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# SOIL TESTING SERVICES OF WISCONSIN, INC.

540 LAMBEAU ST.

GREEN BAY, WIS. 54303

February 4, 1976

Daverman & Associates, Inc. 601 Ingalls Street Petoskey, Michigan 49770

Attention: Mr. Leo Brady

M-6908-B

Re: Nelson stud welding inspection at the Marquette County Court House Annex in Marquette, Michigan.

### Gentlemen:

On January 29 and 30, 1976, at the request of Mr. Leo Brady of Daverman & Associates, Mr. Hans Regnier, Chief Materials Inspector for Soil Testing Services of Wisconsin, Inc., inspected the in-place welded Nelson studs. Mr. Brady and Mr. Regnier met at the site, and discussed the procedures of the stud welding and inspection.

Please find enclosed the reports of the first and second floor stud weld inspection for the above referenced project.

The stud welding was conducted through a galvanized metal deck material into the steel beams. At the time of inspection the first and second floors were not closed in and the decking was covered with snow. After cleaning the snow from the stud welds, a visual inspection of the welds was conducted by Mr. Regnier, in the presence of Mr. Brady. The visual inspection of the studs indicated that the welds did not have the appearance of normal welds. That is, the following types of defects were noted during the visual inspection: a) studs without a fillet around;

- b) studs with a partial fillet;
- c) study not welded with the stud shaft flush to the beam;
- d) fillet material at significant distance from the required weld location.

AFFILIATE OF SOIL TESTING SERVICES, INC.

.The visual inspection was started in the southwest area of the first floor of the building at column line 2K. The visual inspection indicated approximately 60% to 80% bad welds. A physical inspection with a hammer was performed to bend the studs 15 degrees from vertical, as suggested for Nelson stud testing. Numerous studs welds broke before reaching the 15 degree bend test. By examination of the welded stud ends after they were snapped off, the following internal weld defects were noted:

- a) porosities:

  - incomplete welds.

The physical inspection with the hammer indicated over 50% failure of the stud welds in this southwest area. Mr. Brady requested Soil Testing Services to inspect and test 100% of the in-place stud welds on the first and second floor. Mr. Regnier arranged the personnel for the completion of inspection of stud welds for both floors. The stud weld inspection was completed by Mr. Regnier on January 30, 1976.

Mr. Brady slated his opinion that the high failure rate (41% overall) of the stud welds was due to performing the welding under unfavorable weather conditions. We would conceive that this is a possible contributing factor. Mr. Regnier observed that the welding contractor neglected to keep the studs and ferrules dry, by leaving the unused items in open boxes, exposed to the weather on the first floor.

If you have any questions regarding this report or if we can be of any further assistance to you, please do not hesitate to contact us.

Yours very truly,

ERVICES OF WISCONSIN. INC.

Chief Materials Inspector, C.E.T.

HJR/dg

Enc.

## MARQUETTE COUNTY COURT HOUSE ANNEX

# A. Nelson studs welded through metal decking

P	lst. Floor	Total placed studs Total failed studs		2111	854	40.5%
	2nd Floor	Total placed studs Total failed studs		2206	924	41.9%
	Total placed Total placed	studs thru decking studs failed	. "	4317	1778	41.2%
В.	Nelson studs	welded on steel beams				
×	lst. Floor	Total placed studs Total failed studs		587	86	14.7%
	2nd Floor	Total placed studs Total failed studs		841	172	20.5%
	Total placed Total placed	studs on steel beam studs failed		1428	258	18.1%

# C. General total of studs inspected on the 1st. & 2nd floor

Through metal	decking	4317 Studs	-	41.2%	Faile

On steel beams 1428 Studs - 18.1% Failed

Total: 5745 Studs inspected

Hans J. Regnier

Chief Materials Inspector, CET

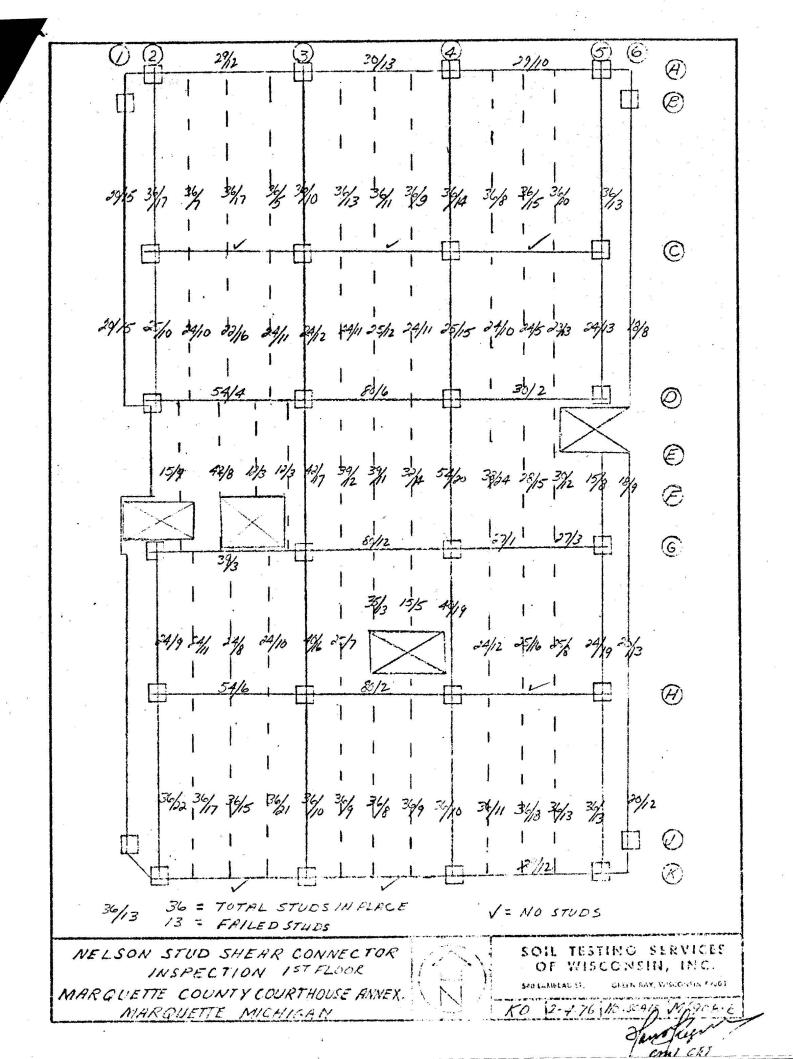
## MARQUETTE COUNTY COURT HOUSE ANNEX

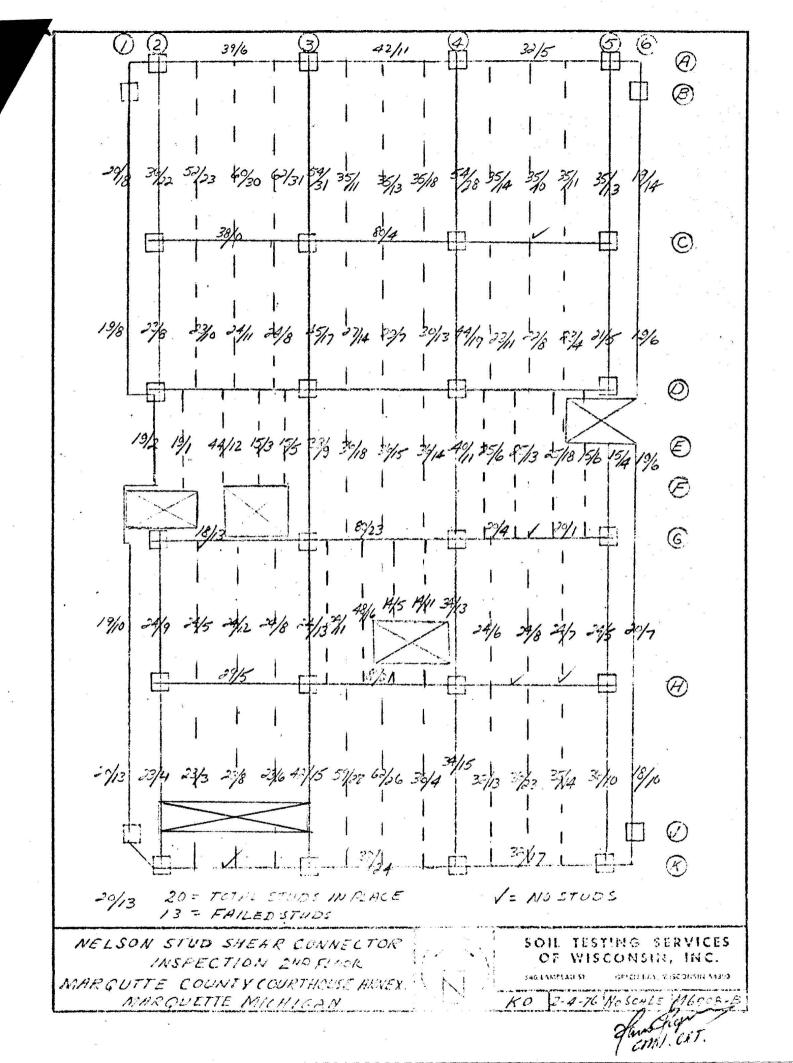
1st Floor Column Line Column Line Column Line Column Line 3-4 4-6 1-3 Failed Total Failed Total Failed Total Failed Failed Failed Studs Studs Studs Studs Studs Studs 164 61 31.7% 144 46 A-C 37.2% 180 57 31.9% B-Line 29 41.4% 43.3% 34.5% 12 30 13 29 10 (Studs on Beam)-C-D 62 61 50.0% 49 43.4% 115 53.9% 122 113 C-Line-D-G 81 28.4% 68 52.7% 206 74 35.9% 23 129 6.7% D-Line-54 4 7.4% . 80 6 7.5% 30 2 68 57.6% G-H 96 . 38 60 38.7% 118 39.6% 155 7.4% 80 54 4 G-Line-12 39 3 7.7% 15.0% 144 164 66 . 40.2% H-K 75 52.1% 180 46 25.6% 54 11.1% H-Line-6 2.5% . 80 2 28 42.9% K-Line -12 Total: Studs thru Metal Decking 600 43.2% 843 298 35.4% 668 297 44.5% 259 40.5% Average Total: Studs on 14.2% 28 Steel Beam 176 25 270 33 12.2% 141 19.8% 14.7%

Average

## MARQUETTE COUNTY COURT HOUSE ANNEX

2nd Floor Column Line Column Line Column Line Column Line 1-3 3-4 4-6 Failed Total % Failed Total Failed % Total Studs Failed Studs Studs Studs Failed Studs Failed Studs A-C 124 101 47.4% 62 230 53.9% 213 159 39.0% 39 B-Line 6 15.4% 42 11 26.2% 15.6% 32 5 (Studs on Beam) 34 C-D 113 45 39.8% 175 40.0% 108 31.5% 70 C-Line-84 4.7% 38 0 0% 4 42.7% D-G 112 23 20.5% 186 67 36.0% 124 53 16.7% D-Line -63 10 15.9% 80 22 27.5% 36 6 28.4% G-H 115 44 38.3% 158 69 43.7% 116 33 12.5% G-Line. 48 27.1% 80 28.7% 40 5 13 23 44.6% H-K 112 34 30.4% 230 95 41.3% 157 70 · 80 26.3% H-Line . 29 5 17.2% 21 24 63.2% 53.1% K-Line\* 38 32 17 Total: Studs 402 664 thru Decking 270 46.4% 960 41.9% 252 37.9% 582 41.9% Average Total: Studs on 140 23.6% Steel Beams 484 21.7% 33 217 34 15.7% 105 20.5%





# CITY OF MARQUETTE MICHIGAN 49855

THOMAS MCNABB



(906) 228-8200 Ext. 21

February 12, 1976

Mr. Gary Yoder County Controller Marquette County Courthouse Marquette, Michigan 49855

Dear Gary:

In accordance with the joint meeting held by the City Commission and County Commissioners, I am enclosing herewith for the County's review and approval rough drafts of a proposed agreement and covering letter concerning the County's need for additional parking at the County Courthouse Complex.

If you or any County Commissioner have any questions concerning the two enclosures, please contact my office.

Sincerely yours,

T. R. McNabb, City Manager

TRM:ml

Enclosures: 2

ROUGH DRAFT of a covering letter to the proposed parking agreement.

Marquette City Commission 300 West Baraga Avenue Marquette, Michigan 49855

Dear Commissioners:

The Marquette City Commission and County officials met on February 11, 1976 and discussed the off-street parking requirements for the County buildings located in the 200 block of West Baraga Avenue.

It was agreed that the 13 on-site parking stalls at the new jail facility are in accordance with the City's zoning requirements; that the present County Courthouse required 38 parking stalls and that the new Courthouse Annex will require an additional 70 parking spaces, bringing the total parking requirements to 121 for the three buildings.

The County is now providing 13 on-site parking spaces at the jail site; approximately 40 spaces on the north side of Spring Street and is leasing an additional 12 spaces from the City at the southwest corner of Third Street and Baraga Avenue.

In accordance with the enclosed agreement, the County will provide the additional parking spaces to meet the City's zoning regulations.

Sincerely yours,

Clayton Anderson, Chairman Marquette County Commission

Enclosure: Agreement

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The Marquette County Board of Commissioners and the City of Marquette agree to the following items concerning the construction of the Marquette County Courthouse Annex:

- The City of Marquette, Michigan will issue a building permit to the County for the construction of the building, although the County has not complied with the City's offstreet parking requirements.
- 2. The County agrees to obtain 121 off-street parking spaces required by the City's Zoning Ordinance in effect on January 1, 1976 and agrees not to occupy the new County Annex building until the City's off-street parking requirements have been met or are in the process of being constructed.

COUNTY OF MARQUETTE	CITY OF MARQUETTE
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# CITY OF MARQUETTE

THOMAS MCNASS CITY MANAGER



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March 10, 1976 DA 7305-23A

Northern Michigan Soil & Material Testing, Inc. 400 Spring Street Marquette, Michigan 49855

RE: Nelson Stud Connection Tests
Marquette County Courthouse

Gentlemen:

Please forward a breakdown for your invoice No. 00828 showing dates and number of hours for each date.

I need this information before I can present this invoice to the Owner for payment.

Sincerely,

DAVERMAN ASSOCIATES, INC.

Leo Brady

LB/gs

CC: Mr. Gary Yoder / Mr. Dave Tulos