Case No. 21VA006

Legal Description:

Lots 14 thru 16 of Block 3 of Riverside Addition, located in Section 35, T2N, R7E, BHM, Rapid City, Pennington County, South Dakota
April 14, 2021

Brian Neumann
Moyle Petroleum
2405 West Main Street
Rapid City, SD 57702

RE: Omaha Street Common Cents
Existing Canopy Assessment
Rapid City, SD
AEI #2021-205

Dear Brian,

As requested, we have reviewed the existing visible conditions of the canopy at the Omaha Street Common Cents in Rapid City, SD. The request was based upon recent events in which the canopy was experiencing very large movements during a major wind event that raised concerns about the overall safety of the canopy.

On March 29, 2021 very strong winds were occurring in Rapid City. It was reported by both you and Bob Conway (of RCS Construction) that the concrete pavers adjacent to the canopy piers was visibly moving up and down and that the canopy was basically hitting the overhang of the building.

On April 7, 2021 I observed the existing canopy. Several items of note were observed at that time, including:

1. Canopy constructed of (3) large HSS column sections. Columns form a north-south line. For report purposes the columns are simply called the north, center, and south columns.
2. Steel framing is constructed atop the columns. That framing appears to be undamaged.
3. At north column, column stiffeners were welded to baseplates. The welds connecting the stiffeners to the column have completely fractured. Fractures went thru wall of square tube. The fractures have significantly compromised the structural integrity of the columns.
4. At the south column similar fractures exist
5. The foundations below the columns are unknown
6. The columns are significantly out of plumb and leaning more or less to the east.

It is our opinion that the conditions of the canopy observed result in serious concerns about the structural integrity, and hence safety of the overall canopy structure. The column connections have failed and the foundations appear to have been compromised. It is our recommendation that the canopy structure be taken down as soon as practical and that the areas in and around the canopy should not be allowed to be occupied during periods of significant winds.
Furthermore we are of the opinion that the repairs needed to the columns and foundation would be extensive and complicated to complete and would most likely include the following:

1. Careful deconstruction of the existing canopy down to basically the individual components.

2. Removal of existing foundations

3. Detailed analysis of the existing canopy to determine if all components are in compliance with current building code provisions. There is a significant chance that many of the components will not meet current building code provisions and will need to be strengthened or replaced.

4. Modifications to the existing columns

5. Construction of new drilled piers

We are not able to define what wind speed to which this limit applies without completing a detailed structural analysis of the entirety of the structure and foundations. To complete that analysis would require significant time and effort and exposing of the foundations. It is our opinion that the effort needed to complete this analysis only serves to delay the demolition and lengthen the time of exposure of the canopy to the public. The largest wind events are typically thunderstorms and we are about the enter into that season in our region.

Sincerely,

Albertson Engineering Inc.

[Signature]

Michael D. Albertson, PE
President
North Column Base Looking North – Note column stiffeners on west side of column and fractures of the connection of the stiffener to the column
Rapid City, SD
36" High - Exxon - G3 Spectrum LED

E1
No Logo
1.6875" Routes, 39.375" SO

E2
Sign Box
LED Light Bar

E3
Sign Box
LED Light Bar

E4
Sign Box
LED Light Bar

Plan View – Approximate Scale

RECEIVED
JUN 09 2021
RAPID CITY DEPARTMENT OF COMMUNITY DEVELOPMENT

Legend
Field cut and route panels as required in the field. Make the cut panel 1" larger than space. If all routes the route cut panel 1" in from the edge, repeat on other edge of panel if necessary.

FR - Field Route Corner Panel
FC - Field Cut Panel
S10 - 10" Solid Striped Panel
S5 - 59" Solid Striped Panel
W10 - 10' White Panel
W5 - 59' White Panel
90WC - 90deg White Corner
18RWC - 18" Radius White Corner