings exist. However, if any documentation regarding original construction or past alterations is located, it may provide useful information regarding the original materials and design intent. Verbal descriptions of proposed repair concepts are provided in this letter. These descriptions are not intended to be complete or final design recommendations. Before repair work or construction is completed, we recommend obtaining construction details and specifications designed and certified by a licensed Professional Engineer. We would be pleased to work with you in developing construction details if a repair approach is taken.

Our services for this project have been conducted to those standards considered normal for services of this type at this time and location. No warranty, express or implied, is intended.

This report includes general information about field observations and the results of structural calculations rather than itemized observations and detailed tabulations of analysis results. Because of the general nature of the report, we would be glad to meet with you and members of the Polk County board to explain and elaborate upon these observations and evaluation results. We would also be willing to meet at the structure to point out specific examples of the conditions of concern. Please feel free to call me if you have any questions about the observations, conclusions and recommendations in this letter.

Sincerely,

SHORT ELLIOTT HENDRICKSON INC.



Benjamin A. Wolf, PE
Senior Professional Engineer

c: Trevor Frank – SEH
Pat Fehrenbach - SEH



Building a Better World
for All of Us[®]

December 6, 2016

RE: Polk County Parks and Recreation
Grandstands Repairs at St. Croix Falls,
Wisconsin
SEH No. POLKC - 138708 14.00

Deb Peterson
Director
Polk County Parks and Recreation
100 Polk County Plaza
Balsam Lake, WI 54810

Dear Ms. Peterson:

In response to our previous Structural Condition Evaluation of the existing Grandstands dated 10/19/16, SEH was asked by Polk County to develop a preliminary cost estimate for required repairs to the Grandstands to allow them to be safely used for events in the summer of 2017.

As documented in our previous report, required structural repairs to this structure are significant. Even temporary repairs would need to address insufficient live load capacity, lateral stability concerns, and wind resistance deficiencies. In addition to required structural repairs or temporary stability measures, there are still several code violations that would also need to be addressed in order to make this structure safe for assembly occupancy.

It is our opinion that probable construction costs associated with repairs and temporary stability measures to allow continued use of the structure would be approximately \$50,000 to \$100,000 - even if repairs were targeted to allow occupancy of only a portion of the structure. If permanent repairs were to be made to this structure we estimate the costs would run between \$150,000 to \$250,000. Additional engineering fees would also be associated with the design of these repairs. These estimates are very preliminary. More detailed estimates can be completed, however additional investigation and design work would need to be completed prior to developing these estimates.

Based on the significant costs for a temporary repair, we recommend that this structure not be used again and that temporary bleachers be utilized until this structure can be removed and replaced with a new facility.

Sincerely,

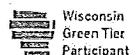
Benjamin A. Wolf, PE
Senior Professional Engineer

c: Trevor Frank – SEH
Pat Fehrenbach - SEH

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Engineers | Architects | Planners | Scientists

Short Elliott Hendrickson Inc., 425 West Water Street, Suite 300, Appleton, WI 54911-6058
SEH is 100% employee-owned | sehinc.com | 920.380.2800 | 888.413.4214 | 888.908.8166 fax



POLK COUNTY, WISCONSIN

Received for record this

22nd day of May

AD 2003 at 12:30PM

and recorded in volume 931

of records page 215

Document Number 657746

Ret. Jeff Faye

Jonnie Hallberg
Register of Deeds

**Agreement Between Polk County and the Polk County Fair Society
for the Management and Use of the Polk County Fairground Land**

1. WHEREAS, Polk County is a body corporate pursuant to Wis. Stat 59.01 and Polk County holds title to the lands, commonly known as the Polk County Fairground Lands, that have a legal description as contained in Exhibit A, which is attached hereto and incorporated herein.
2. WHEREAS, Polk County Fair Society, Inc. (hereinafter "Polk County Fair Society"), is a non-profit corporation, formed in 1973 in accordance with state statutes.
3. WHEREAS, a group of about 100 people organized the first Polk County Fair in 1861, in Farmington Township. It was held in that area until 1886 when the Polk County Fair Society was organized. This organization acquired land in St. Croix Falls, for locating the present fairgrounds. The Polk County Fair Society was officially organized as an agricultural society in accordance with state statutes July 7, 1894.
4. WHEREAS, a change of ownership was deemed beneficial to both parties, Polk County Fair Society sold the Polk County Fairgrounds to Polk County for the sum of one dollar.
5. WHEREAS, Polk County and the Polk County Fair Society entered into an agreement dated April 16, 1975 for the purpose of managing and using the Polk County Fairgrounds, situated on the Polk County Fairground Lands, for the Polk County Fair and other uses as permitted by the Polk County Fair Society.
6. WHEREAS, upon mutual agreement, Polk County and the Polk County Fair Society deem it appropriate to revise the agreement of April 16, 1975.
7. THEREFORE, for the valuable consideration set forth herein, Polk County and the Polk County Fair Society enter into this agreement for the management and use of the Polk County Fairground Lands.

ARTICLE I

General Provisions

1. The April 16, 1975 agreement is hereby terminated and this agreement replaces and supercedes the April 16, 1975 agreement. The April 16, 1975 agreement terminates immediately upon signatures of the parties.
2. The agreement shall be recorded with the Register of Deeds, Polk County. Polk County shall be responsible for recording costs.

ARTICLE II

Fairgrounds Land Description and Definitions

1. The Polk County Fairground Lands is the property described in Exhibit A, which is attached hereto and incorporated herein.
2. The Polk County Fairground means the grounds and all facilities situated on the Polk County Fairground Lands. The Polk County Fairgrounds includes all Facilities consistent with this agreement.
3. An aerial map showing the Polk County Fairground Lands, grounds and facilities, as they exist at the time of the agreement is attached hereto and incorporated herein as Exhibit B.

ARTICLE III

Ownership

1. The Polk County Fairground Lands and facilities are owned and shall continue to be owned by Polk County.
2. Any new fairground facilities constructed on the Polk County Fairground Lands shall be owned by Polk County.

ARTICLE IV

Management and Use of Fairgrounds and Fairground Facilities

1. It is the intent of the parties that the Polk County Fair Society shall have exclusive control of the management and use of the Polk County Fairgrounds consistent with the terms of this agreement. No committee, sub-committee or Department of Polk County shall make or allow any land, structure, or operational changes on

afore described property without the mutual agreement of the Polk County Fair Society and the Polk County Property, Forestry and Recreation Committee.

2. Polk County will provide fairground facilities, including buildings, grounds, grandstand, fences, walkways and roads, that are adequate for the Polk County Society's needs to conduct the Polk County Fair as herein provided.
3. New facilities of the Polk County Fairgrounds will be constructed as the need is determined by mutual agreement of the Polk County Property, Forestry and Recreation Committee and the Polk County Fair Society according to the Polk County Purchasing Policy.
4. The Polk County Fair Society may take such action to repair or replace equipment or materials without consulting the Polk County Property, Forestry and Recreation Committee whenever the Polk County Fair Society Board determines that there exists either an emergency or conditions that may cause a threat to safety of create further damage to buildings and grounds.
5. The Polk County Fair Society shall conduct an annual Polk County Fair and other uses as permitted by the Polk County Fair Society consistent with this agreement. The Polk County Fair Society is responsible for making all arrangements with users of the Polk County Fairgrounds.
6. The Polk County Fair Society will develop standard contracts and rental fee schedules applicable to the use of the Polk County Fairgrounds for the Polk County Fair and for other non-fair uses.
7. Users of fairgrounds shall arrange for security as needed for events.
8. The Polk County Fair Society shall prepare through its Buildings and Grounds Committee a facilities maintenance plan and related budget requests to the Polk County Property, Forestry and Recreation Committee no later than August 31st of each year. This maintenance plan will be developed in conjunction with the Polk County Parks and Buildings Department.
9. Polk County Fair Society will comply with City of St. Croix Falls ordinances, Polk County ordinances, State of Wisconsin statutes and Federal regulations.
10. Polk County Fair Society will comply with legally established Polk County documented policies.
11. Polk County Fair Society will cooperate with Polk County governmental agencies and departments.

ARTICLE V

Financial Responsibilities

1. Polk County is responsible for special assessment costs attributable to the Polk County Fairground Lands.
2. Polk County shall be responsible for the cost of any federal, state or local permit required to construct, repair or improve the Polk County Fairgrounds. Polk County shall obtain any and all permits necessary.
3. The Polk County Fair Society is responsible for the cost of electricity and telephone attributable to the operation of the Polk County Fairgrounds for the Polk County Fair and other uses. Polk County shall be responsible for water and sewer usage costs.
4. The Polk County Fair Society shall seek federal, state and local aid, where available, to conduct and operate the Polk County Fair.
5. Polk County shall provide financial aid to Polk County Fair Society to the extent state aid does not cover exhibit premium costs. Such financial support shall continue in order to assure the continuation for the annual Polk County Fair. This budget cost shall be submitted to the Finance Committee by August 31st each year.
6. The Polk County Fair Society will work with Polk County and its various committees in developing fairgrounds related funding requests to be included in the Polk County Budget each year. The Polk County Fair Society shall submit its budget request consistent with the budgetary and purchasing policies of Polk County.
7. Polk County waives any right to the income that the Polk County Fair Society receives through the Polk County Fair and other non-fair events conducted on the Polk County Fairgrounds as permitted by the Polk County Fair Society. Polk County Fair Society shall retain in its treasury all user fees received, less operational expenses.
8. The Polk County Fair Society shall use income from all sources for the purposes of conducting the annual Polk County Fair and to carry out its obligations under this agreement in managing, using and maintaining the Polk County Fairgrounds.

ARTICLE VI

Insurance

1. Polk County will include property damage and premises liability coverage for the Polk County Fairgrounds and provide the Polk County Fair Society with a certificate of such coverages.
2. The Polk County Fair Society will maintain liability insurance that covers bodily injury and property damage in an amount not less than \$100,000 per occurrence and \$500,000 policy limits. The liability coverage of the Polk County Fair shall extend to premises liability and such coverage shall be primary to Polk County's coverage on the same.
3. The Polk County Fair Society shall maintain workers compensation insurance coverage in an amount not less than \$100,000 per occurrence.
4. The Polk County Fair Society shall provide Polk County with a certificate of said coverages.
5. The Polk County Fair Society shall require a certificate of insurance on liability coverage from any user of the Fairground for uses and events other than the Polk County Fair.

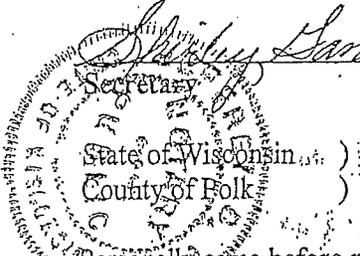
Polk County Fair Society, Inc.

David Berglund
President

May 7, 2003
Date

Shirley Gantner
Secretary

May 7, 2003
Date



State of Wisconsin)
County of Polk)

Personally came before me this 7th day of May, 2003, the above named David Berglund President, and Shirley Gantner Secretary, of the Polk County Fair Society, Inc., to me known to be the persons who executed the foregoing instrument and acknowledge the same.

John W. Lusk
Notary Public, Polk County, Wisconsin
My Commission: 5 Permitted

Polk County

Chairperson

County Clerk

Date

Date

State of Wisconsin)
County of Polk)

Personally came before me this 22nd day of May, 2003, the above named Donald Gutschel, Chairperson, and Cathy Albrecht, County Clerk, of Polk County, to me known to be the persons who executed the foregoing instrument and acknowledge the same.

Tomma J. Belvedere
Notary Public, Polk County, Wisconsin.
My Commission: 2/11/07

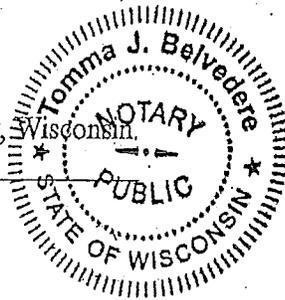


Exhibit A - Legal Description of Fairground Lands

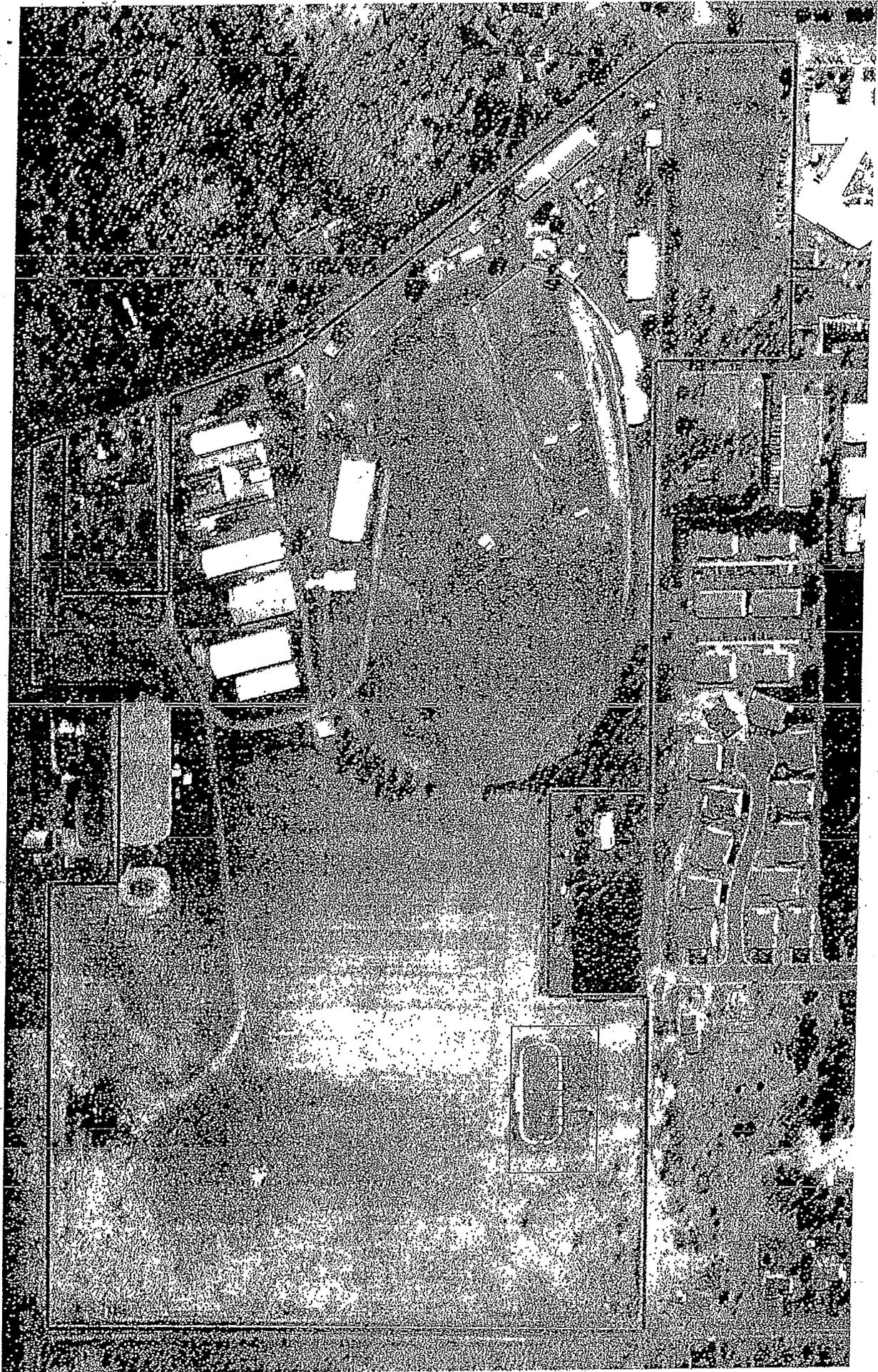
The Polk County Fair Ground Lands consist of the property having the legal description as follows:

1. Outlot Twenty-One (21);
2. The East 235 feet of Outlot Sixty-Two (62);
3. Outlot Sixty-Five (65), except the West 180 feet thereof;
4. Outlot Sixty-Seven (67);
5. The North 188.58 feet of the outlot Sixty-Eight (68);
6. All of outlot Twenty-Two (22), except:
 - a. A parcel of land in the Southeast corner of said outlot Twenty-Two (22) more particularly described as follows: Commencing at the Southeast corner of outlot Twenty-Two (22), thence West along the South line of outlot Twenty-Two (22) 149.75 feet, thence North parallel to the East line of outlot Twenty-Two (22) a distance of 400 feet, thence East along a line parallel to the South line of outlot Twenty-Two (22), a distance of 149.75 feet to the East line of outlot Twenty-Two (22), thence South along the East line of outlot Twenty-Two (22) a distance of 400 feet to the point of beginning; and
 - b. A parcel of land in outlot Twenty-Two (22) as particularly described in Volume 1 of Certified Survey Maps, page 60, as Instrument No. 306653; and
 - c. A parcel of land in outlot Twenty-Two (22) described in Volume 288 of Deeds on page 281, as Document No. 324143.
7. Outlot Sixty-Nine (69);
8. A parcel of land located in outlot Seventy-One (71) more particularly described as follows: Commencing at the Southwest corner of said outlot Seventy-One (71), thence North along the West line of outlot Seventy-One (71) to the Northwest corner of outlot Seventy-One (71), thence East along the North line of outlot Seventy-One (71) a distance of 41.25 feet, thence South parallel with the West line of outlot Seventy-One (71) a distance of approximately 496.8 feet to the North line of Louisiana Street (South line of outlot Seventy-One (71)), thence Southwest along the North line of Louisiana Street (South line of outlot Seventy-One (71)) to the point of beginning.

All said parcels located in the City of St. Croix Falls, County of Polk, State of Wisconsin,

EXHIBIT
B

657746



Alt. Parcel #: 281 - CITY OF ST CROIX FALLS
 Current POLK COUNTY, WISCONSIN
 Creation Date Historical Date Map # Sales Area Application # Permit # Permit Type # of Units
 0

Tax Address: POLK COUNTY		Owner(s): O = Current Owner, C = Current Co-Owner O - POLK COUNTY	
100 POLK COUNTY PLAZA BALSAM LAKE WI 54810		Property Address(es): * = Primary	
Districts: SC = School SP = Special Type Dist # Description SC 5019 ST CROIX FLS SCHOOL DIST SP 0104 ST. CROIX FIRE DISTRIC.		Notes: *	
Legal Description: Acres: 0.760 OUTLOT 69 & THE W 41.25' OF OUTLOT 71 ASSESSOR'S PLAT		Parcel History: Date Doc # 657746 Vol/Page Type 05/22/2003 647746 931/215 AGREEMENT 10/05/1978 388396 411/527 WD 05/30/1975 363691 375/403 WD	

Plat: * = Primary Tract: (S-T-R 40% 160% GL) Block/Condo Bldg:
 * ASCF-ASSESSORS PLAT ST CROIX FA 20-34N-18W

2016 SUMMARY Bill #: Fair Market Value: Assessed with:
 0

Valuations: Last Changed: 10/15/2014

Description	Class	Acres	Land	Improve	Total	State	Reason
COUNTY	X3	0.760	0	0	0	NO	
Totals for 2016:							
General Property		0.000	0	0	0		
Woodland		0.000	0		0		
Totals for 2015:							
General Property		0.000	0	0	0		
Woodland		0.000	0		0		

Lottery Credit: Claim Count: 0 Certification Date: Batch #:

Specials:

User Special Code	Category	Amount
Total	Special Assessments	0.00
	Special Charges	0.00
	Delinquent Charges	0.00