

Bauske, Shelly A.

From: CO-Milton, Tom Lehar <Tom.Lehar@chsinc.com>
Sent: Monday, November 18, 2013 10:45 AM
To: Fahn, Patrick J.
Cc: Jim Jacobs; Bauske, Shelly A.
Subject: RE: requests for variance for two scales at CHS Grain Elevator, Calvin, ND
Attachments: Scan0035.pdf

Pat,

Randy Mikkelsen provided this statement for us over the weekend. Hope this will suffice so we can proceed. Let me know if there is anything else that we might need. Thanks,

Thomas Lehar
General Manager
CHS Country Operations
Milton, ND

701-496-3141 Office
701-370-0100 Mobile

From: Fahn, Patrick J. [mailto:pfahn@nd.gov]
Sent: Friday, November 15, 2013 2:33 PM
To: CO-Milton, Tom Lehar
Cc: Jim Jacobs; Bauske, Shelly A.
Subject: requests for variance for two scales at CHS Grain Elevator, Calvin, ND

Concerning the requests for variance for two scales at CHS Grain Elevator, Calvin, ND
Scale 1 located just east of the recently constructed grain bin towards the north side of the site.
Scale 2 located southeast of the recently constructed grain bin and adjacent to the east side of an existing building near the south end of the site.

The October 29, 2013 Geotechnical Evaluation Report prepared by Braun Intertec Corporation for the Calvin scale locations recommends that unsuitable materials below the mat foundation locations be removed to a minimum depth of 7-1/2 feet from the planned finished grade surrounding the scale and that the excavations be filled with sand having less than 5 percent of the particles by weight passing a #200 sieve and are able to be compacted by standard equipment. The report recommends that the granular fill be spread in 6 to 10 inch thick loose lifts, depending on the type of compactor used.

The report states that a main concern is a "bathtub" condition at the sites due to the excavation and, just as important as proper backfill, is proper drainage of the backfill by establishing and maintaining surficial drainage by sloping perimeter grades down and away from the structure at a minimum slope of 2 to 5 percent. Other options included sealing the surface with pavements, slabs, or low permeability clays, or, installing a permanent drainage system at the bottom of the granular backfill.

The November 7, 2013 Field Density Test Report prepared by Midwest Testing Laboratories, Inc. states that the excavations extended to a depth of approximately 8 feet below the surrounding grade. Midwest Testing states that they

typically recommend a minimum of one compaction be performed for each 2500 square feet at vertical increments of no more than 2 feet. When Midwest Testing arrived on November 6 to perform compaction tests of the engineered fill, the excavations had been backfilled up to the ground surface, concrete had been placed for one of the mat foundations, and the other mat foundation was formed and reinforcing steel had been placed. Since the concrete and formwork was in place, Midwest Testing was unable to test at elevations other than at the final grade or directly below the foundation areas. Midwest Testing states that test pits or dynamic cone penetrometer testing could be used to further evaluate compaction levels at other elevations. Compaction tests in the mat foundation areas indicated compaction levels ranging from 98 to 99.5 percent of the Standard Proctor maximum density at the final grade of directly below the foundation areas. In general, engineered fill compacted to a minimum of 95 percent of the Standard Proctor maximum density would be suitable for support of foundations with bearing pressures of 1500 pounds per square foot or less. Therefore, it appears load bearing of the final or surface lift would exceed the minimum required 1500 pounds per square foot. However, we do not know if the other backfill lifts were the same thickness as the final lift and whether the other lifts were compacted to a minimum of 95 percent of the Standard Proctor maximum density.

One way to resolve the concern is for Mr. Lehar to certify that, for both scale locations, all backfill lifts were spread in the same thickness as the final, to-the-surface-level lift and certify that all lifts were compacted the same as the final lift. This will give the Commission some comfort that the compaction of all lifts meets or exceeds 95 percent of the Standard Proctor maximum density and thus meets or exceeds bearing pressures of 1500 pounds per square foot. The other way to resolve the concern is to test as Midwest Testing suggests using test pits or dynamic cone penetrometer testing to evaluate compaction levels at other elevations.

Mr. Lehar should also certify that proper drainage of backfill has been established and will be maintained in one of the ways recommended by the Geotechnical Evaluation Report. I have attached a sample certification to this email.

Patrick Fahn
Director
Compliance and Competitive Markets

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Tom Lehar, Manager
CHS GRAIN ELEVATOR
CALVIN, ND

CERTIFICATION OF APPLICANT

The undersigned, Randy Mikkelsen, being the President of Mikkelsen Brothers Const Inc, of Langdon, ND, having the authority to act on behalf of and bind Mikkelsen Brothers , does hereby certify under oath:

1. Mikkelsen Brothers performed excavations and backfill of both scale locations of the CHS facility in Calvin, ND.
2. Excavation and backfill were performed exactly to the specifications recommended by Braun Intertec Corporation.
3. Materials and equipment used throughout the excavation and backfill process were consistent and work was performed in the same manner throughout the project. The results obtained by Midwest Testing Laboratories at the surface should be indicative of the remainder of the project.
4. I feel confident that the entire fill area meets or exceeds compaction requirements and positive drainage has been obtained.

Dated this 16th day of November, 2013.

MIKKELSEN BROTHERS CONST, INC

By Randy L. Mikkelsen
Randy L. Mikkelsen, President

STATE OF NORTH DAKOTA
CAVALIER COUNTY

Subscribed and sworn to me the 16th day of November, 2013, by Randy L. Mikkelsen.

Jodee K. Peterson
NOTARY PUBLIC

My commission expires _____

<p>JODEE K. PETERSON Notary Public, State of North Dakota My Commission Expires February 28, 2016</p>
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