

STRUCTURAL CONDITION ASSESSMENT REPORT

*Fort Bend Independent School District – Clements High School
4200 Elkins Road
Sugar Land, Texas 77479*

Prepared for:
FBISD Design and Construction



Texas Registered Engineering Firm: F-3426

Prepared by:
Dally + Associates, Inc.
*9800 Richmond Avenue, St. 460,
Houston, Texas 77042
Report No.: 22-219-1
September 12, 2022*

This report is a structural assessment of the existing building and includes instructions and requirements of our client.
It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Dally + Associates, Inc. Job No.: 22-219-00

TABLE OF CONTENTS:

EXECUTIVE SUMMARY:	3
INTRODUCTION:	3
SCOPE OF WORK:	4
EXISTING BUILDING INFORMATION:	4
SITE VISIT:	5
OBSERVATIONS:	5
CONCLUSION AND RECOMMENDATIONS:	5
APPENDIX	7

EXECUTIVE SUMMARY:

Dally + Associates was engaged to perform a structural assessment of Fort Bend Independent School District's (FBISD) Clements High School, located at 4200 Elkins Road, Sugar Land, Texas 77479. The assessment was requested by Carolina Fuzetti with FBISD Design and Construction.

The evaluation considered the structural stability of the existing building and identifying structural and nonstructural damage. The walkthrough consisted of a visual observation of the existing building. Additionally, the walkthrough performed was visual in nature and did not involve any non-destructive or destructive testing methods to identify existing conditions. All observations were made in the readily accessible parts of the building.

INTRODUCTION:

This report summarizes the visual structural condition assessment of FBISD's Clements High School, located at 4200 Elkins Road, Sugar Land, Texas 77479.

Figure 1: Aerial image (Google Maps) of FBISD's Clements High School



Construction documents were available for Clements High School. This building is two stories with metal roof deck on steel open web joists and wide flange girders, level 2 non-composite metal deck on steel open web joists and wide flange girders, steel columns, and slab-on-grade foundation with grade beams and belled piers.

Dally + Associates was retained by FBISD Design and Construction to conduct a limited visual assessment of the above located existing building, assess the building's structural stability, and identify structural and nonstructural damages.

SCOPE OF WORK:

The scope of our services was limited to preliminary visual assessment of the structural system for FBISD's Clements High School.

The assessment did not involve a detailed inspection of every structural element. Our investigation was further limited to readily visible elements without removing finishes, cladding, coverings, and other obstructions to expose concealed conditions. Further, the assessment was executed with the use of the unaided eye without any specialized tools.

The following items were outside the scope of services of our assessment and are not included in this report:

- Destructive and non-destructive materials testing and inspection.
- Review of existing conditions for conformance to past or current building code requirements.
- Review of the original structural design to evaluate structural performance.
- Review of non-structural components.
- Review of existing building MEP systems and equipment.

Included in this report is a summary of our site visit and visual assessment, assessment of the building structural stability, and identification of structural and nonstructural damages.

EXISTING BUILDING INFORMATION:

Record drawings documenting the building's original design and construction were available. The following general information was determined based on review of the existing documents and limited observations made during our site visit.

The building consists of two stories with steel framing. The first floor is slab-on-grade with concrete grade beams and belled piers. The second floor is non-composite metal deck on steel open web joists and wide flange girders. The roof is metal roof deck on steel open web joists and wide flange girders.

SITE VISIT:

A site visit was performed by Dally + Associates to visually assess the structural condition of FBISD's Clements High School. The walkthrough was conducted on June 23, 2022 and August 8, 2022 by Dally + Associates after authorization from Carolina Fuzetti with FBISD Design and Construction. The building was in operation at the time of site visit.

OBSERVATIONS:

A summary of general observations made during our site visit is provided below. Photographs documenting our observations are included in Appendix.

1. Significant cracks and movements visible around the exterior perimeter of the building.
 - Horizontal movement between the exterior cladding and adjacent paving. (See Photos 1-2.)
 - Vertical movement between the exterior cladding and adjacent paving. (See Photos 3-4.)
 - Cracks in adjacent paving. (See Photo 5.)
 - Cracks in exterior brick cladding. (See Photos 6-7.)
2. Significant cracks visible in the interior non-load bearing CMU walls on level 1.
 - Music hall. (See Photos 8-10.)
 - Gym hall. (See Photo 11.)
3. Significant cracks visible in the flooring on level 1.
 - Cafeteria and hallways. (See Photos 12-13.)
4. Noticeable heaving and settling of subgrade on level 1.
 - Gym hallway. (See Photo 14.)
 - Boys' bathroom. (See Photo 15.)
 - Library. (See Photo 16.)
5. Significant cracks visible in the flooring at the expansion joint between area A and G, adjacent to the stairs, on level 2.
 - Cracks in flooring. (See Photo 17.)
 - Structural framing at expansion joint. (See Photo 18.)
 - Structural framing plan (1981 structural drawings) expansion joint. (See Figure 2.)
 - Structural detail (1981 structural drawings) at expansion joint. (See Figure 3.)

CONCLUSION AND RECOMMENDATIONS:

Based on our limited investigation and condition assessment, we did not see any evidence of global structural instability. The following cracks and movements observed do not contribute to the structural stability of the building:

- Cracks and movements around the exterior perimeter of the building
- Cracks in the exterior brick cladding
- Cracks in the interior non-load bearing CMU walls
- Cracks in the flooring on level 1's slab-on-grade
- Movement of the subgrade on level 1

To determine the cause of the subgrade movement, additional testing could be required.

The cracks visible in the flooring at the expansion joint between area A and G, adjacent to the stairs, on level 2 are likely due to the cantilevering outriggers with no back-span (see Photo 18). According to the existing structural drawings, the cantilevering outriggers were designed to have back-spans (see Figures 2-3). Without a back-span for the cantilevering outriggers, the flooring would be subjected to a greater deflection than originally design for.

The review of the building was performed with the unaided eye and without the laboratory testing of materials. Opinions and recommendations presented in this report are based primarily on observations of the exposed structure, the qualified knowledge and experience of the personnel in this office, and information provided by persons requesting and/or present at the time of the site visit. Concealed conditions that become exposed during future investigations and construction may necessitate changes to the recommendations presented herein, therefore we request that our office be notified if actual conditions differ from that stated or assumed in this report. No warranties, expressed or implied, are made by the conclusions, opinions, recommendations, or services provided.

This report has been prepared for the sole use of the client identified in the report and cannot be relied upon in whole or in part by other persons or entities without the joint permission of the client and Dally + Associates. The observations and recommendations contained herein are limited by the scope and intent of the work mutually agreed upon by the client and Dally + Associates.

If you have any questions or wish to discuss the information presented in this report, please do not hesitate to contact our office.

APPENDIX

Photo 1



Description: Horizontal Joint between Exterior Cladding and Adjacent Paving

Photo 2



Description: 2-Inch Horizontal Movement between Exterior Cladding and Adjacent Paving

Photo 3



Description: Vertical Moment between Exterior Cladding and Adjacent Paving

Photo 4



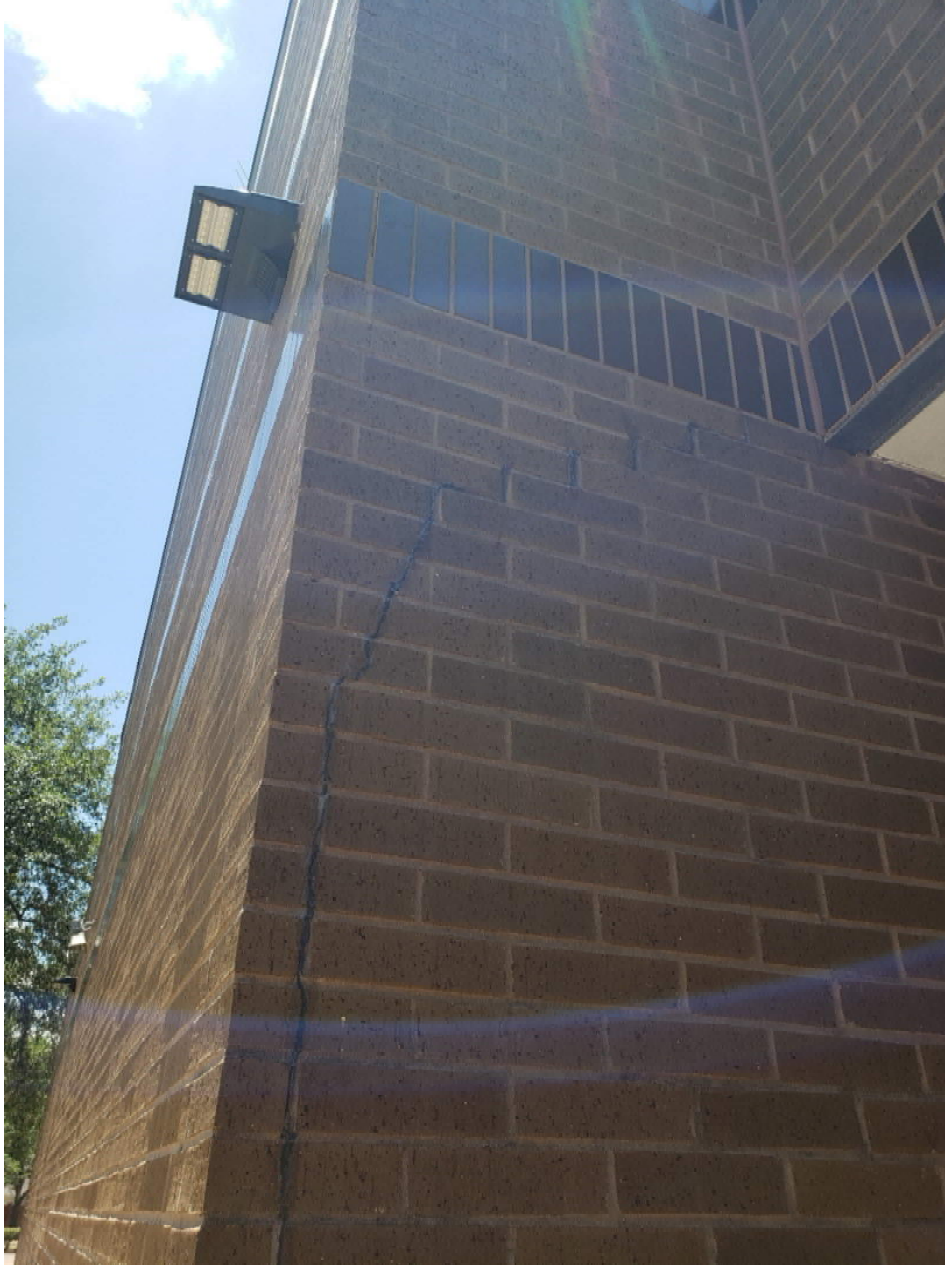
Description: 4-Inch Vertical Movement between Exterior Cladding and Adjacent Paving

Photo 5



Description: Cracks in Adjacent Paving

Photo 6



Description: Cracks Exterior Brick Cladding

Photo 7



Description: Cracks Exterior Brick Cladding

Photo 8



Description: Cracks in Non-Load Bearing CMU Walls in Music Hall on Level 1

Photo 9



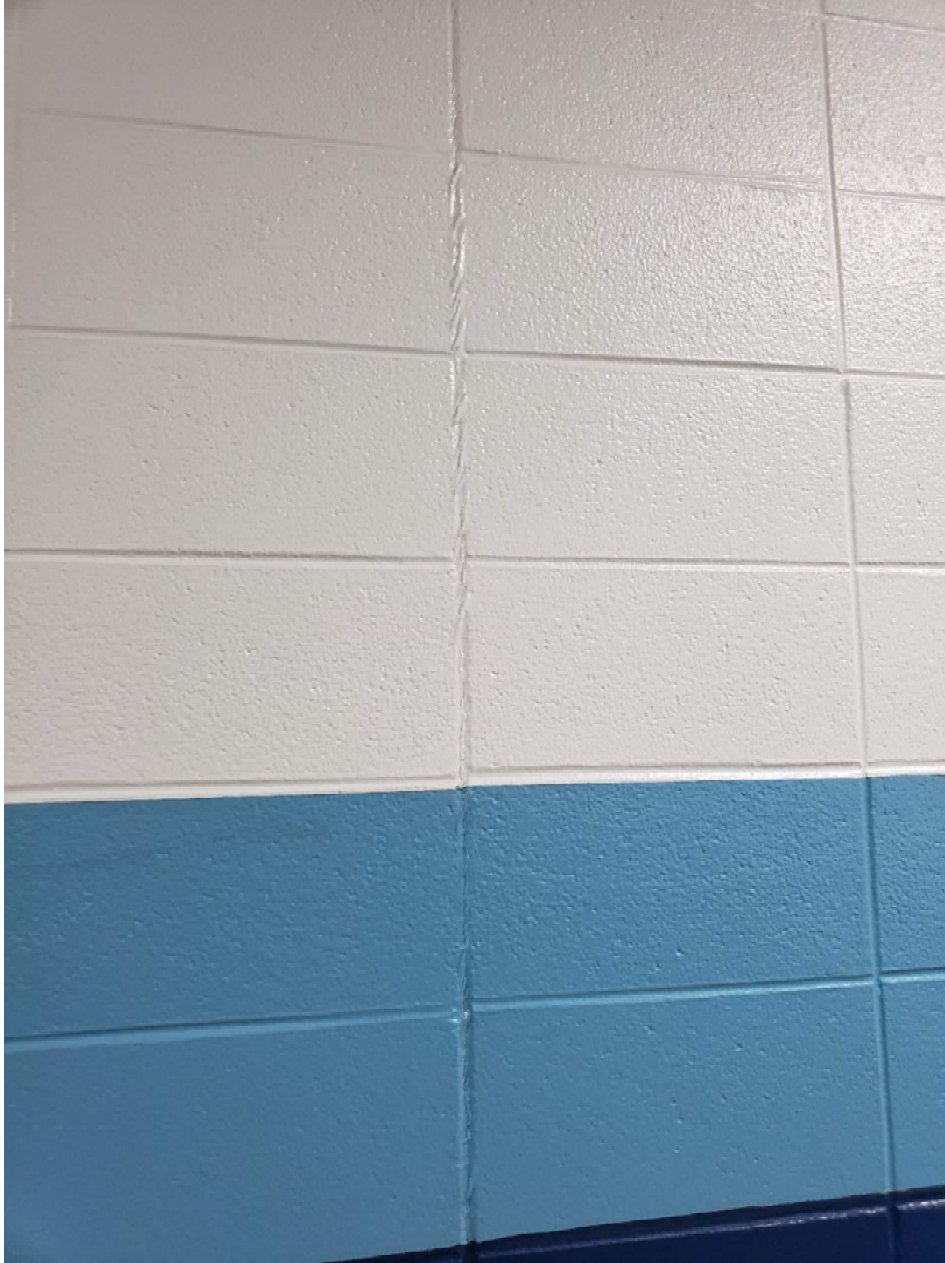
Description: Cracks in Non-Load Bearing CMU Walls in Music Hall on Level 1

Photo 10



Description: Cracks in Non-Load Bearing CMU Walls in Music Hall on Level 1

Photo 11



Description: Cracks in Non-Load Bearing CMU Walls in Gym Hall on Level 1

Photo 12



Description: Cracks in Flooring of Cafeteria and Hallways on Level 1

Photo 13



Description: Cracks in Flooring of Cafeteria and Hallways on Level 1

Photo 14



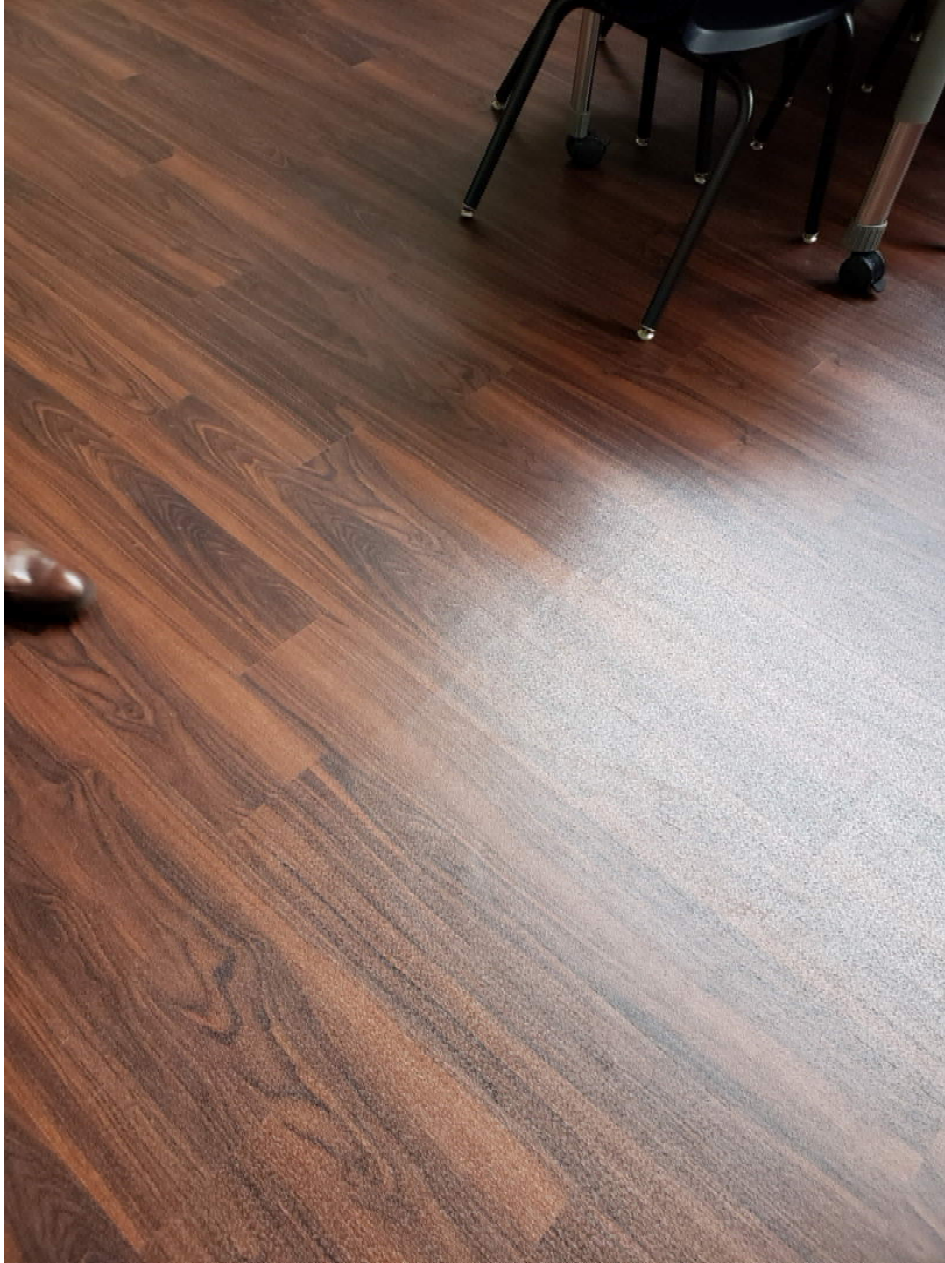
Description: 7/16-Inch Vertical Movement in Flooring of Gym Hallway on Level 1

Photo 15



Description: Noticeable Heaving and Settling of Subgrade in Boys' Bathroom

Photo 16



Description: Noticeable Heaving and Settling of Subgrade in Library

Photo 17



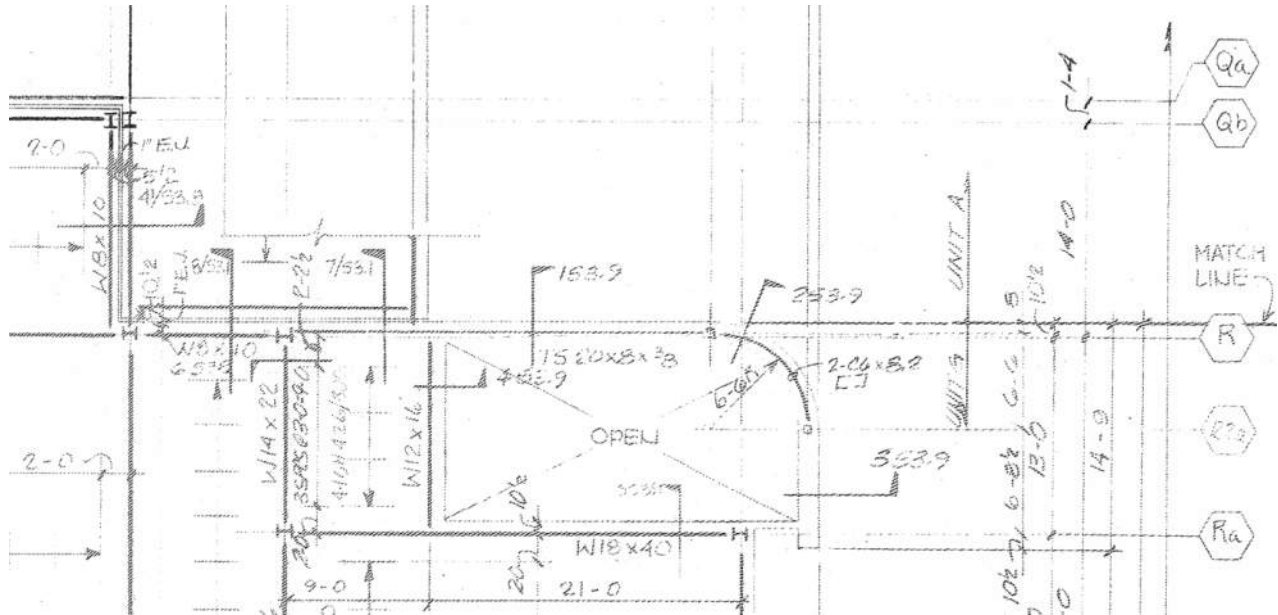
Description: Cracks in Flooring Around Expansion Joint between Area A and G, Adjacent to the Stairs, on Level 2

Photo 18



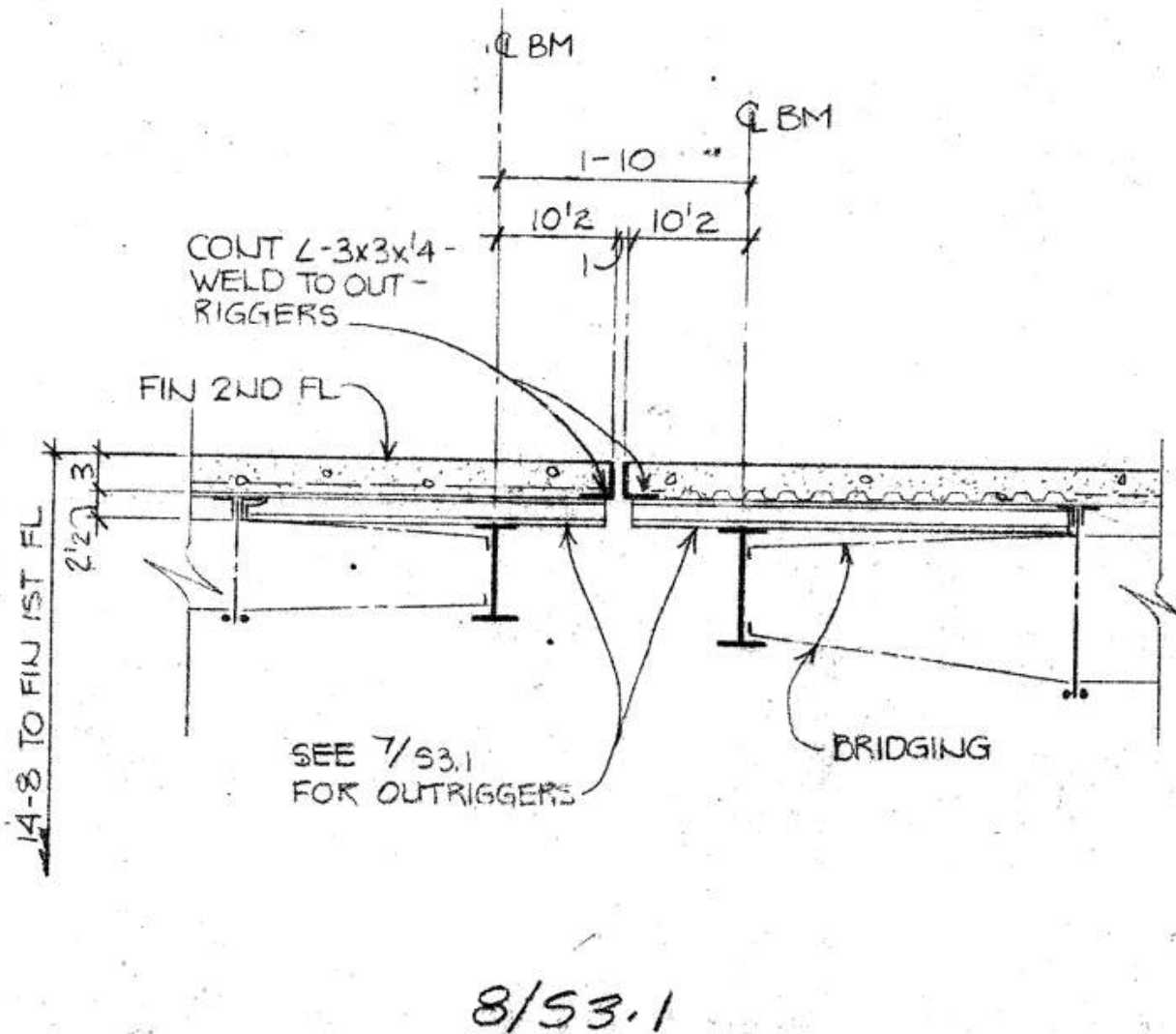
Description: Structural Framing at Expansion Joint between Area A and G, Adjacent to the Stairs, on Level 2

Figure 2



Description: Structural Framing Plan (1981 Structural Drawings) at Expansion Joint between Area A and G, Adjacent to the Stairs, on Level 2

Figure 3



Description: Structural Detail (1981 Structural Drawings) at Expansion Joint between Area A and G, Adjacent to the Stairs, on Level 2

End of Report